THE RELATIONSHIPS BETWEEN STUDENT'S APPARENT ATTENTION DURING ENGLISH AS A SECOND LANGUAGE CLASS AND THE AMOUNT OF KNOWLEDGE ACQUIRED

By

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ABSTRACT

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The purpose of the study was to investigate the relationship between the subjects' background experience and the apparent attention. Also the study attempted to investigate the relationship between subject's age, sex, and motivation and apparent attention. The study was designed to answer the following questions:

1. Do quick non-intensive self-reports provide valid data on global attention that correlates with:
   - -observer judgement
   - -teacher judgement
   - -interview results
   - -questionnaire results
2. Under what conditions do students attend most in the TESL classes?
3. Are the grades students receive in the course related to the level of attention they reportedly paid during the class?

The sample for this study consisted of students enrolled in the Method of Teaching English as a Second Language class, "407", at Michigan State University during Fall term, 1987. A total of fifty-six students were in the class. The (10) students were randomly selected from the class to be observed extensively and interviewed by the researcher.

Methodologies employed, were questionnaire, thought sampling questionnaires, observations by the researcher and interviews.

The findings revealed the rate and importance of the type of activities and length of the activities on the student's attention level.

Timing of the activities appears to have a slight influence on the student's attention level. The results also indicated that there were significant differences in the level of attention to various classroom activities based on age. Gender was not related to level of attention to various classroom activities except for attention to lecture versus individual activities in which married students showed higher levels of attention than single students. Academic classification was not significantly related to level of attention in all classroom activities. Teaching experience and reason for taking the course were not related to the level of attention. Finally, the study revealed that the level of attention had a significant role in the student's knowledge gain (final grade).

Dedication

This work is dedicated to my beloved husband, Hani Barakat, for his support and consistent understanding throughout my graduate studies. I would like to dedicate this work also to my beautiful daughter Hoda Barakat. A special dedication to my parents who made me the person that I am and for their consistent belief in me.

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Chapter I

Introduction

Second language acquisition research is currently preoccupied with the role of comprehended language, either in informal exposure to language or the development of language proficiency. The research so far has looked at various factors including the kind of language that students hear or read and the order in which morphemes are acquired.

However, a major area that has not been adequately investigated is the amount of attention that students pay in instructional settings. Unfortunately, the study of attention has not provided either the conceptual framework or the instruments totally adequate for measuring attentiveness.

This study attempts to address directly the question of what attention is and also to determine the relationship between the apparent attention students are paying and the amount of knowledge they acquire.

Recently, researchers have moved away from a primary concern with teacher behavior to other instructional variables. Under student variables, attention has been thought to be important. Carroll (1963) and Bloom (1976) emphasized this variable because they felt that student engagement with the material (or attention) is clearly necessary for learning. Harper (1976) believed that "attention" should be involved in all formal and informal education. McCuttough and Traxter (undated) believed that attention is a prerequisite to learning.

The most important question in this study concerns the variables related to instructional attentiveness. These include types of activity, length of activity and timing of the activity during a particular class. The instructional setting selected is an "English as a Second Language"

teacher training course at Michigan State University. Because precise theories and methods to measure a wide spectrum of attentiveness have not been developed, the study will also attempt to refine a particular method that has recently come under serious investigation. Global attention will be measured through a procedure termed thought sampling. These concepts will be discussed in Chapter II "Review of Literature." In addition, attention will be studied through direct observation, interviews, and a questionnaire.

Purpose of the Study

The purpose of this study is to investigate the relationship between the subjects' background experience and apparent attention. The study also attempts to investigate the relationship between subject's age, sex, and motivation, and apparent attention. The study will not answer questions related to aspects such as focal attention, vigilance and arousal level.

Since there is little documented information about the relationship between the apparent attention a student is paying and the amount of knowledge acquired, it was necessary to investigate factors that could solve some of the problems related to teacher effectiveness and desirable student outcomes. The results of this study would give ideas for concerned teachers to identify the variables that affect learning. The study may help students learn how to respond to instruction, and it may aid teachers by providing information about the arrangement of the classroom environment and the type of activities that can attract and maintain students' attention.

The investigation is designed to answer the following questions:

1) Do quick non-intensive self-reports provide valid data on global attention that correlates with
   -- observer judgements
   -- teacher judgements
   -- interview results
   -- questionnaire results.
2) Under what conditions do students attend most in the TESL Classes?
3) Are the grades students receive in the course related to the level of attention they reportedly paid during the class?

To summarize, the purpose of the study is to determine the reported level of attentiveness and the conditions underlying that level of attentiveness during (TESL) class activities and the relationship of the attentiveness to the final course grades students receive.

Hypotheses

1. There is a positive correlation between global level of attention and the following variables:
   -- Sex
   -- Age
   -- Marital status
   -- Academic classification
   -- Teaching experience
   -- Reason for taking the course
2. There is a positive correlation between global attention and the following variables:
   -- Interaction in the classroom

— Length of activities

— Timing of activities

3. There is a positive correlation between students' apparent attention and course grade (Knowledge acquisition).

Definition of Terms

Meldman (1970) summarized the following definitions:

Attention is a preparatory stage in perception or exploration (Woodworth, 1950).

The term "attention" describes a stage of heightened or increased awareness of particular sensations (Reinholds, 1955).

Attention involves the selective awareness of a certain sensory message with simultaneous suppression of others (Hernandez et al., 1956b).

Attention is a selective function which enhances awareness of something in particular (Oswald, 1958).

Attention may be regarded as serving a "tuner" function for perception (Sentos et al., 1959a).

Attention refers to a selectivity of responses (Hebb).

For the purpose of this study attention is defined as "bodily position appropriate to and directed toward the designeated stimuli; appropriate silence; appropriate response to the teacher's instructions; no display of disruptive behavior, fully seated in an upright position within three feet of the parimeter of the group" (Hawn, 1973 p.1).

Focal Attention: The act of directing the attention at particular objects, while excluding the rest of the field. Such behavior speaks "a relatively autonomous capacity for object interest" (Meldman, 1970, p.6), and this interest is pursued at times when major needs are in abeyance. High need pressure is the enemy of exploratory play and is a condition

under which a person is unable to achieve an objective grasp of the environment. Low need pressure is a requisite of a person to perceive objects as they are in their constant character, apart from hopes and fears he or she may at other times attach to them. The autonomous capacity to be interested in the environment is of great value for the survival of the species (Schachted, 1954).

Primary Attention is a process in which there is an unimpeded thrust into the focus of consciousness due to the intrusion into the environment of stimuli which have certain specific parameters.

Secondary Attention is derived attention, built up on the basis of the history of the organism. This is a learned response based upon the previous experience and training of the organism. It is a type of conditioned response to a conditioned signal (Grastyan, 1959).

Active Attention: It is the device to pursue the external and internal processes, to direct the path of the senses and thought.

Level of Attention: It is a moving process that is associated with fluctuations in the rate of awareness as well as fluctuations in the focus. It refers to the number of quantal fringe per unit of time (amount of time in which a person is involved with a task). It may be, in itself, a spontaneous biological rhythm, or it may be controlled by a central pacemaker. The level of attention is one manifestation of temperament, an inherited characteristic of the organism.

Interactive Activities is where group work is emphasized. Everyone feels that she or he is a part of the group. They all work together in a friendly atmosphere.

Individual Activities refers to students working alone rather than with a group or a team. The person is treated as one person rather than as a

member of a group.

Assumption

The study assumes tha2t there is positive correlation between course grade and actual knowledge students gain.

Delimitations of the Study

The participant sample is students who are enrolled in a Method of Teaching English as a Second Language class at Michigan State University during Fall Term, 1987. This population may be non-representative of all students because they are more aware of classroom variables than another population might be.

The study will not be able to answer questions related to focal attention, arousal level, or vigilance.

Limitation of the Study

(1) The validity of the study will be affected by the honesty and accuracy with which the participants respond.

(2) The findings of the study will be correlational, not causal.

Organization of the Dissertation

The dissertation will be organized as follows:

Chapter I contains the introduction to the problem, statement of the problems, purpose of the study, significance of the study, hypotheses, assumptions, definition of terms, delimitation of the study and limitation of the study.

Chapter II contains a review of the prior research and related literature pertinent to the problem under consideration.

Chapter III presents the design of the study, a description of the population and sample, the instrumentation, and the procedures used for collecting the data.

Chapter IV contains the data analysis and findings of the study. Chapter V contains a review of the dissertation as a whole, its major findings, conclusions, and recommendations for future research.

CHAPTER II

Review of the Related Literature

Three general areas of research are described in this section. The first area covers two points: research in cognitive psychology in which attention is defined either physically or in terms of focal attention, and attention in the classroom. The second area examines external measurement observational studies of attention in which the researchers look at students and judge whether they are paying attention and also reports "the introspective sampling" approach. The third area in this section deals with classroom management/teacher effectiveness in a second language classroom.

Attention in Cognitive Psychology

Titchener (1908) believed that attention was very important and called it the nerve of the whole psychological system. A few years later the Gestalt and Behaviorist movements began and they tried to keep away from the concept of attention. These schools believed that operations that relate response to a stimulus conform to a simple set of rules such as isomorphism or conditioning. The functionalists on the other hand were unvarying in describing behavior rather than in developing theories about it. (Although they had concern with specific elements of attention for example, preparatory set and span of apprehension.) The term "attention" was not used in the vocabulary of scientific psychology. Osgood (1953) covered the entire field of experimental psychology and mentioned the term "attention" only once: in the discussion of a particular theory of discrimination learning.

By the end of 1950s, the situation changed, and the concept of attention became a very important issue. The function of the term

"attention" in post-behavioristic psychology is to provide a label for some of the internal mechanisms that determine the importance of the stimuli. Consequently it is now believed that it is impossible to predict behavior from only stimulus considerations.

The stimulus is a significant element of attention. Usually the organism appears to control the choice of stimuli that will be allowed so as to control behavior. The organism selectively attends to some stimulus, or aspect of stimulation, in preference to another.

There are many variants of selective attention. Treisman (1969) suggests that attention tasks be classified according to what they require the subject to select: stimuli from a particular source, targets of a particular type, a particular attribute of an object, or responses in the particular category.

Gibson and Radan (1979) believe that attention refers to perceiving in relation to the task or goal, internally and externally motivated. It relates perception to action and to a person's motives and needs.

Gibson and Radan (1979) discussed three types of attention: (a) captured or involuntary attention, (b) self-directed attention, and (c) attention directed by other persons.

Captured attention is the attention of the infant which focuses on salient aspects of the environment that demand attention such as: flashing, moving, or brightly colored objects. These objects also attract adult attention. The second type is self-directed attention because an adult usually decides to what task he or she will attend. Self-directed attention is usually related to an ego. The third type of attention is used in classrooms, where students are asked to attend to a task that the teacher believes is important. Hale and Lewis wrote that

attending to the school task may be the result of intrinsic interest, including a combination of the ego and the task.

Hale and Lewis also believe that attention is a search for information that is necessary for performance and referred to attention as a "power," "capacity" and "state."

The variables of attention discussed in Gibson and Radan's (1979) study are (a) the degree of match between information taken from ongoing events and its utility for the task of the perceiver; (b) the nature and specificity of goals, task set, and expectation of the perceiver performer; (c) the alternative means that are available to the strategic quality of choosing an alternative; (d) the extent to which the task of the perceiver is in tune with his/her needs; and (e) the extent to which information, alternative modes of action, and the task can be organized as a single structure.

Piontkowisk and Caffee (1979) indicated that, due to the fact that attention is a mental state of mind, attention should be essential for learning.

McGuiness and Pribram (1975) reviewed the psychophysiological data on attention. He indicated that arousal, activation, and effort are three distinct, interacting systems that operate as control mechanisms:

Arousal was defined as "reaction, a basic physiological response to changes in intensity, timing, or figure-ground relationship of the sensory input.

Activation is a "reaction, a tonic physiological readiness to respond by an activation of the 'go' mechanism" (McGuiness, 1975).

Effort is: "The measure of attention 'paid' to stimuli; the coordinating activity of arousal and activation that produces a change in

a person's information-processing capacity" (McGuiness, 1975).

Posner and Boies (1971) reviewed the psychological research on attention and came up with the following categories of mental activity.

Alertness: The development and maintenance of optimal sensitivity to the environment.

Selectivity: The act of scanning the environment in order to select the most salient dimensions and to focus on these features while excluding others.

"Central Processing": The focal point of thinking during which the selected elements are brought together for identification, comparison, recording, interpretation, or the like.

In summary, this section discussed the history of the term "attention" in cognitive psychology. It discussed several elements of attention such as stimulus and selectivity. Also, three types of attention were discussed: a) captured or involuntary attention, b) self directed attention, and c) attention directed by other persons.

The psychological components of attention were identified by Posner and Boies (1971) as: alertness, selectivity, and central processing capacity. Psychological components were identified by Pribran and McGuiness (1975) as: arousal, activation and effort.

Theories of Attention.

Pillsbury (1973) summarized various theories.

The first and simplest is James Mill's theory. The intensity of the stimulus for the sensation and the strength of the association for the idea are the only conditions for something to come to consciousness and for clearness when it becomes conscious. If an idea is intense or

interesting it will succeed in getting into the mind. In Mill's formulation, attending to the idea and having it are identical.

Pillsbury (1973) indicated that Ribot is the most important representative of the view that attention is fundamentally a motor phenomenon. He enumerated the list of movements and the changes in movement which accompany every act of attention and finally concluded from the frequency of the appearance that movement is the ultimate cause of attention. He divided movements into three classes: effects upon the vasomotor system, respiratory effects, and the changes in the voluntary muscles. Attention consists very largely in the accurate adaptation of the sense organs, in a checking of breathing and of all other movements that can in any way interfere with the perfection of attention and finally, changes in the blood supply which will send a greater amount of blood to those parts of the brain which are in a state of activity. Ribbot believed that attention in many cases was an inhibition of movement rather than cerebral states.

According to Pillsbury (1973) a third theory of attention is that attention is conditioned by feelings: the pleasantness or unpleasantness of the stimulus decides whether it is to be attended to or denied admission to consciousness. Typical representatives of this theory are Bain in England, Horwicz and Stumpt in Germany and Ribot in France.

A fourth group of writers believed that attention is controlled by the will, meaning that it is activity in some form or other. It is undoubtedly implied in the theory that there is an effective force in consciousness which is above the sensations and which acts to control the course of ideas; something that is more positive than any shadowing conscious feeling.

Representatives of this theory are Lipps and Sully (Pillsbury, 1973).

The fifth theory of attention is represented by Kohn. It stresses that attention and consciousness are identical. Attention is involved in all consciousness, and the degree of consciousness, and the degree of attention are the same (Pillsbury, 1973).

As a result of this brief overview of various theories of attention, Pillsbury (1973) concluded that each of the theories has merit, but each is incomplete. Attention is not any one of these things alone, but it is all of them taken together and more. Attention is a state of clearness of some one idea with its resulting analysis or synthesis. Attention as a cause is an expression of everything that a person has known and experienced. In addition, accompanying and coloring the whole are the feelings of interest and effort, accompanied by the movement processes that make known to others the degree of attention. It is not accurate to regard any feeling or sensation of the movement as an explanation of even the simplest attention process.

Pillsbury (1973) roughly divided the condition of attention into two great classes--the subjective and the objective. He indicated that, in a general way the objective condition may be defined as those qualities which belong to the entry sensation alone, regarded in isolation from the environment in which it was received, or in the rough, those characteristics which depend upon the nature of the external world at the time. Those conditions which depend upon impressions received through the senses, retained in some way to be again active at a later time. The most important of the objective conditions is probably the intensity of the sensation. A loud noise, or a brilliant light will force its way into consciousness in spite of all the subjective forces which may

attempt to oppose it. Another factor of importance is the rate of change in the intensity: a sudden change is more effective than a gradual one. The extensity for sight and touch is also very important. A large object is more likely to attract attention than a small one, all things being equal. Change is as important in attracting attention as intensity. A study of the subjective condition offers more difficulties because it is not easy to interpret the result. It is not possible to indicate at once what conditions are present that make a given object attract attention. Then a study of the previous circumstances in the life history of the individual which brings about the result may be useful. The subjective conditions are to be found in the ideas in the mind at the time, one's mood of the moment, one's education, previous social environment, and the heredity of the individual.

Pillsbury (1973) indicated that there are two additional conditions of attention usually regarded as equally important. Interest is one of them. In its simplest form, people attend to an object because it is interesting to them. Students are often interested in anything that is new to them, but, at the same time, is so closely related to things with which they are familiar that they have no difficulty in connecting it with some previous bit knowledge. The closer the connection, the stronger the interest. However, Pillsbury believed that what is interesting is identical to things which must be attended to for subjective reasons. They are the things that demand attention because they are related to previous experience, the social environment compels it, or because of hereditary influences. Interest, then, is dependent not only upon the object, but also upon the nature of the person to whom the object is presented. Interest grows with knowledge. It is not fixed

once and for all, even in the same individual. Interest is also the objective way of looking at the condition of attention. It is merely ascribing to the object processes and qualities that have their real origin in the person's self. In conclusion, interest is an important element that influences attention but it is not a must, people can pay attention to certain objects even if they are not interested in it. For example, loud noise, brightly colored objects, etc., attract peoples attention.

Pillsbury (1973) also stated that attention is the result of subjective activity, and that attention is effective when the self acts to produce a change in the mental field—in the clearness or intensity of the ideas. Mental activity is really bodily activity, a mass of sensations that comes from the contractions resulting from motor interventions which accompany attention.

We have attempted to summarize the psychological theories of attention. One general characteristic of all those mentioned is the raising of some part of attention process to the rank of a general condition or cause. Attention has been said to be an intense sensation that is the result of interest, is due to feeling, is caused by movements of various kinds, and is produced by direct action of the will.

Methods of Measuring Attention.

Meldman (1970) stated that attention can be measured by three types of tests. One type of test would measure the adequacy of attention directly in terms of the highest possible level of attention. A second type makes some secondary changes in the course of the operation stand as a measure of attention. The third general group would measure the breaking strain, or the amount of stimulus that is necessary to distract

attention. Meldman (1970) believed that no one of the methods is altogether satisfactory, and no two measures have the same capacity. By taking them together, they can aid in giving a knowledge of the capacity of an individual.

Attention in the Classroom

Silberman (1970) believed that the typical classroom environment is judged to be repetitious and dull, and this boring atmosphere causes students to become bored or turn away their attention. Therefore, teachers need to adopt a certain level of activity and vitality that can maintain the students' level of alertness. Keele (1973) suggested that moderate levels of music or other kinds of background noise help students maintain their alertness especially if they are sleepy. Berlyne (1960) believed that teacher and students can stay alert in the classroom situation. He believed that variety is an important element in the classroom. Also, novelty--totally new elements or familiar events in unexpected context--would have a strong affect on arousal level. Rayans (1960) suggested that creative teaching includes "human interest", and stated the teacher should approach the lecture with a sense of humor, posing the problem in a new way, confronting students with unexpected questions, changing the work on the wall, and introducing a variety into the schedule. Brophy and Good (1974) suggested that group activity is important to maintain alertness. Teachers should arrange seat assignments to help students who have trouble staying alert by placing them in the action zone. Piontowski and Calfee (undated) believed that discussion is a very important element in arousing interest in a topic and keeping students alert.

Selectivity.

Piontkowski and Calfee (undated) believed that selective attention in learning includes three elements: (a) "Picking out a designated object or event from a large set," (b) "Paying special notice to certain features of this stimulus" and (c) "Disregarding other features of the same stimulus." They also believed that selective attention is influenced by external and internal sources of information. They believed that two sources of external influence on selectivity need to be controlled. The first one is the specific elements of the stimuli relevant to the learning task, the second is the general activity level in the learning situation. This can be done through: (a) emphasizing critical feature of stimulus, (b) eliminating irrelevant feature, and (c) putting an old stimulus into a new context.

Internal Influences on Selectivity

Selective attention requires a decision about which information in the stimulus to take and which to ignore. What the person thinks about when confronted with new information depends on the situation and his/her background. An immediate memory search tells how the stimulus resembles stored knowledge, and determines what is meaninful in the situation. Broadbent (1971) described two internal cognitive processes in selective attention. The first is filtering and the second is pigeon-holing. According to Broadbent, filtering is the selection of the stimulus feature on the basis of possible interpretation, while pigeonholding is the subsequent process that matches the filtered input with information stored in the "pigeonholes" of the long term memory.

Piontkowski and Calfee (undated) believed that teachers need to stay sensitive to the aspect of the situation that the students consider

personally relevant. They believed that the ability to select relevant features depends on a person's information-processing capacity. In the case of presenting a new and complex situation to the students, the teacher can pinpoint the significant features that influence the students' mental set.

Monitoring and Fostering Attention in the Classroom.

Piontkowski and Calfee believed that attention is very important to learning. If a student is not paying attention to instructions, he or she will not profit from them. To check if a student is paying attention, they suggested two simple methods: observe where the student's eyes are directed, and ask the student immediately after the event what is on his or her mind. They believed that a combination of these two methods provides the teacher with specific information about the precise difficulties a student has in performing a task.

Cobb and Hops (1975) indicated that if the student is not doing the following: attending to the teacher, following teacher instructions, and volunteering to answer academic questions, the student is a poor learner. They suggest "behavior modification" in which the teacher asks him or herself several questions: (a) How would you like your students to behave?, (b) What behavior would you like to stop?, (c) What reinforcers are available to you? In other words, what can you offer the student as a reward?, and (d) How can you rearrange conditions that reinforce desired behaviors rather than unwanted ones?

Piontkowski and Calfee (undated) believed that behavior modification succeeded quickly when the classroom regime is manifestly disrupted.

The following reported studies are a review of past research conducted on the relationship between attention to the task and achieve-

ment.

Hudgins (1967) studied the characteristics of pupil attention and how it related to any meaningful dimensions of classroom thinking. In the study Hudgins reported past research on procedures for measurement of attention. Morrison (1926) developed a straightforward technique for attention measurement. The technique was simple and involved counting the number of students judged to be paying attention each minute of the class period, and express these judgements as an index of the level of control exercised by the teacher during the class. In this study, Morrison found out that teachers had control over students who were paying attention but did not have control over students who were not paying attention. Morrison perceived the teacher control to be indicative of students' readiness to learn.

Another study conducted by Shannon (undated) examined the reliability (1936) and validity (1942) of attention data. These studies indicate that inter-observer reliability for scores using attention measures were higher than three types of measures used to investigate the efficiency of the classroom. Bloom (1953, 1954) developed the method of "stimulated recall" for the collection of data about students' thinking processes in the classroom. A tape recorder was used to record the class and interview students about their thoughts at selected times during the class. Bloom suggested that his index of relevant thinking was correlated with comprehensive grade averages.

Hudgins'(1967) examined junior high school English classes located in a single school, which was part of a large suburban school district. The nine classes were distributed into three grade levels (7,8,9) and three academic achievement levels (1,2,3,), where high achievers were

enrolled in Level 1 Classes. A simple observation technique was used. The observer had the names of all pupils in a given class listed according to seating arrangement in the classroom, and the observer located himself in a position where he could watch students without being observed himself. The students were observed in turn and the observer judged their attentive or inattentive behavior and recorded it opposite the student's name. Each time the observer recorded all the students' attentive or inattentive behavior, he recorded the time elapsed, the dominant activity of the teacher, the instructional material in use, and the organization of the group. To collect data about the contents of pupil thought during the class, a sheet of paper was coded to allow investigators to identify the responses of students without writing their names down. After ten minutes of the lesson, the students were requested to respond to the question, What were you thinking during the few minutes just before the lesson stopped? Two minutes were allowed for responses to be completed. At the same time that the students were writing down their thoughts, the teacher was engaged in doing two ratings on a five-point selection scale: putting down his judgement of the group level of attention for the time between stops and for approximately two minutes just before the stop. At the end of the week (the time period for the study), the teacher was given two copies of the class list and was asked to rate the attention of each pupil on a five-point scale from low to high. One time for the week of the observational study and a second time for the whole semester.

The findings of the study indicated a significant correlation for each class between the systematic observation of student attention and the teacher's judgement of it for the week under investigation. Also,

the study suggested the general inability of observers or teachers to predict the relevance of pupil thinking from observational characteristics of attention. The observers' scores for attention relate more closely to negative involvement than they do to subject matter relevance. The relationships for five classes were significant. Social involvement and teacher ratings of attention were significantly related for the same three classes in which subject matter relevance was significantly related to attention. In six of the nine classes, a significant relationship occurred between social involvement and attention as judged by observers or by the teachers.

Lahaderne (1968) investigated the relationship between students' attentiveness in the class and their attitude toward school, as well as their ability and achievement. Four sixth grade classrooms were observed for over a three-month period. Questionnaires assessing student attitude were administered to the students. Intelligence Quotient and achievement test scores were obtained and observations were made to record the state of students' attention.

The instrumentation Lahederne used was the Jackson Hudgins' Observation Schedule (1965). A student opinion "Poll II Questionnaire" was used to measure students' attitude toward school. This contained forty-seven multiple choice items, and the questions focused on four areas of school life: the curriculum, the teacher, the peers and the school.

The Michigan Student Questionnaire (Flanders, 1965) was used to measure students' attitudes toward their present teacher and schoolwork. It included thirty-seven descriptive statements, each followed by four replies: strongly disagree, disagree, agree, and strongly agree.

The findings of the study indicated an overall lack of relation between student attitudes and level of attention. However attention was found to be positively associated with achievement and higher IQ scores. A curvilinear relation was found between level of instruction and attention (as the level of instruction increased, attention also might increase to an optimal point and then decrease beyond that point). So inattentive behavior was associated with instructional variables and not with students' ability toward school.

Hawn (1973) examined the effects of active and quiet activities upon subsequent attending of preschool children. Attending in the group subsequent to active play was compared to attending group subsequent to quiet activities. Hawn emphasized the importance of quiet activities before another quiet activity, if the teacher wants to increase students' attending probability. In this study, the active play period was outside where children had the opportunity to use a variety of playground equipment. The quiet activity was held inside and this included performing conceptual tasks, looking at books, or playing a game at the table. The subjects of the study ranged in age from three to four years. Hawn defined attending as:

> "bodily position appropriate to and directed toward the designated stimuli; appropriate silence; appropriate response to the teacher's instructions; no display of distruptive behavior; fully seated in an upright position within three feet of the perimeter of the group" (p. 1).

In this study, Hawn indicated that many researchers studied techniques for remediating undesirable classroom behavior, but very few attempted to study the effects of activities on children's behavior.

Data was taken during the beginning of a story-reading session. The data was recorded by scanning the four subjects every fifteen seconds, starting with the first one seated to the right of the teacher who was reading the story. The other three subjects were consecutively observed according to their position in the semi-circle. The independent variables were teacher attention, which took the form of verbal praise or correction, and general behavior. The dependent variable was the subjects' attending behavior during group activity while a story was being read.

The results indicated that when the preceding activity was in a small group, the mean attending for the group was 56% and 38.77%, respectively; while the mean of attending increased to 72% and 74% respectively when the preceding activity was outside time. The highest percentage of attending was when subjects were active outside prior to the large group, and when the quiet small group activity preceded the large group. The result also indicated teacher attention was not responsible for effecting changes in the attending behavior of the subjects and that is due to the fact that teacher attention was constant during every condition.

Harper (1976) studied the importance of attending behavior in learning to read. He emphasized the importance of appropriate attending behavior for the successful attainment of reading skills. Three slow readers (6 years old) spent between 30% and 40% of their time non-attending, and two slow readers spent between 40 and 50 percent of their time non-attending.

Harper (1976), reported that Samuels and Tunhure (undated) found that first grade attention and recognition were positively correlated.

Harper indicated a positive relationship between reading and attending behavior after children spent one year at school. Good readers were able to concentrate most of their processing capacity on the extraction of meaning.

Harper (1976) also indicated that little work has been forthcoming in studying sex-related attentional differences in reading situations. Samuels and Turnure reported girls to be significantly superior to boys in attentiveness to reading task. They believed that for the majority of children, simple reinforcing incentives can increase appropriate attending significantly. Learning to read was a function of the child's attentional repertoire. In addition, according to Lahaderne (1968) the most important factor in the child's attending ability is the appropriate attending, not attitudinal factors. Attention is more important than intelligence. Lahaderne also mentioned that Lahaderne found a positive correlation between intelligence and both attention and reading attainment. Lahaderne's study showed that even after the influence of intelligence had been taken into consideration, a significant correlation between reading and attention remained.

In conclusion, Harper stated that attention is a very important, complex factor in any learning environment. In the learning of reading both visual and auditory attending are usually very much involved.

Rosenshine (1977) reviewed various studies done on basic skills instruction in the primary grades and student achievement gain, since 1973. The focus was on content covered, student attention, direct instruction, and proportion of student time spent in seatwork (rather than teacher behavior). The variables covered were: teacher centered instruction, student choice of activity, group work, classroom

management, independent study, verbal interaction, and the classroom environment.

Rosenshine (1977) indicated that over the last twenty years, only a small group of investigators have attempted to modify teachers' behaviors which are related to student achievement. The studies published between 1973-77 concentrated more on productive strategies. The major changes in thinking according to Rosenshine were as follows: (a) There was more focus on student variables like content covered and student attention to relevant academic activities, (b) "Direct instruction" was emphasized, and (c) Students spent more time in seatwork activities and discussion. The role of the teacher was emphasized.

Rosenshine (1977) believed that researchers had focused intensely on student variables. This emphasis was influenced by Carroll (1963) and Bloom (1976). Benliner et al. (1976), used the concept 'academic engaged time" which combined student attention and content covered. Carroll (1963); Pidgeon (1970); Husen (1967); Comber and Keeve (1973); Charng and Raths (1971); Armento (1977); Rosenshine (1971); Shutes (1969); Bees (1968); Canten (1969); Brown (1969); Barr (1973); and McDonald (1975), studied content covered ("opportunity to learn") which included: inspecting the content of the textbooks used, asking teachers to indicate the percent of students who had the opportunity to learn each item of the test, counting the number of pages of the common textbook covered during the semester, coding the content in a short presentation which was relevant to the exam questions, counting the number of words which the teacher had attempted to teach, counting the results of different curriculum programs in general and on the curriculum-related post-tests. All of these previous studies (except Brown's) emphasized the significant

relationship between content covered and achievement gain.

Concerning student attention or engagement, Rosenshine (1977) believed that attention was very necessary for student learning. Bloom (1976) reviewed fifteen studies on student attention and concluded that there was a significant correlation between student attention and student gain. Rosenshine believed that students must attend to what they are taught in order for learning to occur.

Rosenshine (1977) also discussed "direct instruction." This term refers to those activities which are directly related to making progress in the skills chosen and refers to a high level of student engagement within teacher-directed, sequenced, and structured material. It focuses on academic matters where goals are clear to students and refers to variables which promote content covered and academic managed time.

Rosenshine (1977) summarized the topics that reflect the organization and management of classroom as the role of the teacher, seatwork, student choice, grouping, management and atmosphere. Soar (1970) indicated that successful teachers are usually strong leaders who approach subject matter in a direct way, organize learning around questions students pose. Successful teachers occupied the center of attention. On the other hand, less successful teachers made students the center of the attention and organized learning around the students' problems. Soar also believed that classrooms which were organized in a way that allowed students free choice of activities were usually associated with lessened achievement gain.

Rosenshine (1977) believed that when students have many choices of activities and they are not in groups being supervised by a teacher, they are susceptible to distraction. To support this belief, Doyle (1975)

stated that preschool children were paying attention to the tasks when the material was organized before hand and when they were sitting in their seat. But when students had to leave their seat to obtain material, they were highly distracted.

To examine the effect of grouping students for learning, Rosenshine (1977) indicated that Stallings and Kaskowitz found that working with only one or two students was negatively related to class achievement gain while working with a small group (three to seven students) or with a large group was consistently positively related to achievement gain. Soar (1973) stated that when students work in groups under the teacher's supervision, the correlation with achievement was positively significant.

Rosenshine (1977) discussed the management of the classroom. He indicated that this issue is very important because classes with poor management usually have low academic engaged time. Tikunoff, Benliner and Rist (1975) studied more effective and less effective classrooms in second and fifth grade reading on mathematics. They indicated that effective teachers give enough time to an activity without considering the time period spent on that activity. Similarly, time allocated to a subject was continuous. There was no shifting from instruction to behavior management to announcement to large group instruction.

McDowell (1980) focused on the relationships between teacher immediacy variables, teaching effectiveness, and the attentive variables. Also he focused on the relationship between (a) teacher immediacy and interpersonal solidarity variables and (b) teaching effectiveness. In addition, the study investigated the differences between educational level group and final grade groups in rating teacher immediacy, teaching effectiveness, and student attentiveness variables.

The results of the study reveal significant relationships among, affect, behavioral, immediacy, homophity and attentiveness variables, and a low correlation between these variables and the cognitive learning variables. The study also showed that immediacy variables and solidarity variables are important in developing students' attitudes toward communication practices and participation in them. It showed that students who rate their teachers high on immediacy variables and solidarity are more nonverbally attentive toward the teacher. McDowell (1980) pinpointed that immediacy variables are related to affect, behavioral, and cognitive learning at the junior high level. Immediacy variables, on the other hand, are related to behavioral commitment, homophity, and attentiveness variables at the senior high and composile level. In this study, McDowell indicated that Heath and Neilson (1974) completed a comprehensive review of the past research on the relationship between teacher behavior and students' achievement. The review indicated that previous researchers were not able to develop a consistent operational definition of what constitutes good teaching. Also they failed to develop on empirical basis of the perceptions of teacher-training objectives. Also, these researchers failed to develop rigorous research designs for developing a clean definition of learning outcomes. Therefore, Heath and Neilson concluded that there has been a lack of replication of previous research studies. Travers et al (1960) encouraged the investigation of the affective, behavioral and cognitive learning domain as a method of understanding, learning and evaluation. Bloom (1968) defined learning as (a) an "affect domain," (b) a "behavioral domain," and (c) a "cognitive domain." Anderson (1979) described a good teacher as one who can produce positive outcomes in

affective behavioral, and cognitive domains (all of which are labeled as teaching effectiveness variables). Anderson believed that positive student affect is very necessary to enhance the learning process. She also believed that positive affect evolved from positive interpersonal relationships. She designed a study to discover the relationship between nonverbal, immediacy variables and their relationship with interpersonal solidarity measures.

Anderson (1981) suggested four categories of students' short-term outcomes to be observed by teachers during instruction. These categories are attention, initiative, success, and understanding how and why the classroom works. Anderson reviewed the research for each category and found out that it is important for the teacher to pay attention to student responses to instruction and that can be done through frequent contact with the students. The methodology of the teacher is seen in the teaching of specific work skills and choosing a suitable classroom environment to help students learn how to respond to instruction.

Anderson (1981) indicated that the past research showed that time-on-task was very important and was associated with achievement gains. She indicated that some students show more attention, involvement, and initiative than others, and also that in different situations some students would be more successful than others. Anderson described some differences in student responses to instruction. She indicated that students who exhibited more attention, involvement and initiative responses were more successful than others in some learning situations. She believed that learning occurs only when a student has produced some kind of active response to instruction, such as paying attention, practicing a skill or using new information to solve a

problem. According to Anderson, teachers can not change the individual students' differences that affect students' responses, but they can influence immediate student responses by looking at the students' responses as signals that teachers can use to continue instruction or modify it. She believed that when the instructors elicit active participation in the learning activity, attention would usually be higher. McKenzie and Henry (1979) found that the rates of attention during a group lesson were higher than the attention rates in large groups activities. Anderson also believed that teachers' strategies for selecting students during discussion influences attentiveness and active participation. She believed that when only volunteers were called upon, other students might tune out, but if all students' contributions were regularly required, attentiveness might be greater. "Signal system" is also discussed by Anderson. Kounin and Doyle (1975); Kounin and Gump (1974); Kounin and Sherman (1975) refer to it as "arrangements of setting or the procedure within the task that have the power to sustain participation" (p. 9). They found out that students pay attention more in lessons which emphasized continuity and insulation, and deemphasized intrusiveness.

All the research reviewed by Anderson (1981) suggested ways that help teachers to attract students' attention, such as Kounin (1970); Emmer (1980); Emmer, Everson & Anderson (1980); Good and Brophy (1978). But at the same time, all of these researchers failed to demonstrate that active learning only takes place when the level of attention is high.

Peterson, Swing, Braverman, and Buss (1982) described students' cognitive process during classroom instruction in mathematics. They related students' reports of cognitive processes to their achievement.

Using the stimulated recall technique developed by Bloom (1954), they interviewed fifth- and sixth-grade students. The students were shown a videotape of a lesson they had just participated in. The students' responses showed that cognitive processes were related to ability and achievement. That found that, compared with lower ability students, higher ability students reported (a) more attending to the lesson, (b) more understanding of the lesson, (c) engaging in varieties of cognitive processes more frequently, (d) engaging in more strategies that involved problem-solving steps, and (e) more often using the specific strategy of relating cognitive processes of the new information to be learned to prior knowledge. The findings of the study indicated that cognitive process is related to ability and student achievement.

Peterson et al. (1982) indicated that observers' judgement of students' off task behavior during class were not highly related to student achievement, while students' reports of attending were highly related to their achievement.

Graden, Thunlow and Ysseldyke (1982) reviewed the research on engaged time and its relationship to learning. The focus of their study was to find out how teachers' perceptions and students' characteristics affect time in classrooms. Also they wanted to find out what other research said about the relationship of the concept of time and achievement. They believed that very few studies that reviewed student behavior (attention to the task) across the group, showed consistent findings. These studies indicated that in all cases higher ranked students were found to stay on task a greater percentage of the time.

Grader, Thurlow and Ysseldyke (1982) discussed allocation time. It refers to the "measure of opportunity to study; it is that time that the

student is exposed to the academic instruction and classroom activities." Two kinds of methodologies for assessing allocated time were suggested. One method is for the teacher to report the amount of time allocated to various classroom instructional areas; the other method is a direct observation of the classroom.

Studies on allocated time were conducted by the Beginning Teacher Evaluation Study (BTES) at Far West Laboratories. The findings indicated that allocated time is positively related to student learning. Therefore, the differences in the length of time has an important consequence in student achievement.

Guthrine, Manluza, and Seifert (1976); Kresling (1977); Jacobson (1980) reported a significant relationship between achievement and time allocated to math instruction. Two other studies conducted by Sever (1966), and Welch and Bridgham (1968) indicated that there was no relationship between high school teachers' report of time allocated to the instruction and students' achievement gains from the instruction. Benliner (1976), Karweit and Slavin (1981), and Frederick and Waberge (1980) believed that the strongest correlation between achievement and allocated time resulted from the use of content-relevant achievement measures.

Good and Beckerman (1978) indicated that high achieving students usually spend more time on task than low achievers. Another study by Soli and Devine (1976) indicated that low achieving students spend less time on task than high achievers. They believed that the absence of inappropriate behavior was the best indication of learning for low achievers, while for high achievers attending was predictive.

Studies using direct observation of allocated time indicated

different results. Cooley and Leinhardt (1980) and Leinhardt (1977) suggested that there was a significant correlation between time for class instruction and class achievement.

Graden, Thurlow and Ysseldyke (1982) discussed student engaged time (attention to the task) and suggested that the time a student actually spent on learning might differ from time available for instruction. Hall et al. (undated) indicated that although 75% of class time was allocated to instruction, only 25% of class time involved student response to academic activities.

Studies of engaged time rely on direct observation in order to determine whether or not a student is responsive. Hall, Greenwood, et al. (1981); and Benliner et al. (1979) indicated that students spent most of their time in passive response (listening, getting materials ready, and waiting for instruction), and only a small portion of time was spent in active academic responding. Stallings (1980) indicated that there was a significant correlation between interactive, on-task behavior and learning. She reported that interactive, on-task behavior (reading aloud and discussing) correlated positively to achievement, while non-interactive on-task behaviors were negatively correlated to achievement. BTES studies focused on individual students during reading and math instruction. The overall results of these studies showed a significant relationship between engaged time and achievement. Stalling (1975) indicated that time spent in academic activities such as reading and mathematics was positively related to student achievement and time spent engaged in activities such as art, music, physical education is negatively correlated to achievement in academics.

Cooley and Leindrt (1980); Frederick, Easton, Munihead, and

Vanderwicken (1979); and Frederick (1977) indicated that the time spent learning (attending to the task) was a strong predictor of achievement. Anderson (1975); Cabb (1972); Gover and Richards (1979); Lajaderne (1968); McKinney, Mason, Peterson, and Clifford (1975); Samuels and Turnure (1974); and Stallings (1968) suggested that attention to the task was a significant predictor of achievement.

Felesenthal and Kiresch (1978) failed to find a significant relationship between engaged time and achievement when pretest scores were included in the analyses. But observations of engaged time conducted by them were not as detailed or precise as those studies that found a significant correlation.

Peterson, Swing, Stark and Wass (1984) addressed the following research questions: (a) What cognitive processes do students report attending to during a mathematics class?, (b) What affective thoughts do students claim to have during that class?, (c) How are students' aptitudes related to their reported cognition and affective thoughts during mathematics instruction?, and (d) Do these students reports provide evidence of a correlation between cognitive process, affective thoughts, and later achievement and attitudes?

The subjects chosen for the study were twenty-nine white and nine minority students from two fifth-grade classes in an urban elementary school. The participants completed several aptitude tests and questionnaires, the material was taught in nine one-hour sessions, and practice problems were developed for the students to work on during seatwork time. Student behavior was coded during each class using the observation system developed by Peterson and Fanicki (1979). The observer focused on student behavior as a measure of students' overt

attention or lack of attention. Stimulated recall interviews were also conducted after the lesson and the seatwork. An approximately equal number of students of high, medium and low ability were interviewed each day. Students' responses to the stimulated recall interviews were audio taped and transcribed.

The study indicated that student achievement and student ability were significantly related to students' reports of their thoughts during classroom instruction, including their reports of attending to the task, understanding the task and engaging in various specific cognitive processes. According to the classroom observation, student engagement in mathematics was not related to student achievement. The researchers believed that students' reports of their cognitive processes during classroom instruction might be more reliable and valid indicators of students' classroom learning than observers' judgements of student attention. The important mediating processes might involve more than simply attending to the task, the actual cognitive processes involved in processing the mathematics information presented during classroom instruction might be more important than the amount of time spent attending to the task.

The results of the study also indicated the importance of students' reported affective thoughts as mediators between student achievement and instructional stimuli. Also the students' reports of thoughts about mathematical concepts and operations need to be considered for investigating the cognitive processes of the students while learning from classroom instruction.

Gettinger (1984) investigated the effect of time spent in learning and time needed for learning on reading and spelling achievement. The

subjects were fourth- and fifth-grade students. For each grade level, two forms for reading and spelling were used as criteria for tests. To measure learning, standardized achievement test performance, teacher-assigned grades from the most recent grading period in spelling and reading, and criterion tests covering the material in each of the experimental learning tasks were used. The procedure used was the same for both grades and also for reading and spelling tasks.

The findings indicated that the effect of the amount of time spent in learning on achievement was mediated by time needed for learning. The study suggested that there were individual differences in how much exposure or instruction was needed for mastery, therefore the effect of additional instructional time may not be the same.

Gettinger (1982) suggested that engaged time and allocated time should enable future researchers to clarify when and how additional time spent could lead to better learning outcomes. He summarized the results of past research that dealt with the subject. He found that Dynstra (1967) and Gales (1961) reported that in naturalistic classroom settings, reading achievement of girls is better than boys. Jeffrey and Samuels (1967) and Peterson (1972) indicated that attentional behavior of the subject was easily controlled, and sex differences in reading-analogous paired-associate learning were not found. McNeil (1964) indicated that the performance of boys is superior to that of girls on a reading-type task under certain classroom conditions. Baldwin, Johnson, and Wilby (1970) indicated that success in the subject matter is usually attributed to teacher methodology, while academic failure is explained by several variables, including lack of intelligence, readiness, motivation, and attention. Lahaderne (1968) indicated that school achievement at

grade six was related to attention. Cobb (1972) reported the same findings for fourth-grade pupils. Samuels and Turnure believed that lack of success may lead to inattentiveness rather than the reverse. They indicated that reading readiness scores for boys are almost the same for girls. However, attention is more significant in favor of girls, and girls have higher recognition scores. They also indicated that overt task-relevant orienting behavior is related to scholastic achievement.

Stallings (1985) summarized a number of previous studies that emphasized time students spend on specified tasks and the relationship of that time with achievement scores. Anderson (1976), Benlinen (1979), and Brophy (1979) indicated that students who remain on task during instruction have higher achievement than those who are off task. Results from several studies (Lieberman, 1980; Rullen, et al., 1979; Brophy, 1979; Marshall, 1981; Peterson, 1979; and Rosenshine, 1979) suggested that the relationship is between manner in which time in school is spent and student achievement. Their findings indicate that the amount of time spent actively engaged in learning is correlated to students' achievement; on the other hand, low achievement was correlated to time spent off task. The amount of time the teacher spent on instruction related interaction is positively correlated with student achievement.

Stallings (1985) defined engaged time as "the amount of time students spend attending or trying to accomplish the task" (p.2). Stallings also summarized others investigators' definitions of "on task" as: "On task activities include listening when instruction of the assignment is given, taking part in discussion, responding to teacher, responding to each other and doing the assigned work" (p.2).

Stallings reported that studies that focused on student engaged time

had different methodology. Some used ancedental records, checklists, rating scales, or time samples. Some studies focused on a random sample of children in the classroom, while some recorded every child's behavior. Regardless of what methodology was used, all of these studies depended on some form of direct observation and the findings are similar.

Stallings (1985) indicated that Karwait (1983), Hunt and Ranhawa (1983), and Zegar (1983) believed that students' attention rates are not the same in any of the instructional sessions of the school day. The time of the day, kind of activity, instructional method, classroom climate, mode of instruction, and the characteristics of both teachers and students affects the rate of attention. Piontkowski and Calfee (1979) indicated that teachers can help students to increase their attention and stay involved during classroom instruction.

Stallings (1985) studied engaged rate and its developmental attention span. This longitudinal study compared the engaged rate of children in preschool through fourth-grade and made assessments of attention span and how it relates to the child's rate of achievement. They examined such behavior as chatting, disrupting, personal modes, wailing, sleeping, and being uninvolved. To relate students' engaged rate and students' achievement for the same children, over the several years of the project, the guidelines established by the National Institute of Education were followed. Analysis of subsamples of children's engaged rates and achievement scores were also required. A specific system was formed to record each child's engaged rate and enter it into the data base with the child identification number in order to conduct the following level of analyses: limited English speaking, high achievers and low achievers. The observer scanned the room every five

minutes during fifty-minute reading and math classes and recorded the tasks of the child on the checklist of the childrens' names. The observer also recorded a code for each activity used. The absence of entry of off-task behaviors means the child was engaged in appropriate behavior. Achievement tests wer given to students by each teacher in May of each year. Percentile scores were recorded for each student from the first to fourth grades. Percentile scores were transformed to a normal curve for use in analysis.

The results of the study indicated that in these grades students can attend to academic tasks at specific rates. Students engaged rate scored high on the reading achievement test and this increased from first to fourth grades. Stallings (1985) believed that when students are off task, they might selectively pay attention. Therefore, attention should be considered in planning lessons and activities at any level. The study also indicated that if preschool children are likely to stay involved in a large group activity for eight to ten minutes, then the teacher should not plan a large group activity to be longer.

To summarize the literature showed that teachers need to adopt a certain level of activity and vitality that can maintain the students' level of classroom. Variety of activity, human interest, and sense of humor were suggested as different variables that influence students attention in the classroom.

The second category of the literature review discusses the external measurement observational studies of attention and the introspective, thought sampling approach.

Observational Studies.

Krupski (1985) conducted a study to examine behaviors reflecting

attention among learning handicapped and normal youngsters while they worked on tasks that had varied cognitive demand. Children were observed while they worked on three kinds of classroom tasks. These categories of task type were established "a priori" through extensive observation of the classrooms that ultimately served as study sites.

The observer sat in the classroom and recorded whether an individual child was on-task or off-task on alternate seven second intervals for a 4.9 minute period (twenty-one 7-second intervals of observation alternated with twenty-one 7-second intervals during which observations made in the preceding 7-second interval were recorded).

On-task behavior was recorded if the child exhibited physical orientation toward the task, eye contact with the task, or meaningful manipulation of task materials. Off-task behavior was recorded if the child looked away from the task, talked to other persons about matters clearly unrelated to the task at hand, or was out of his seat. Data was collected over a 2-month period.

Learning handicapped youngsters varied in their on-task behavior as a function of task demand: they spent the least time on-task when cognitive demands were greatest and most time on-task when few cognitive demands were made.

Another study by Samuels and Miller (1985) examined attention in subjects in the laboratory and the same subjects in a classroom, across a variety of tasks and contexts. The aim was to find out if there were differences in level of attention between learning disabled and normal children in classroom and laboratory tasks.

Classroom data-collection involved a 10-second recording procedure. One child at a time was observed for five seconds and the observed

behavior was recorded during the next five seconds. Cassette tape loops were prerecorded with the message "observe" and "record" alternating at 5-second intervals.

The behavior categories which were coded were: attending task (-) or waiting (W), non-attending fine motor (FM), gross motor (GM), daydreaming (D), orienting to others (O) and verbal noise (V).

Findings indicated no difference between learning disabled students and normal students on the tasks. Differences in task behavior between the groups were not found either for academic on art topics or for ability to sustain attention. A significant difference was found in favor of special over regular classes, small over large group, and teacher-directed over independent activities.

Forness and Kavale (1985) conducted a study on the effect of class size on the attention, communication, and disruption of mildly mentally retarded children. Behavior was recorded on each child in specific categories of classroom functioning using an observation system described in detail in Forness (1983).

Behavior was recorded in four predetermined categories: (a) communication-task oriented verbal or gestural response (pupil asks or answers questions); (b) attend: eye contact with teacher, task material, or peer who is reciting; (c) not alert eye contact not directed to teacher, task materials, or pupil who is reciting; and (d) disruptive behavior incompatible with task activities (e.g., talks to another pupil when not so permitted, etc.).

A time sampling technique was used to record the behavior of all children in each classroom. The procedure involved observing and recording the behavior of each child in turn during six-second

intervals. This was done in round until a minimum of ten intervals of each child's behavior had been recorded at six-second intervals. An observer continued recording in an assigned classroom until data in that particular classroom had been collected for a minimum of four days.

The study indicated that attending behavior may be somewhat lower in medium-sized classrooms than in smaller classrooms or in larger classrooms as well. Some variation may be expected in attending behavior, depending on the situation. But overall, large classrooms tend to be associated with higher task attention. Since these same large classrooms do not tend to be associated with similarly high levels of positive verbalization or gestures, one might speculate that there is less opportunity in large classrooms for interactive communication and somewhat more emphasis on activities such as passive listening, individual seatwork, or some other form of instruction considered more typical of regular classrooms (Goodlad, 1983).

Another study using an alternative approach for improving classroom attentiveness has been described by Keogh and Marolis (1976). They suggest that poor performance in a dull, repetitive vigilance task (or classroom assignment) may reflect an unwillingness rather than an inability to sustain attention.

Anderson et al. (1977) developed a technique based on data indicating that feedback regarding false alarms improved vigilance performance in hyperactive children. Ozolins (1975) and Mack (1976) tried to teach hyperactive children to pay attention by providing them with a feedback information regarding non-attending behavior during daily, 30-minute sessions. The experimenter flashed a light in a box mounted on the child's desk whenever the following behavior occurred:

moving out of chairs, talking aloud, taking eyes off work, or doodling on the worksheet or the desk. During the 3-week training period, the hyperactive child's non-attending time decreased significantly with no substantial loss in accuracy.

Classroom observation is a technique which is becominging very popular in research studies and in education. Several research studies that used classroom observation to record students' behavior were summarized. For the most part, the observation procedure involved a sequence in which the researcher looked at a student, observed his/her behavior for a brief glance, placed a tally mark on the observation sheet beside that child's name, located the next child on the sheet and repeated the sequence.

Introspective Studies--"Thought Sampling"

A second on-the-spot method for determining thought content is thought sampling in which the experimenter stops people in the middle of whatever they happen to be doing and requests narrative descriptions of what has been going on in their consciousness just before interruption.

Thought sampling has the additional virtue of being a highly flexible procedure and relatively unobtrusive. It is actually a specialized application of a time-sampling procedure which was described in industrial settings to study patterns of work as early as 1935 (Tippell, 1935). Asevinsky and Kleitman (1953) initiated an enormous outpouring of research using EEG-contingent, non-random, dream-sampling. Lorents (1971) used thought sampling to study the working patterns of university business school faculty. Csikszentmihalyi, Larson & Prescott (1977) used thought sampling to study "ecological" patterns of activity and mood in normal everyday life.

Cohen (1983) conducted a study in a second language classroom in which each session was interrupted for one or two moments to allow students to inspect their mental states and then write down what they found. This self-observational introspection was intended to reflect inner processes. The basic assumption of this approach is that learners can verbalize the learning process. The self-observational thought of learners may be beneficial introspectively or retrospectively.

The results of Cohen's study indicated that only fifty percent of the students were attending to the content of the lesson at the moment the class was stopped. The results also indicated that when students were attending, they might have been making a general observation, assessing their general grasp of what was being said, or grappling with a specific problem. When students were tuning out, they might have been evaluating teachers, evaluating another student, or thinking about other academic issues or social issues.

Klinger (1987) described methods of investigation including thought sampling, thinking aloud, and questionnaire methods. The paper discussed the question, "What do people think about and when they do think about it?" This question was answered from three perspectives. The different forms of thought, the relation of thought content to situations and motivational states, and specific categories of content. The most common forms of thought are focused on the immediate situation, are accompanied by interior monologs of at least a few words, are predominantly visual, and are directed, but up to a third of thought samples prove exceptions to each generalization and about a quarter contain at least traces of dream-like mentation. Thought content (along with attention, recall, and dream content) reflect the thinker's current concerns, defined as unmet

goals. Thoughts are triggered by cues associated with current concerns. The effect of concern-related cues to cognitive activity is probably mediated by the cues' emotional arousal value and, at early processing levels, is probably automatic. Over a quarter of thought sampling focused on other people, but explicitly sexual and violent content in each accounted for about one percent of the total.

Pope and Singer (1978) summarized special requirements for methods currently in use that observe inner experience, the five dimensions in the flow of thought, some characteristics of every day nominal thinking, and the combination of motivational, and stimulus factors that govern changes in the content of thought from one moment to the next. For most of these issues, they provided information from thought-sampling investigations of moment-to-moment inner experience.

They also considered evidence on relationships among the various attributes of thought and the individual differences in thought qualities and concluded that people who reported their imagery to be more detailed also reported it to be more visual. There were interesting relationships among the modalities of the participant's imagery, the modality of stimulation, and the number of things that the participant reported going on in his or her head at a time. They also concluded that people who switch their attention more from channel to channel of the tape recording feel less able to control their thoughts. In addition, they found that there was a clear individual difference in estimated duration of thought segments.

Several studies on the thought sampling procedure were summarized. In all of these studies, the procedure involved stopping certain individuals performing a task and requesting them to describe what

thoughts were going throughout their minds jsut before the interruption.

Classroom Management and Teacher Effectiveness in Second Language Classrooms

In recent years attention has been given to new methodologies and curriculum materials for teaching a second language. More recently, emphasis has been placed on alternative classroom structure. Whatever the research emphasizes, the most important element in learning a second language is the teacher, because the teacher is the one who can make the difference. Good teachers seem to know how to make students like learning a foreign language and want to continue studying it.

Although teacher effectiveness is not the main concern of this study, it is important to find out what it is that makes "good" teachers "good" so as to understand the learning process in learning a second language.

Bailey and Celce-Murica (1979) reviewed various research on how to be effective ESL teachers and suggested that ESL teachers should be aware of four significant areas of classroom interactions. These areas included the social climate, the variety of learning activities, the opportunity for student participation, and the need for feedback and correction.

Social Climate.

Schumann (1975); Stevick (1976); Moskowitz (1979); Moskowitz, Benevento and Frust (1973); and Moskowitz and Hayman (1976) indicated that the social environment in which a person learns a language is an important step in the language learning experience, because a good social climate creates communication. To create a good social climate, Bailey & Celce-Murica suggested that teachers should know the names of their

students, know some information about their background, interests, and reasons for taking the course, and their area of origin. This information can help to break the ice socially and provides meaningful contexts for many lessons. Also, they suggested that teachers play an active role in helping students to get acquainted. This can be done through introductory activity during the class meeting.

The physical environment is an important element too. Bailey and Celce-Munica suggested that classrooms should be comfortable and clean; rooms with fixed desks or laboratory partitions on the tables have an isolating effect on students. Whatever the physical setup of the class, teachers can manage grouping or arrangements of desks that help to involve students in their new communicative situation and improve the social climate.

Variety in Learning Activity.

Bailey and Celce-Murica suggested that in teaching language skills, the teacher's lesson plans should include various approaches that would make the lesson more interesting and stimulating. The sequence of the activity is a significant element in ensuring that the basic presentation is logical and coherent, e.g., easy to difficult, manipulative to communicative. They also suggested various kinds of learning activities that added variety to ESL classrooms such as: audio-visual equipment, pictures, realia, communication games, student-generated material, flexible reading and writing assignments, cultural journals, and anthologies of students' work. They also suggested that teachers should utilize the activities and equipment available in order to help the students learn the material. Finally, they indicated that teachers should research the available professional journals and make trips to

educational resource centers in order to discover useful ideas for adding variety and interest to the lesson.

Opportunity for Student Participation.

Bailey and Celce-Murica indicated that classrooms that allowed a great deal of student interaction are effective and insure learning. They suggested several strategies to insure student participation, such as utilizing classroom management chores, name cards and chain drills, turning students' questions back to the class, "play teacher," pair work, small group work, and team competition. All the above activities should aim at minimizing the amount of time teachers spend talking and increase the opportunity for students to utilize their English by simply providing opportunity to actively use the language. Group work is one of the best type of activities that minimize teacher talk and increase student involvement. Long and Porter (1985) indicated that five pedagogical arguments for the use of group work in second language learning. They believed that group work increased language practice opportunities, improved the quality of student talk, helped to individualize instruction, promoted a positive affective climate, and motivated learners.

Feedback and Correction

Bailey and Celce-Murica believed that a correct response in a language lesson should be positively reinforced. In error correction, they believed that students should be led to self-correct and ultimately monitor their own language production. Also peer correction is helpful either in a small group or with the entire class.

Research on teacher effectiveness and classroom management has investigated the personality and behavior of the teacher in addition to

personal characteristics, instructional procedures, styles of interaction, self-perception, and perception of others.

Classroom behaviors fall into three basic areas: maintenance of the learning environment, use of student time, and finally method of instruction. Salganik (1980) believed that teaching behaviors are responsible for the difference between effective and ineffective instruction: (a) There is no specific way that always works to run a classroom, and (b) There is no use in having a fifty-minute class period if the time on task is only thirty minutes.

To conclude this overview, it is clear that a simple process-product approach could slightly change the learning environment. In this approach, teacher behaviors are very important for student achievement. Teachers influence achievement only if they have an influence on students' active involvement with the materials to be covered. So teachers determine the activity for learning and student involvement in these activities determines the learning outcome.

Nerenz and Knop (1982) believed that there is a relationship between content to be covered and achievement gains. They indicated that recent research suggested that content covered and engaged time were very important elements for achievement.

Nerenz and Knop (1982) believed that in a second language classroom, the effective teacher is the one who provides students with good opportunities to learn the requisite content and who use instruction in which students can be involved. Also good teachers considered the link between student opportunity to learn, student engagement, and learning outcomes. Allocated time as well as engaged time are emphasized.

Nerenz and Knop (1982) indicated that the research on

classroom management has moved from the analysis of teacher traits to studies that focus on the learner in the classroom environment. Rosenshine and Frust (1971) indicated that effective and ineffective teachers could be distinguished on the basis of several variables such as clarity of the teacher, variety of classroom activities, task oriented behaviors, content covered, student participation, and use of different types of questions. Moskowitz (1976) stated that classroom behaviors and practices that are very important for a successful learning environment usually emphasize student involvement. In these classrooms the target language is the dominant language of classroom interaction; teachers allow students to talk and ask questions; teachers move around the classroom; they smile, praise and joke; they try to personalize the content more; and they attract students' attention by giving them enough space to use different kinds of activities.

To provide teachers with ideas for putting the available theories into useful practice, this section summarized the current research on the field of classroom skills for English As a Second Language teachers. This research suggests four significant areas of classroom interaction of which teachers should be aware in planning a language lesson and analyzing their own teaching: social climate, the variety in learning activities, the opportunity for student participation, and the need for feedback and correction.

Summary

This study is an attempt to address directly the question of what attention is and the relationship between student's attentional behavior and the amount of knowledge they acquire.

In this chapter, a historical review of the concept of attention was

presented. The relevant researchers were reviewed and the findings were presented. It was noted that few investigations have been conducted which dealt with attention in various classroom activities. Most of the investigations conducted focused on school-age children in reading and math courses. The researchers found out that attention is positively related to knowledge gain.

In conclusion, it is clear that attentiveness is a significant element in successful classroom learning. Effective instructional content depends on the attentional focus of both the student and the teacher. Therefore, the main goal of this chapter was to link the findings of the experimental research to the various activities in the classroom.

Chapter III

Research Methodology

Introduction

Up to this point, theoretical and empirical studies related to the present investigation have been examined. By examining some of the different variables utilized in previous studies and by generating a set of hypotheses, this research is designed to extend the findings of previous studies in teaching English as a second language.

Anderson (1981) believed that for a long time educators had been concerned about the teacher-effectiveness question "How do teachers bring about desirable student outcomes?" She believed that research on teaching approached this question through naturalistic studies of the classroom, in which teacher-behaviors were related to student achievement. One of the most important findings of the last decade of research on teacher-effectiveness has been that "time on task" (attention to the task) is associated with achievement gains. To help the teacher decide how to increase student time-on-task behavior, this study was implemented to investigate the variables related to instructional attentiveness. These variables included type of activity, length of activity, and timing of the activity. These ideas were tested with English as a second language teacher-training courses at Michigan State University.

Design of the Study

The study was designed to determine the level of student attentiveness, the conditions relating to level of attentiveness, and the relationship of attentiveness to the grades students received. The study also investigated the relationship between the subject's background

experience and their level of attention, and it investigated the relationships between age, sex, and motivation and level of attention.

The survey design employed in this study was cross-sectional, which provided a description of the population at a particular point of time, specifically the Fall term of 1987.

Hypotheses

1. There is a correlation between global level of attention and the following variables:
   - Sex
   - Age
   - Marital status
   - Academic classification
   - Teaching experience
   - Reason for taking the course
2. There is a positive correlation between global attention and the following variables:
   - Interaction in the classroom
   - Length of activities
   - Timing of activities
3. There is a positive correlation between students' apparent attention and course grade (knowledge acquisition).

Sample

The sample for this study consisted of students enrolled in the Method of Teaching English as a Second Language class, "407," at Michigan State University; during fall term, 1987. A total of fifty-six students were in the class. Ten (10) student were randomly selected from the class to be observed extensively and interviewed by the researcher.

Class

The class used to meet every Tuesday for four hours (4-6 p.m.). Three - 10 minute breaks were given to students after each hour. The subject matter included methods of teaching a second language.

Instructor

The instructor of the course was an associate professor in the English Language Center. He is teaching English as a second language as well as methods of teaching a second language class. He used a lot of variety of classroom activities.

Instrumentation

The study used a combination of four instruments and techniques to test the hypotheses:

Observation

The observation included a recording of what occurred in the Methods of Teaching English as a Second Language classroom. Ten students attending the class were randomly selected and observed.

The observation procedure involved a sequence in which the researcher looked at a student, observed his or her behavior for a brief glance, and placed a mark on the observation sheet beside that student's name. Then, the researcher located the next student and repeated the sequence. Each sequence for each student took less than six (6) seconds. The researcher had a clipboard and stopwatch which was marked with red tape at six-second intervals. The researcher moved her eyes around the classroom observing each sequence until each student had been observed ten times in an hour.

During observation, the observer looked for and recorded the several behavior categories that Forness (1983) suggested:

V (Verbal Positive)

Students made a task-oriented response and gesture (e.g. recited, asked or answered questions).

AT (Attend)

Students looked at the teacher or material, waited quietly for the lesson to begin, or looked at classmates who were reciting.

NT (Not attend)

Students did not look at the lesson or teacher (i.e., looked around, stared into space).

D (Disrupt)

Students engaged in behavior which interrupted task-oriented activities (e.g., talked to classmate, threw an object, etc.). (see Appendix A for a copy of the observation recording sheet)

Introspective Technique

An introspective technique was used which involved stopping the class for a few minutes several times during the class period. A "Thought Sampling" Questionnaire devised by the researcher was distributed in every class session. The researcher gave a signal to the class (by turning off the lights) during certain activities. At the signal, the teacher and students stopped whatever they were doing and filled out the "thought sampling" questionnaire. In this instrument students were asked to introspect; to reflect on their experiences by responding to eight questions. The assumption underlining the introspective technique, as suggested by Cohen (1983), is that learners can verbalize about learning processes. The questions asked in this technique were clear and concise, and they required short responses (e.g. put an "x" next to the most suitable answer).

Klinger (1978) indicated that the "thought sampling" technique allows the subject to try to reconstruct whatever was going on before interruption, however complex the cognitive process. In any case, subjects must rely on their memory for their reports; and because it is sometimes hard to recapture the order in which thoughts occurred, some of the sequential processes may be lost. For the purpose of the present study, a series of questions were made up that require short responses. These questions were used several times during the first class (see Appendix B). A few changes were made upon the request of some students for the purpose of clarification (see Appendix C).

Questionnaire

For the purpose of this study, the researcher developed a set of questions in order to investigate the level of attention to various activities in a second language class. The questionnaire covered the following variables: (a) the timing of activities, (b) the length of activities, and (c) the type of activities.

The first set of questions asked personal information such as sex, age, experience in teaching a second language, and motivation to teach a second language (English).

The second part of the questionnaire included questions about one's level of attentiveness in general and in various classroom activities. It included questions that inquired about type of activity (such as interactive group activities, lecture, and individual activities), length of activity (short or long), and timing of activity (early, middle, or late).

An initial draft of the questionnaire was reviewed by the instructor of the course "407" and by other doctoral committee members. Their

suggestions for clarification and information were used to revise the questionnaire. The questionnaire, including a letter of transmittal, was given to the students during the final class period. Students responded to it and returned it the same day. (see Appendix D)

Interview

The same ten students who were randomly selected for observation were also interviewed.

A series of questions was designed prior to the study. The interview was audio recorded while the interviewer took notes on content, inflection, gestures, and facial expressions, as well as the responses to the questions of the interview. This provided a permanent record which could be referred to when analyzing the data.

At the beginning of the interview, a friendly climate was established by casual conversation. Giving and receiving general information helped to gain the confidence of the participant and establish a relaxed atmosphere.

Following this, the interviewer took time (a) to explain to the participant the purpose of the study, (b) to explain to the participant the importance of the accuracy and quality of the answers given, (c) to explain to the participant the format of the interview, and (d) to reassure the participant of promised confidentiality.

Two interviewing techniques were used during the interview. After statements were made by the participant the interviewer deliberately paused to allow the participant to add more information if he or she wished to do so. The interviewer also rephrased the participant's answers to provide a check on the interviewer's understanding of an answer. This added to the reliability of the reporting.

The questions covered in the interview were open-ended inquiring about the validity and reliability of the study, thoughts in mind during the class, recalling the thoughts, images, and general level of attentiveness to various activities.

Finally, a summary was used at the end of the interview offering the participant a chance to confirm, revise, or add to the information gathered. (see Appendix E)

Data Analysis

Part 1: The Questionnaire

A. Analysis of variance (ANOVA) was used to test if there were any significant differences in the group means of attention according to the demographic characteristics of the respondents. The means for each group was computed as follows: mean $= \frac{\sum x_i}{n}$ where x is the score for the subject in the group and n is the sample size for the particular group. Whenever the number of groups was more than two and the omnibus ANOVA results were significant, a Tukey's post-hoc test was used to find pair-wise significant differences between the group means. Students' responses on the selected questions on the questionnaire were converted into a numerical scale as follows: 1. Excellent, 2. Good, 3. Uncertain, 4. Poor, 5. Terrible. The means of the entire class were derived from these numerical values. This type of quantification of responses results in a condition in which lower mean scores indicate higher levels of attention. These means appear in Table 1 and thus apply to all tables in part I.

B. A regression coefficient was used to test the relationship between final course grade (knowledge gained) and attention level.

Part 2: Thought Sampling

A chi-square statistic was used to test if there was a relationship between the categorical variables of classroom activities and student behaviors. Student responses on selected questions were also converted into a numerical scale as: 1. Yes, 2. No for the first question (were you paying attention)? Also 1. Short, 2. Long (preference length of activities), 1. Lecture, 2. Group, 3. Individual (preference for type of activities), and 1. Early, 2. Late for (preference for timing). The means of the entire class were derived from these values and appear in Table 16 and thus apply to all remaining tables in part 2.

The significant level for each test was α = .05 level.

For data analysis purposes, the mean responses were grouped into three categories using the same length of interval (i.e. $4 \div 3 = 1.33$ for each category. the categories are as follows: 1 = very high, 2 = high, 3 = moderate, 4 = low, and 5 = very low. The mean responses were grouped into three categories using the same length of interval (i.e. $4 \div 3 = 1.33$) for each category. The categories are as follows:

High	1.00	-	2.33
Average	2.34	-	3.66
Low	3.67	-	5.00

Part 3: Observation

The observations for each subject were classified according to the following variables: timing of the activities (early vs. late), length of activities (short vs. long), and type of activities (group vs. individual, group vs. lecture, and individual vs. lecture). The mean for several observations of the same variables was computed by adding the frequencies of paying attention (for the same variable) and dividing the

sum by the number of observations of the variable.

Part 4: Interview

Students' responses for the interview questions were reviewed. A rough comparison of all 4 techniques were made and final conclusions were made.

Summary

In this chapter, the research design and methodology for this explanatory study was presented. The purpose of the study was discussed, and the sample was described.

Four types of instruments used for the study were described, namely: observation, introspective technique, questionnaire, and interview. The data collection procedure and the data analysis methodology were summarized.

CHAPTER IV

Presentation and Data Analysis

This study is primarily an examination of the variables related to instructional attentiveness. These include the type, length, and time of the activity of students during a particular class: an English as a Second Language teacher-training course at Michigan State University.

The major research questions for this study are:

1. Can quick, non-intensive self-reports provide valid data on one's level of attention that correlates with observer judgements, teacher judgements, interview results, and questionnaire results.
2. Under what conditions do students attend most in TESL classes?
3. Are the grades students receive in the course related to the level of attention they paid during the classes?

Hypotheses

1. There is a correlation between global level of attention and the following categorical variables:
   - —Sex
   - —Age
   - —Marital status
   - —Academic classification
   - —Teaching experience
   - —Reason for taking the class
2. There is a positive correlation between level of attention and the following variables:
   - —Amount of classroom interaction (interactive, individual, and lecture)

--Length of activities (long or short).

--Timing of activities (early or late in the class).

3. There is a positive correlation between level of attention and course grade (knowledge acquisition).

The first instrument (the questionnaire) consisted of six background questions and twenty questions that were designed to discuss the relationship between level of attention and various classroom activities. The second instrument (the "thought-sampling" questionnaire) consisted of eight questions that were designed to investigate the relationships between level of attention and various classroom activities. This instrument was used several times during every class period. The third instrument consisted of observation. The researcher recorded the time, length, and type of activity and recorded the frequency of the students' positive and negative behavior during the various activities. The last instrument (the interview) consisted of eight open-ended questions in which the students expressed their feelings about the different kinds of activities and rated their level of attention.

Data Analysis

Part One: Analysis of variance was used to test a number of independent variables derived from the questionnaire. The results of the tests follows.

Table 1

The means of level of attention in: general, short compared to long activities, group compared to lecture activities, lecture compared to individual activities, and ANOVA results according to age

		Mean Attentiveness in			
Age	N	General (Various Classroom Activities)	Short Activities (compared to Long)	Group Activities (compared to Lecture)	Lecture (compared to Individual Activities)
Under 22	17	2.235	2.471	2.235	2.353
22 & over	29	1.724	2.069	1.552	2.000
P-Values		.0141	.119	.006	.109

(α=.05)

Student responses on selected questions on the questionnaire were converted to a numerical scale. 1 = Excellent, 2 = Good, 3 = Uncertain, 4 = Poor, 5 = Terrible. Students over 22 were combined with students over 33 for purpose of analysis. Means for the entire class were derived from these numerical values. The lower the mean, the higher is the level of attention. These means appear in the cells in table 1, and thus apply to all tables in part I.

The results in Table 1 showed a significant difference in the level of general attentiveness between students under 22 years and students 22 years and over at the .05 significance level (P = .0141; all of the following statistics were analyzed at the .05 level of significance). The scores of students who were 22 years and over represented a higher

level of attentiveness. The groups' means were 2.235 (under 22) and 1.724 (over 22). However both groups were classified as high in attentiveness. The results indicated that attentiveness is related to age.

The results also showed a non-significant difference in the level of attentiveness between students under 22 years and students 22 years and over in short activities when compared to attentiveness to long activities (P = .119). The group of students over 22 years of age was ranked as high in attentiveness to short activities while the group of students under 22 was ranked as average in attentiveness. The overall results indicated that attentiveness to short activities is not related to age.

Regarding attentiveness in group activities as compared to lecture, the results indicated a significant difference (P = .006). The group 22 years and over showed a higher level of attention to group activities (group mean = 1.552). The group under 22 years of age showed a lower level of attentiveness to group activities (group mean = 2.235). Both groups were classified as high in attentiveness. The results indicated that older subjects ranked their attention level during group work to be on a higher level than the younger subjects ranked their level of attention. Therefore, the results indicated that the level of attentiveness in group activity, as compared to lecture, was related to the age of the subject.

The results also showed a non-significant difference (P = 1.09) in the level of attentiveness to lecture compared to individual activities, of students 22 years and over and students under 22 years. Both groups were classified as high in attentiveness to a lecture compared to

individual work. Therefore, the results indicated that the level of attentiveness to the lecture was not related to age.

The overall results of this examination indicated that level of attentiveness was significantly related to the age of the subject.

Analysis of variance was used to test sex as an independent variable and the results were as follows:

Table 2

The means of level of attention in: general classroom activities, short compared to long activities, group activities compared to lecture, lecture compared to individual activities, and ANOVA results according to gender

		Mean Attentiveness in			
Sex	N	General (various classroom activities)	Short Activities (compared to Long)	Group Activities (compared to Lecture)	Lecture (compared to Individual Activities)
Male	8	2.125	2.250	1.750	2.250
Female	38	1.868	2.210	1.815	2.105
P-Values		.347	.905	.260	.026

Table 2 showed a non-significant difference (P= .347) between male and female students on attentiveness. Both groups were highly attentive to various classroom behaviors. Thus, the results indicated that level of attention during various classroom activities was not significantly

related to the sex of the subject.

The results also showed non-significant differences (P = .905) between the level of attentiveness for short versus long activities, of males and females. Both groups were considered to be high in attentiveness.

Regarding attentiveness in group activities compared to lecture, the results indicated a non-significant difference (P = .260) between males and females. Both the male and female groups were considered to be highly attentive in group activities compared to lecture.

Finally, the results showed a significant difference (P = .026) between males and females in the level of attentiveness to lecture compared to individual activities. The data indicated that sex was related to the level of attentivenss to a lecture compared to individual activities. The mean for male and female groups was 2.250 and 2.105, respectively. This indicated that females demonstrated a higher level of attentiveness to lecture than did the male group. Both groups were considered to have a high level of attentiveness to lecture when compared to individual activities.

The overall results indicated that level of attentiveness to various classroom activities was not significantly related to the sex of the subject, except when lecture is compared with individual activities.

Table 3

The means of level of attention in: general, short compared to long activities, group activities compared to lecture, lecture compared to individual activities, and ANOVA results according to marital status

		Mean Attentiveness in			
Marital Status	N	General (Various Classroom Activities)	Short Activities (compared to Long)	Group Activities (compared to Lecture)	Lecture (compared to Individual Activities)
Married	8	1.500	1.750	1.500	1.625
Single	38	2.000	2.315	1.864	2.236
P-Values		.063	.083	.260	.028

Table 3 showed that the difference between married and single students for level of attentiveness to various classroom activities was not significant (P = .063). Both groups (married and single) showed a high level of attentiveness.

The results also indicated that the difference between married and single students' level of attentiveness for short activities compared to long activities was not significant (P = .0836). Both groups showed a high level of attentiveness.

Regarding attentiveness to group activities compared to lecture, the results showed that the difference between the level of attentiveness for married and single students when comparing group activities and lecture was not significant (P = .260). The data indicated that the level of attentiveness to group activities compared to lecture was not significantly related to marital status. However, both groups were

considered to be high in attentiveness.

Finally, the results showed a significant difference (P = .028) in the level of attentiveness between married and single students when comparing lecture and individual activities. This indicated that marital status was significantly related to level of attentiveness to lecture compared to individual activities. The married group mean was 1.625 and the single group mean was 2.236. These figures indicated that married students showed a higher level of attentiveness to lecture compared to individual activities. However, both groups scored high on level of attention to the lecture compared to the level of attention to individual activities.

The overall results of the effect of marital status indicated that marital status was not significantly related to level of attentiveness to various classroom activities, except when attention during lecture was contrasted to attention during individual activities.

Table 4

The means of level of attention in: general, short compared to long activities, group activities compared to lecture, lecture compared to individual activities, and ANOVA results according to academic classification.

Academic Classif.	N	Mean Attentiveness in: General (Various Classroom Activities)	Short Activities (Compared to Long)	Group Activities (Compared to Lecture)	Lecture (Compared to Individual Activities
Graduate	23	1.826	2.130	1.652	2.1
Under-Graduate	21	2.047	2.381	2.047	2.142
P-Values		.296	.328	.117	.887

The results in Table 4 showed that the difference between the level of attentiveness for graduate and undergraduate students was not significant (P = .296). Thus the data indicated that academic classification was not significantly related to level of attentiveness to various classroom activities. However, both groups were highly attentive to classroom activities.

The results also showed a non-significant difference between the level of attentiveness of undergraduate and graduate student groups when comparing short and long activities (P = .328).

Regarding attentiveness in group activities compared to lecture, the results indicated a non-significant difference (P = .117) between graduate and undergraduate students. The data suggested that academic classification was not related to the level of attentiveness to group activities compared to lecture. However, both graduates and

undergraduates showed a high level of attentiveness.

Finally, the results indicated that there was no significant difference (P = .887) between graduate and undergraduate level of attentiveness to lecture versus individual activities. Therefore, academic classification was not found to be related to level of attentiveness. The results also indicated that both groups had a high level of attentiveness to lecture compared to individual activities.

The overall results suggested that the level of attentiveness was not significantly related to academic classification.

Table 5

The means of level of attention in: general, short compared to long activities, group activities compared to lecture, lecture compared to individual activities, and ANOVA results according to teaching experience

		Mean Attentiveness in			
Teaching Exper.	No.	General (Various Classroom Activities)	Short Activities (compared to long)	Group Activities (compared to Lecture)	Lecture (compared to Individual Activities)
None (1)	24	1.958	1.667	1.666	2.166
<5yrs (2)	16	1.813	1.625	1.625	2.041
>5yrs (3)	6	2.000	1.958	1.959	2.167
P-Values		.774	.388	.671	.431

The results in Table 5 indicated a non-significant relationship (P = .774) between level of attentiveness and teaching experience. Thus, the results suggested that teaching experience was not related to level of attentiveness. The three groups showed a high level of attentiveness to various classroom activities.

The results also indicated a non-significant difference (P = .368) in the level of attentiveness for groups with varying amounts of teaching experience when comparing short activities to long. Teaching experience was not related to level of attentiveness in short activities compared to long. However, the results showed that the three groups had a high level of attentiveness to short rather than long activities.

Regarding attentiveness to group activities compared to lecture, the results indicated a non-significant difference (P = .671) between levels of teaching experience. Teaching experience is not significantly related to the level of attentiveness to group activities compared to lecture.

Finally, the results showed a non-significant difference (P = .431) for level of attentiveness dependent upon teaching experience. Years of teaching experience was not related to the level of attentiveness to lecture compared to individual activities.

The overall results indicated that teaching experience was not significantly related to the level of attention.

Table 6

The means of level of attention in: general, short compared to long activities, group activities compared to lecture, lecture compared to individual activities, and ANOVA results according to the reason for taking the course

Reason For Taking Course	N	Mean Attentiveness in: General (Various Classroom Activities)	Short Activities (compared to Long)	Group Activities (compared to Lecture)	Lecture (compared to Individual Activities)
Required f/Degree	13	1.923	2.230	1.714	2.000
Enjoyment	7	2.000	2.285	1.750	2.142
To Teach Second Language	24	1.916	2.208	1.795	2.208
P-Values		.962	.977	.805	.721

The results in Table 6 indicated no significant difference (P = .962) in level of attentiveness for the groups which gave various reasons for taking the course. This showed that motivation to learn (reason for taking the course) was not related to the level of attentiveness. All three groups indicated a high level of attentiveness.

The results also indicated no significant difference (P = .977) related to motivational factors when comparing attentiveness to short versus long activities. All three groups were considered to have a high level of attention on short activities when compared to long activities.

Regarding attentiveness to group activities compared to lecture, the

results indicated no significant (P = .805) differences between motivational factors in the level of attentiveness. The reason for taking the course was not related to the level of attentiveness for group activities compared to lecture. All three groups showed a high level of attentiveness in group activities.

Finally the data indicated no significant (P = .721) differences applicable to motivational factors when comparing the level of attentiveness to lecture versus individual activities. The data suggested that the reason for taking a course was not related to level of attentiveness in lecture as compared to individual activities. The three groups showed a high level of attentiveness.

The overall results indicated that the reason for taking a course was not significantly related to level of attentiveness in various classroom activities.

Table 7

The means of level of general attention and ANOVA results during early versus late timing of the activities

Timing	N	Mean Attentiveness
Early	28	1.895
Late	8	2.000
Total / P-Value	46	.701

The results in Table 7 indicated no significant differences based on the time of the activity (P = .701). Thus the results suggested that

timing was not significantly related to the level of attentiveness during lecture. Both groups showed a high level of attention.

Table 8

The means of the level of general attention and ANOVA results during early timing versus late timing of the individual activities

Time of the Individual Activity	N	Mean Attentiveness
Early	42	1.905
Late	4	2.000
Total / P-Value	46	.7963

The results in Table 8 indicated no significant (P = .796) differences regarding level of attentiveness and the time of the individual activities. Therefore, the time of individual activities was not related to the level of attentiveness.

Table 9

The means of the level of general attention and ANOVA results during early versus late timing of the group activities

Time of the Group Activities	N	Mean Attentiveness
Early (1)	14	1.844
Late (2)	32	1.800
Total / P-Value	46	.6765

The results in Table 9 indicated no significant relationship between attention level and the time of group activities (P = .676). Apparently, timing is not related to the level of attentiveness during interactive work.

Table 10

The means of the level of general attention and ANOVA results according to the length of the activities

Length of Work	N	Mean Attentiveness
5 - 10 minutes	8	1.875
10 - 15 minutes	10	1.500
Over 15 minutes	28	2.075
Total / P-Values	46	.0782

The results in Table 10 showed no significant (P = .078) differences which indicated that length of time was not likely related to the level of attention during the lecture. All indicated a high level of attention.

Table 11

The means of the level of general attention and ANOVA results according to the length of activities during individual work

Length of Time	N	Mean Attentiveness
5 - 10 minutes	10	1.7000
10 - 15 minutes	27	1.8148
Over 15 minutes	9	2.444
Total / P-Value	46	.031

The results in Table 11 indicated significant differences (P = .031) regarding length of the activity and attentiveness during individual work. This suggests that length of time was related to the level of attentiveness during individual work. The data indicated that long activities during individual work produced lower levels of attentiveness. Their means were 1.700 (5 - 10 minutes), 1.814 (10 - 15 minutes), and 2.444 (over 15 minutes). Nevertheless, all groups indicated high levels of attentiveness.

Table 12

The means of the level of general attention and ANOVA results according to the length of time of group activities

Length of Time	N	Mean Attentiveness
5 - 10 minutes	14	2.159
10 - 15 minutes	22	1.818
Over 15 minutes	5	1.400
Total / P-Value	46	.0602

The results in Table 12 indicated no significant differences regarding length of time and level of attentiveness during interactive activity (P = .060), which suggested that length of time was not related to the level of attention during group work. All were classified as high in level of attention.

Table 13

The means of the level of general attention and ANOVA results according to the type of activity

Type of Activity	N	Mean Attentiveness
Lecture	21	2.000
Group	22	1.590
Individual	3	2.238
Total / P-Value	46	.0065

The data in Table 13 indicated a significant relationship between level of attentiveness and the type of activity (P = .006). This suggested that the type of activity is related to the level of attentiveness. The three group means were 2.000 (lecture), 1.590 (group), and 2.238 (individual); which indicated that students were more attentive during group work, followed by lecture, and were least attentive when working alone. However, the three groups all demonstrated a high level of attentiveness.

Table 14

The means of the level of general attention and ANOVA results according to the length of time of various classroom activities

Length of Time	N	Mean Attentiveness
Short	34	1.7941
Long	12	2.2500
Total / P-Value	46	.0491

The results in Table 14 showed a significant difference in the level of attentiveness depending on the length of time of various classroom activities (P = .049). This indicated that the length of time of the activities is related to the level of attention. Students appeared to have a higher level of attention during short activities than during long activities. The group means were 1.794 (short) and 2.2250 (long). However, both groups still demonstrated a high level of attentiveness.

Table 15

The means of the level of general attention and ANOVA results according to the timing of various classroom activities

Timing of the Activity	N	Mean Attentiveness
Early	26	1.702
Late	20	1.823
Total / P-Value	46	.0757

The data in Table 15 indicated there were no significant differences in the level of attention, in reference to the timing of various classroom activities (P = .075). This showed that the timing of the activities was not related to the level of attention. Again, both groups showed a high level of attentiveness.

Regression coefficient was used to indicate if there is positive relationship between final grade and the teacher's judgement of students level of attention, also regression coefficient was used to indicate if there is positive relationship between students' final grade and their level of attention according to the questionnaire responses.

The students' final course grades were reported in a numerical system which consists of the following scale: 4.0 - 3.5 - 3.0 - 2.5 - 2.0 - 1.5 - 1.0 - 0.0. The teacher's judgement of the level of attention were reported as follows: 3 = excellent, 2.5 = good, 2 = moderate, 1.5 = bad, and 1 = terrible. The students level of attention according to the questionnaire responses were reported as follows: 5 = excellent, 4 = good, 3 = uncertain, 2 = bad, and 1 = terrible

Table 16

The relationship between final course grade and teachers rating of students' level of attention.

No.	Final Grade Y	Teachers Judgement of Students' level of attention X
01	4.0	3.0
02	4.0	3.0
03	4.0	2.5
04	4.0	3.0
05	4.0	3.0
06	4.0	3.0
07	4.0	3.0
08	4.0	2.5
09	4.0	2.5
10	4.0	3.0
11	4.0	3.0
12	4.0	2.5
13	4.0	3.0
14	4.0	2.5
15	4.0	3.0
16	4.0	3.0
17	3.5	2.5
18	3.5	2.5
19	3.5	2.5
20	3.5	2.5
21	3.5	2.0
22	3.5	2.5
23	3.5	2.5
24	3.5	2.0
25	3.5	2.5
26	3.5	2.5
27	3.5	2.5
28	3.5	1.0
29	3.5	2.5
30	3.5	2.5
31	3.5	2.5
32	3.5	2.5
33	3.5	3.0
34	3.5	2.5
35	3.5	2.5
36	3.5	2.5
37	3.5	3.0
38	3.5	2.5
39	3.5	2.5
40	3.5	2.0
41	3.0	2.0

Table 16 (continued)

No.	Final Grade Y	Teachers Judgement of Students' level of attention X
42	3.0	2.0
43	3.0	1.5
44	3.0	2.0
45	3.0	2.5
46	2.5	1.5
Total	165.5	115.0

The following formula was used to determine the relationship between X and Y, where Y (course grade) is the dependent variable and X (level of attention) is the independent variable:

$Y = a + bX$

The computed a value was 2.20 and the computed b value was .555, which indicated that if X (level of attention) increased by one unit, Y (course grade) will increase by .555, which indiactes positive relationships between X and Y. Thus, the results indicated that students' final grade has a positive relationship with the teacher's judgement of students' level of attention.

Table 17

The relationship between final course grade and the students' level of attention according to the questionnaire responses:

No.	Final Grade Y	Level of attention according to the questionnaire X
01	4.0	5
02	4.0	5
03	4.0	5
04	4.0	5
05	4.0	4
06	4.0	4
07	4.0	5
08	4.0	4
09	4.0	5
10	4.0	5
11	4.0	5
12	4.0	5
13	4.0	4
14	4.0	4
15	4.0	4
16	4.0	4
17	3.5	4
18	2.5	4
19	3.5	4
20	3.5	5
21	3.5	4
22	3.5	4
23	3.5	5
24	3.5	5
25	3.5	4
26	3.5	4
27	3.5	4
28	3.5	4
29	3.5	4
30	3.5	4
31	3.5	4
32	3.5	4
33	3.5	4
34	3.5	4
35	3.5	4
36	3.5	4
37	3.5	1
38	3.5	4
39	3.5	4
40	3.5	4
41	3.5	4
42	3.0	1
43	3.0	1
44	3.0	1
45	3.0	1
46	2.5	4
Total	162	175

The following formula was used to determine the relationships between X and Y.

$$Y = a + BX$$

where Y is the dependent variable (course grade), X is the independent variable (level of attention according to the questionnaire).

The computed a value was = -3.173 and the computed b value was 1.76, which indicated that if X (level of attention according to questionnaire) increased by one unit, X (course grade will increase by 1.76). Which indicated a positive relationship between X and Y. Thus, the results indicated that students' final grade was positively related to the level of attention according to the questionnaire responses.

Part Two: Chi Square Tests were used to test the variables covered in the "thought sampling" questionaire which required "yes" or "no" responses (dichotomous variables). The results were as follows.

Table 18

Frequencies/Percentages: of attention, preference for early timing, preference for group work, and Chi-Square results according to the legnth of the activities

		Short f %	Long f %	Chi-Square (P-Values)
Paying Attention	Yes	49 (96%)	41 (80%)	4.627
	No	2 (4%)	10 (20%)	.0315
Preference for Early Timing	Yes	34 (61%)	32 (62%)	.0429
	No	17 (39%)	19 (38%)	(.835)
Preference for Group Work	Yes	30 (59%)	26 (51%)	.356
	No	21 (41%)	25 (49%)	(.550)
Total		51 (100%)	51 (100%)	

The computed chi-square for level of attention in short/long activities was 4.627 which was significant (P = .0315) at .05 level (the following significance tests were performed at the .05 level). Thus it was concluded that the level of attention was related to the length of the activity. The results showed that ninety-six percent of the students indicated that they were paying attention during short activities, and only eighty percent of the students indicated that they were paying attention during long activities.

The computed chi-square regarding preference for early activities was .0429, which was not significant (P = .835). The results indicated

that there is no significant difference in the number of students who showed a preference for early activities when choosing between short and long activities.

Table 18 showed that 61 percent of the students showed their preference for early activities during short activities and sixty-two percent of the students showed their preference for late activities during long activities. The computed chi-square for preference for group work during short/long activities was .356 which was not significant (P = .5505). Thus, the results indicated there was no significant difference in the number of students who showed preference for group activities during short versus long activities. Fifty-nine percent of the students showed their preference for group work during short activities and fifty-one percent showed the same preference during long activities.

Table 19

Frequencies/Percentages of: attention, preferred length of activities, preferred type of activities, and Chi-Square results according to the timing of the activity

		Early f %	Late f %	Chi-Square (P-Values)
Paying Attention	Yes	26 (87%)	21 (70%)	1.571
	No	4 (13%)	9 (30%)	(.210)
Length of Activity	Short	14 (47%)	17 (57%)	.267
	Long	16 (53%)	13 (43%)	(.605)
Type of Activity	Lecture	12 (40%)	12 (40%)	.000
	Group	18 (68%)	18 (68%)	(1.000)
	Individual	0	0	
Total		30	30	

The computed chi-square for attention level was 1.571 which was not significant (P = .210). Thus it was concluded that the level of attention was not related to the timing of the activities. The results indicated that time of activity is not a significant element in determining level of attention. Table 19 showed that eighty-seven percent of the students paid attention during early activities and seventy percent of the students paid attention during late activities.

The computed chi-square regarding the prefered length of activities

was .267 which was not significant (P = .605). The results showed that fifty-three percent of the students preferred short activities during the early time period and fifty-seven percent of the students indicated the same preference during the late time period.

The chi-square regarding the prefered type of activity was .000, which was not significant (P = 1.000). Forty percent of the students indicated a preference for lecture at the early time period, and the same number of students indicated a preference for lecture in the early and late timing. Sixty percent of the students indicated a preference for group work during early and short activities. The results indicated no difference at all for preference of group or lecture activities between the early and late time periods.

Table 20

Frequencies/Percentages of attention, preferred length of activities, and chi-square results according to the type of the activities (individual vs. lecture)

		Individual f %	Lecture f %	Chi-Square (P-Values)
Paying Attention	Yes	12 (60%)	14 (70%)	.0315
	No	8 (40%)	6 (30%)	(.0429)
Length of Activity	Short	17 (85%)	17 (85%)	0.000
	Long	3 (15%)	3 (15%)	(1.000)
Total		20	20	

The computed chi-square for paying attention was .0315, which was

significant (P = .0428). Thus it was concluded that the type of activity was an important element in determining the level of attention. The results in Table 20 showed that sixty percent of the students indicated that they were paying attention during individual activities and seventy percent of the students indicated that they were paying attention during the lecture.

The computed chi-square regarding the preferred length of activity was .000 which was not significant (P = 1.000). Eighty-five percent of the students indicated a preference for lecture during individual activity and a like number indicated that they still preferred lecture during lecture activity.

Table 21

Frequencies/Percentages of attention, preferred length of activities, and chi-square results according to the type of the activities (group vs. individual)

		Individual f %	Group f %	Chi-square (P-Values)
Paying Attention	Yes	23 (76%)	30 (100%)	5.823
	No	7 (24%)	0 (0%)	(.0158)
Length of Activity	Short	19 (63%)	28 (93%)	6.284
	Long	11 (37%)	2 (7%)	(0.0122)
Total		30	30	

The computed chi-square for attention level was 5.823 which was

significant (P = .0158). Thus, it was concluded that the level of attention was related to the type of activity. Table 21 showed that seventy-six percent of the students indicated that they were paying attention during individual activities, and all of the students indicated that they were paying attention during group activities.

The computed chi-square regarding length of activity during individual/group activities was 6.284 which was also significant (P = 0.0122). Therefore, the results indicated that length of the activity was related to the level of attention. The data showed that ninety-three percent of the students indicated that they would prefer short activities during individual activities while only sixty-three percent of the students indicated the same preference (short activities) during the group activities.

Table 22

Frequencies/Percentages of attention: preferred length of activities, and chi-square results according to the type of activity (lecture vs. group)

		Lecture f %	Group f %	Chi-Square (P-Values)
Paying Attention	Yes	19 (63%)	23 (71%)	.0714
	No	11 (31%)	7 (23%)	(0.398)
Preference for Short Activity	Short	15 (58%)	12 (40%)	0.269
	Long	15 (58%)	18 (68%)	(0.603)
Total		30	30	

The computed chi-square for paying attention was 0.714 which was not significant (P = 0.398). Thus it was concluded that the type of activity was not related to attention level when the comparison is between lecture and group work.

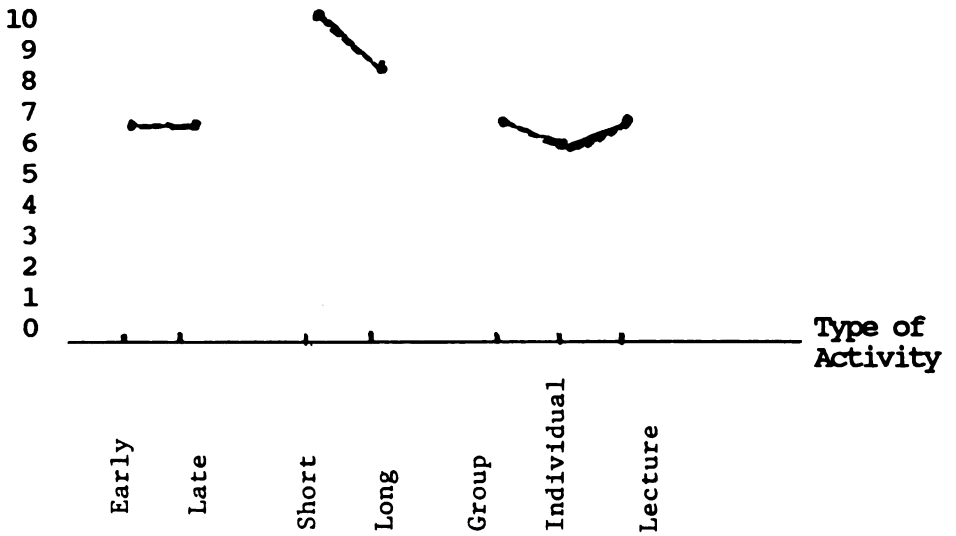
The computed chi-square regarding the length of activity was 0.2693, which was not significant (P = 0.603). Therefore, the results indicated that there is no significant difference in the preference for short or long activities between group and lecture activities.

Part 3: Observation

Ten students were randomly selected for observation several times during the term. The observations were classified according to the following variables: timing of the activities (early vs. late), length of activities (short vs. long), and type of activities (group vs. individual, group vs. lecture, and individual vs. lecture). The mean for several observations of the same variable was computed by adding the frequencies of paying attention (for the same variable) and dividing the sum by the number of observations of the variable.

Student No. 1

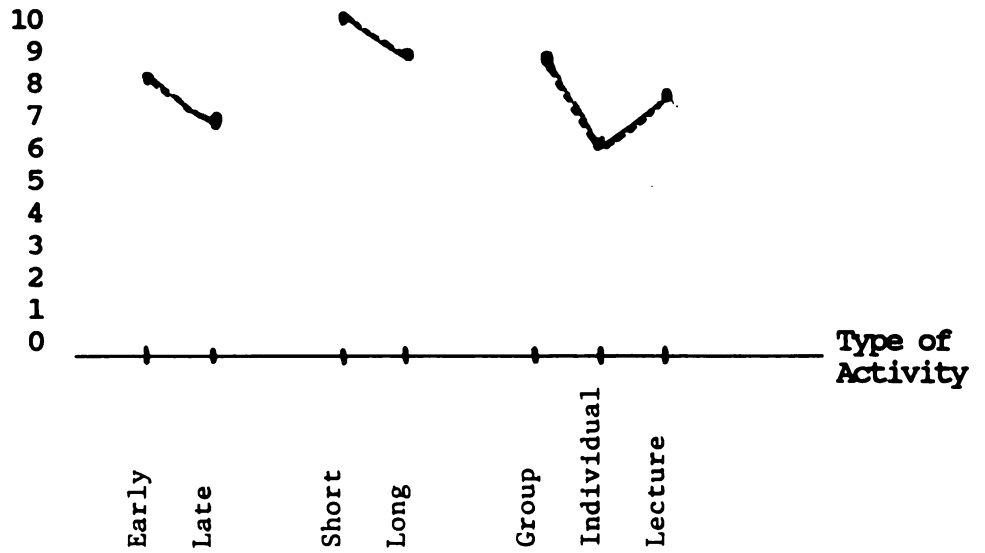
Mean Level of Attention



The results of the observation showed that student No. 1 had no difference in the level of attention between the early and late time periods of the activity. There were differences in the level of activities based on the length of the activity. The student showed higher levels of attention during short activities. Regarding the type of activity, the student showed a higher level of attention during group work compared with individual work. Also, the results showed that the student demonstrated a higher level of attention during lecture periods compared with during individual activities. However, the results indicated that there were no differences in the level of attention between group and lecture.

Student No. 2

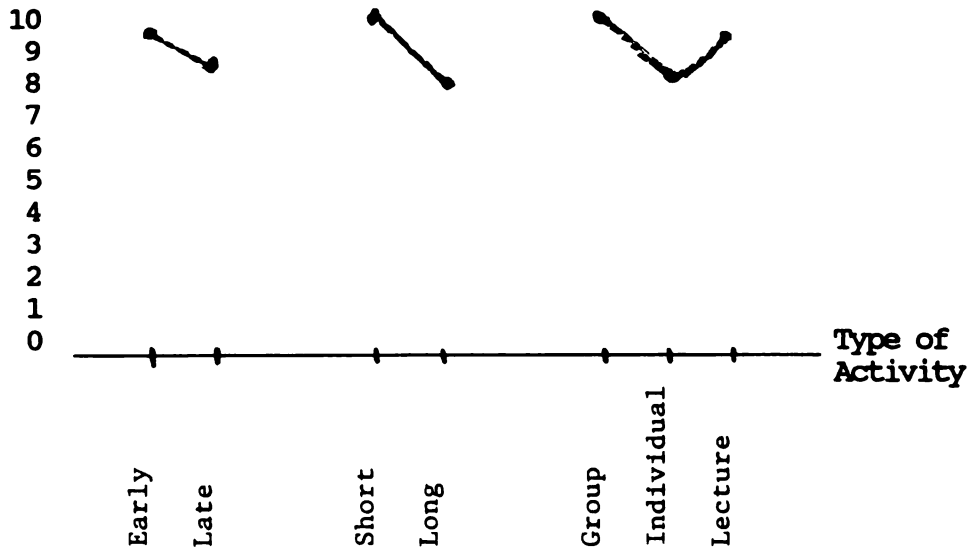
Mean Level of Attention



Observations indicated that Student No. 2 showed a variation in the level of attention based on timing of the activities. The student's attention level was higher during early activities. Also, in reference to the length of the activities, the student showed higher levels of attention during short activities. The data also showed that there was a difference in the level of attention based on the type of activity. The student showed the highest level of attention during group work and the lowest during individual work.

Student No. 3

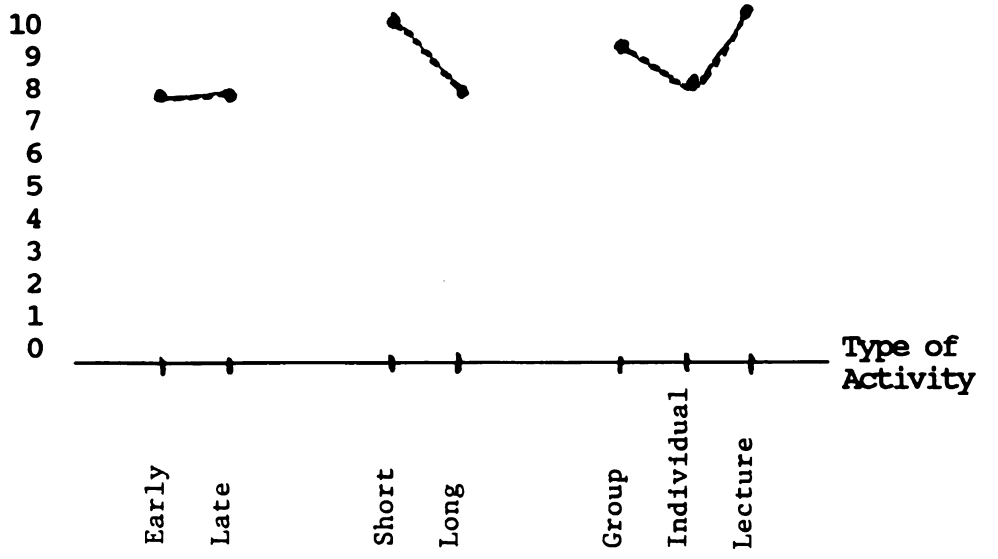
Mean Level of Attention



For this student the results of the observation showed a difference in the level of attention according to the timing: the student showed a higher level of attention during the early time period. Also, the results indicated the student showed a higher level of attention during short activities compared with long activities. The results also indicated that attention was related to the type of activity. The student's highest level of attention was during group work and the lowest was during individual activities.

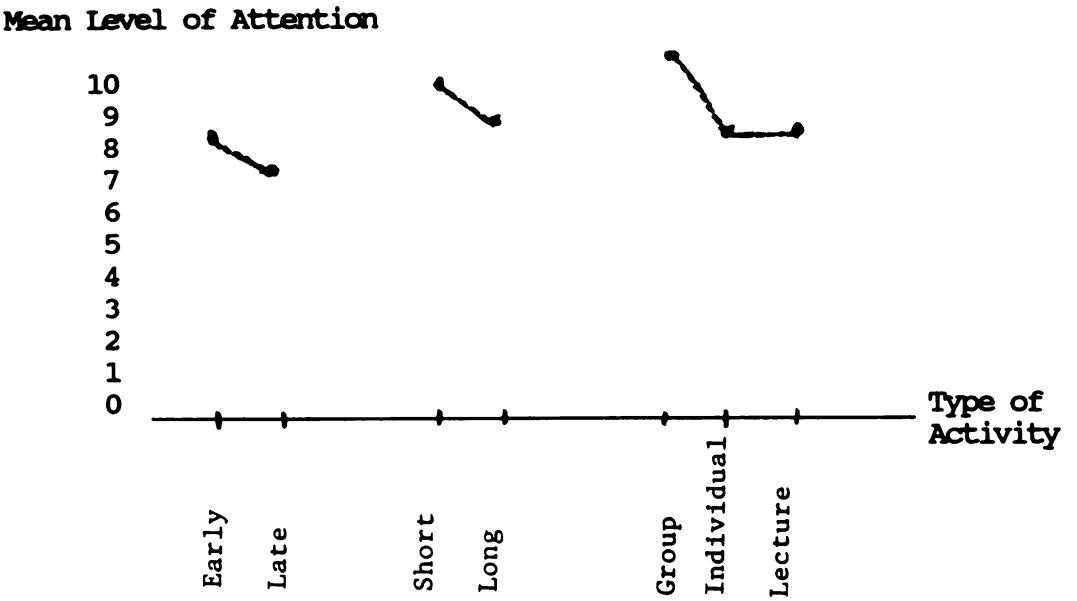
Student No. 4

Mean Level of Attention



The observation results showed that there were no differences between the level of attention according to the timing of the activities. The student demonstrated the same level of attention during early and short activities. There was a significant difference in the level of attention with regard to the length of the activities. The student showed a higher level of attention during short activities. Also the results indicated differences in the level of attention were related to the type of activities. The student's highest level of attention was during lecture and the lowest was during individual work.

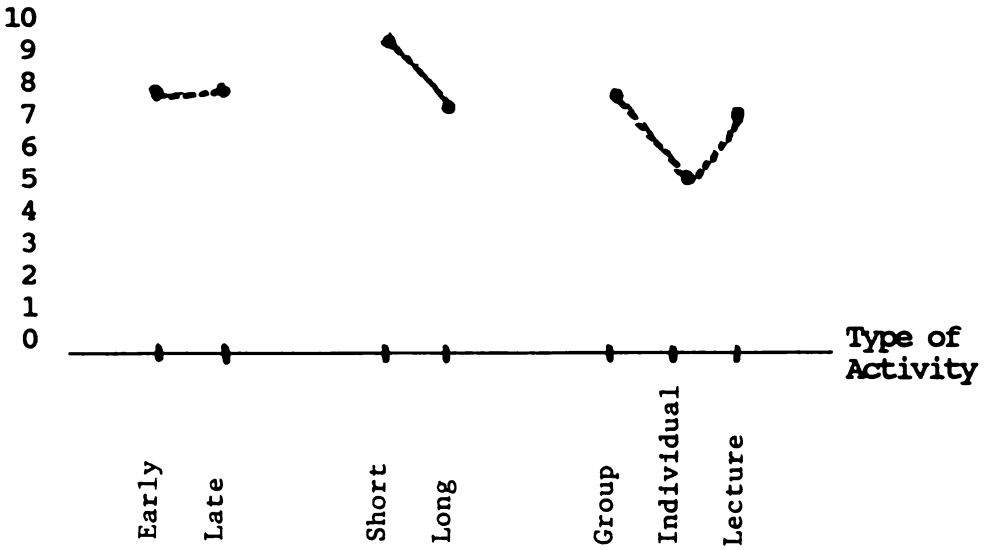
Student No. 5



The observation indicated that student No. 5 showed differences on attention level with regard to the timing period. The student's level of attention was higher during early activities. Also, the student showed a higher level of attention during short activities compared with long activities. The results indicated differences in the level of attention according to the type of activity. The student's highest level of attention was during group work and it was the same during lecture and individual work.

Student No. 6

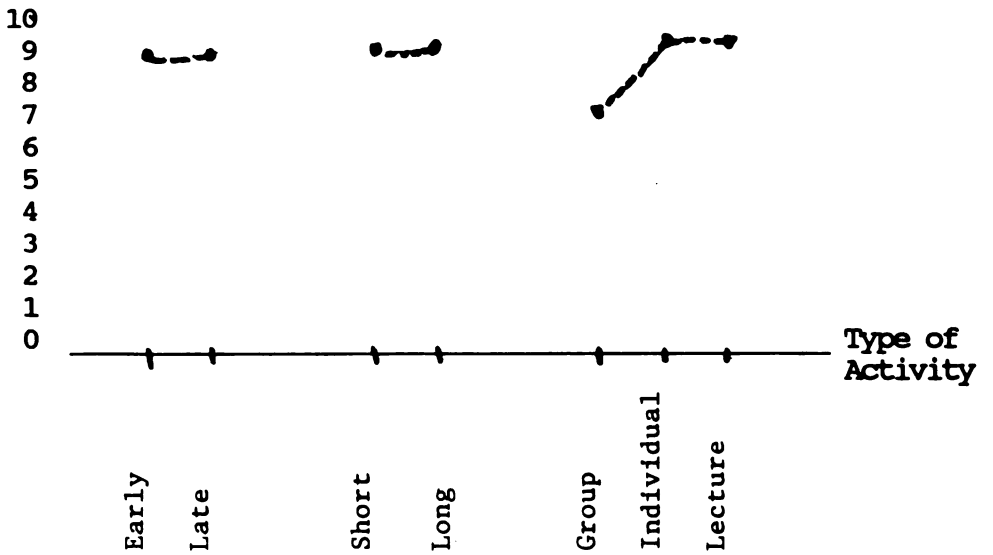
Mean Level of Attention



The observation results of student No. 6 indicated no difference in the level of attention with regard to the timing of activities. The student's level of attention was the same in early and late activities. The results indicated that there were differences in the level of attention according to the length of the activities. The student showed a higher level of attention during short activities. Finally, there were also differences in the level of attention with regard to the type of activities. The student's highest level of attention was during group work and the lowest occurred during individual activities.

Student No. 7

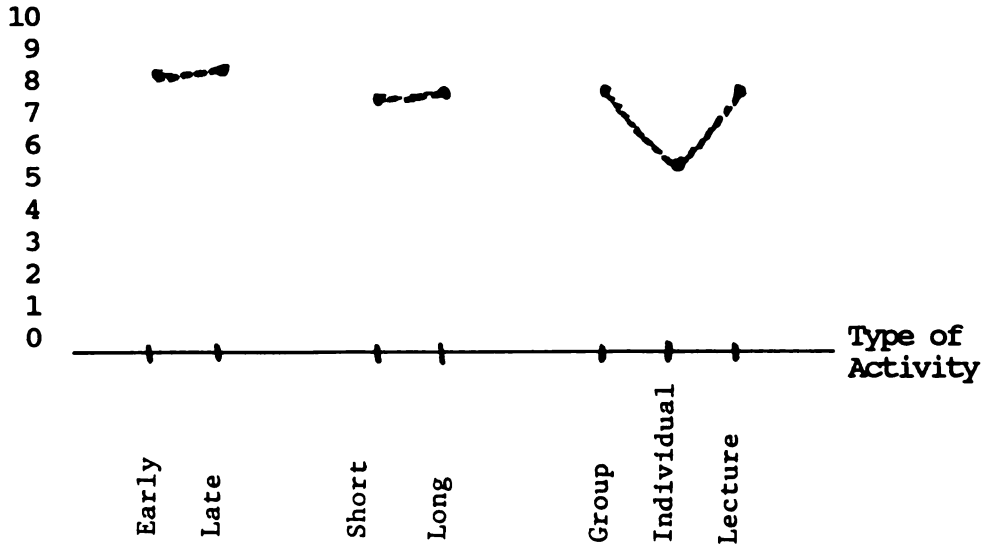
Mean Level of Attention



The observation results of student No. 7 did not show any difference in the level of attention according to the timing of the activities or the length. It showed that with regard to type of activity the student's lowest level of attention was during group work, and it was the same during lecture and individual activities.

Student No. 8

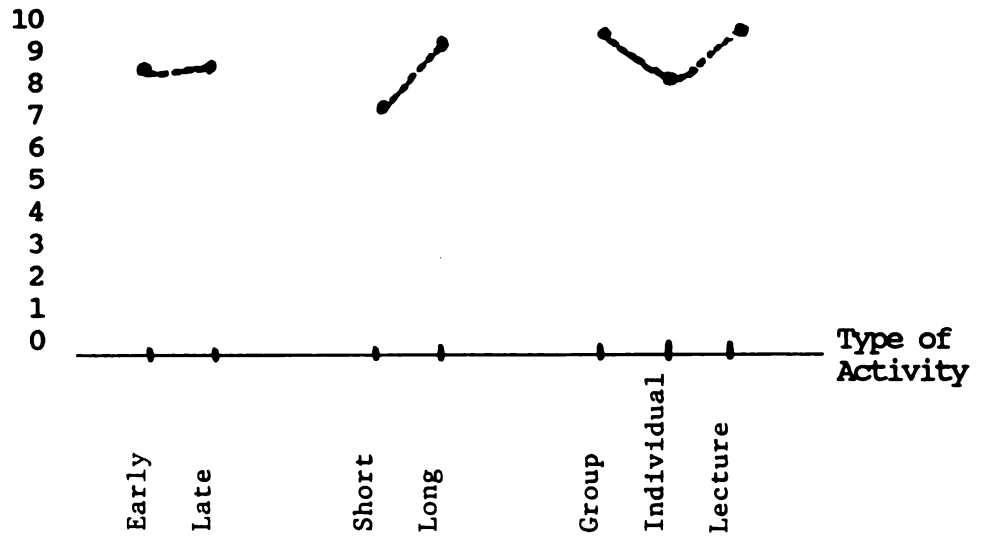
Mean Level of Attention



The observation results of student No. 8 indicated that the student showed no difference in the level of attention according to the timing of the activities. Regarding the length of the activities, the results indicated no difference in the level of attention. However, the student's level of attention varied according to the type of activity. The student's highest level of attention was in group activities and lectures, and the lowest was during individual activities.

Student No. 9

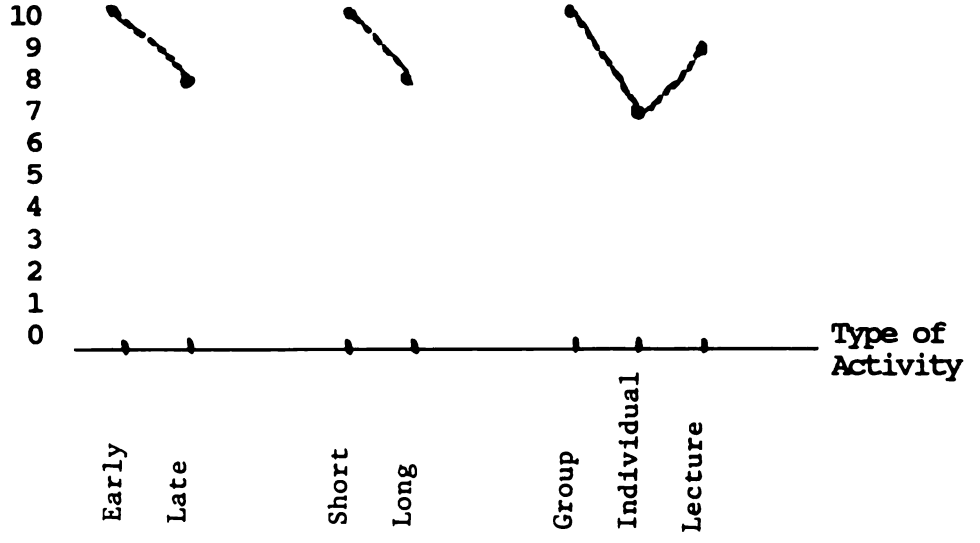
Mean Level of Attention



The observation's results of student No. 9 indicated no difference in the level of attention according to the timing of the activities. Also, the results showed that, with regard to length of the activities, the student showed a higher level of attention during long activities. There were also differences in the level of attention with regard to type of activity. The highest level was during group activities and the lowest level of attention was during individual activities.

Student No. 10

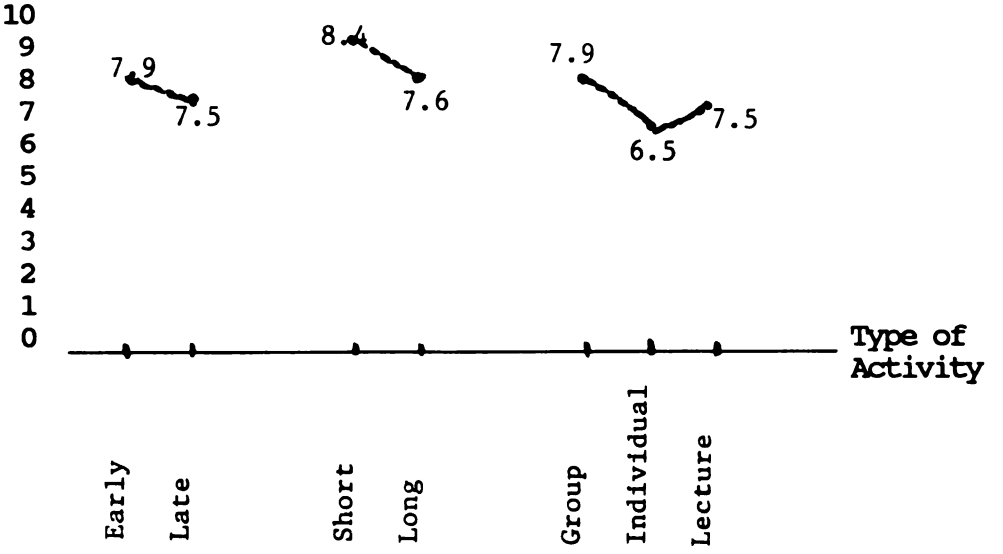
Mean Level of Attention



Observations of Student #10 indicated that the student's level of attention was higher during the earlier period of activities compared with the later. Also, there were differences in the level of attention according to the length of the activities: the student showed a higher level of attention during short activities. Regarding the type of activities, the student's highest level of attention was during group work and the lowest was during individual activities.

Whole Group

Mean Level of Attention



The data indicated that the timing of the activities was not related to attention levels. The difference between level of attention during the early time period (mean = 7.9) and the late period (mean = 7.5) was .4. However, the data indicated that there were larger differences in the level of attention between short and long activities. The mean for short activities was 8.4, and the mean for the long activities was 7.6; making a difference of .8, which seems relatively large. Regarding the type of activities, the data showed that there were differences between group work and individuals, but there were slight differences between lecture and group. The mean for the group work was 7.9, the mean for individual 6.5, and the mean for lecture was 7.4. Therefore, the difference between group and individual activities was 1.4, which was relatively large. The difference between lecture and individual activities was .9, which was also large. However, the difference between group and lecture was .4, which was considered small.

Thus the data suggested that the time period of the activity was not related to the level of attention. However, length of time was related to the level of attention. The type of activity was also related to the level of attention when comparing group and individual, or lecture and individual; but it was not related to the level of attention when the comparison was between group work and lecture.

Part 4: Summaries of the Interview Protocols

Student No. 1

Student No. 1 is a 25 years old male who is a graduate assistant in the English Language Center at MSU.

Mr. #1 indicated that it was not easy for him to tell if he was paying attention, but he also stated he was not sure what was going on in his mind when he was not paying attention. Fatigue does not affect Mr. #1. He indicated that when he was not paying attention, he was thinking about personal problems. He also indicated that he had control over directing his attention, but to a certain extent his control depended on what the teacher said. During the class he had some thoughts about other problems. Mr. #1 stated that he attended to the classroom activity sixty-five percent of the time. Concerning the validity of the study, Mr. #1 believed that the study would provide a general idea of the relationship between the level of attention and classroom activities. He also believed that the "thought sampling" questionnaire was the most effective way to measure level of attention. Mr. #1 concluded that he paid attention to lectures more than the group and individual work; he liked short activities; the time period did not affect his level of attention very much; and he believed that if the material was interesting, he could pay attention any time. Mr. #1's final grade was

3.0 and the teacher rated his level of attention on a scale of 1-3 (low to high) as 2.

In reviewing Student No. 1's interview, it was concluded that he had an average level of attention which correlated with his final grade. Level of attention was related to his achievement. Based on the student's final grade, the student's self-reported level of attention, the teacher's rating of the student's level of attention, the observer's rating of the student's level of attention, and the interview responses, a rough comparison was made.

The non-intensive self-reports (thought sampling) results were consistent with the questionnaire results, the interview responses, the teacher's judgement, and observational results.

Student No. 2

This is a female student of 26 years of age with no teaching experience, who likes to know other languages.

Miss #2 indicated that it was very easy for her to tell whether or not she was paying attention. It was also easy for her to tell what she was thinking about. Fatigue did affect her level of attention, especially during long activities. She also had control over directing her attention, especially during lecture (taking notes). Some unrelated problems entered into her mind during the class. She believed that she paid attention in class seventy-five percent of the time. She believed that this study was valid and that the "thought sampling" technique was an effective method (excluding question #5 which she felt was confusing). In general, she liked lecture, short, and early activities.

Her final grade was 3.5 and the teacher rated her level of attention at 3.

In reviewing her case, it was concluded that her final grade correlated with her level of attention. Level of attention was related to her achievement gain. The non-intensive self-report results were consistent with the following: the teacher's judgement, and observational results, and non-consistent with the questionnaire results, and the interview responses.

Student No. 3

This student is a 27 year old female who likes to teach English as a second language. She has had three years of teaching experience in the United States.

Miss #3 indicated that most of the time she was able to tell if she was paying attention; if not she was able to tell about what she was thinking. Fatigue affected her a lot, but she had almost complete control over directing her attention. Less than fifteen percent of the time she had some unrelated thoughts during the classroom activities. She stated that ninety percent of the time she was paying attention.

Miss #3 was not sure if the study would be successful in measuring her level of attention. She also was unsure about the effectiveness of the "thought sampling" technique. In general, Miss #3 indicated that she liked to work in groups and preferred early and short activities as well. Student No. 3's final grade was 3.5 and the teacher rated her attention +2.

In reviewing this case, it was concluded that her level of attention was above average and that this correlated with her final grade. The

level of attention was related to her achievement gain. Also the results suggested that her non-intensive self-reports (thought sampling) results were consistent with the following: The questionnaire results, the interview responses, the teacher's judgement, and the observational results.

Student No. 4

This is a female student of 28 years of age, who has three years of teaching experience and likes to work in a foreign countries.

She indicated that she was very sure that she was paying attention and it was possible for her to tell what she was thinking when she was not paying attention. Fatigue affected her a lot, especially during late activities. She reported having control over directing her attention. Only ten percent of the time did some other, unrelated thoughts enter her mind. These thoughts, in general, were well detailed. Miss #4 estimated that she was able to attend to the class activity ninety to ninety-five percent of the time. She preferred to work in groups, the timing of activities was important to her, and she preferred the early time period. The length of the activities was not very important. She was not sure about the validity of the study or the effectiveness of the questionnaire. Her final grade was 3.5 and the teacher rated her level of attention at 3.

In reviewing her case, it was concluded that she was a highly attentive person. Her final grade correlated positively with her level of attention. Also the results suggested that the non-intensive self-report were consistent with the following: The questionnaire results, the interview responses, the teacher's judgement, and observational

results.

Student No. 5

This is a male student, 26 years old, with two years of teaching experience. He is taking the class because it is required for his degree.

Mr. #5 indicated that it was easy for him to tell if he was really paying attention, except for a few times when he had to guess. Also, it was easy for him to talk about what he was thinking. He stated that fatigue affected his level of attention and that he had some control over directing his attention. Most of the time he was paying attention except for a few times when some personal problems distracted him.

He reported that his level of attention was appropriately focused ninety percent of the time. He believed that the study was valid and that the "thought sampling" questionnaire was effective. In general, he preferred short, early activities and group work. He was a highly attentive person. His final grade was 4.0 and the teacher gave him a 3 on the level of attentiveness.

In reviewing the case, it was concluded that his final grade correlated with his level of attention. His attentiveness level was related to the achievement gain. The results of the study suggested some differences between observational results and the interview responses. However, the data showed that non-intensive self-reports (thought sampling) results were consistent with the following: The questionnaire results, the interview responses, the teacher's judgement, and observational results.

Student No. 6

This is a married, 36 year old male, with seven years of teaching experience. He is interested in teaching a second language.

Mr. #6 indicated that he could tell whether or not he was paying attention, but it was difficult for him to tell what he was really thinking about. Fatigue affected him a great deal. He had some control over directing his attention, especially in the early activities. Some personal thoughts entered his mind during the class but they were not detailed. According to him, his level of attention was focused on the class ninety percent of the time. Mr. #6 believed that this study was valid and that the "thought sampling" questionnaire reflected what was going on during the class. He concluded that he preferred the early time period, the lecture and small group activities, and short activities. His final grade was 3.5 and the teacher rated his attention level +2.

In reviewing his case, it was concluded that his level of attention was above average. His level of attention correlated with his final grade. There were some differences between interview responses and observational results, and there were also differences between the interview results and the teacher's judgements. However, the data showed that non-intensive self-reports (thought sampling) results were consistent with the questionnaire results, and the interview responses, and non-consistent with the teacher's judgements, and the observational results.

Student No. 7

Mrs #7 is a 32 year old female with four years of teaching experience. She is interested in teaching English as a second language.

Mrs. #7 indicated that it was easy for her to tell whether or not she was paying attention, but it was not easy to tell what she was thinking about. Fatigue did not always affect her level of attention. It depended on the material. If it was interesting enough, she felt she probably would pay attention. She had some control over her attention most of the time. The thoughts she usually had during the class were related to activities and they were very detailed. She stated that she was able to attend ninety percent of the time. She believed that the study would be able to measure her attention level and that the "thought sampling" questionnaire during specific activities was effective. In general, Mrs. #7 preferred individual activities and she felt that the time period was a minor factor. She preferred long activities because they gave her enough time to work and solve the problems. Her final grade was 4.0, and the teacher gave her a 3 for her level of attention.

In reviewing this case, it was concluded that she was a highly attentive person. Her attention level correlated significantly with her final grade and so was related to her achievement gain. There was a little difference between her responses to the interview and the observational results. It was also concluded that her non-intensive self-reports (thought sampling) results were consistent with the following: The questionnaire results, the interview responses, the teacher's judgement, and observational results.

Student No. 8

Miss #8 is 24 years old. English is her second language and she likes to teach English in her country.

Miss #8 indicated that it was easy for her to tell whether or not

she was paying attention, and it was easy for her to tell what she was thinking about if she was not paying attention. Fatigue affected her a lot. She had a good deal of control over her level of attention. Miss #8 indicated that sometimes other activities entered into her thoughts, especially during individual work, but these thoughts did not occur very often. She reported that she was able to attend seventy-five percent of the time. She believed that the study was valid and that the "thought sampling" questionnaire was effective. In general, Miss #8 found that the kind of activity (material) affected her level of attention. She believed that the time period and length of the activities were minor factors in affecting her level of attention. Her final grade was 3.0, and the teacher's rating of her attention level was +2.

In reviewing her case, it was concluded that her grade was correlated to attention level, so attention level was related to her achievement gain. Also the results indicated that non-intensive self-reporting (thought sampling) results were consistent with the following: The questionnaire results, the interview responses, the teacher's judgements, and observational results.

Student No. 9

This is a 27 year old, female student with two years of teaching experience. English is her second language and she likes to teach English in her country.

Miss #9 indicated that it was easy for her to tell whether or not she was paying attention and it was easy for her to tell what she was thinking because her thoughts were mostly related to the class or personal problems. Miss #9 indicated that fatigue affected her and that

was why she preferred short activities. She had to concentrate a lot because English is not her first language. She also indicated that she had control over directing her attention unless she was extremely tired. She had few extraneous thoughts; most of the time she was involved with the activities.

Miss #9 believed that she attended to the class focus seventy percent of the time, which is above average. She believed that the study was valid and that the "thought sampling" questionnaire was effective. Her final grade was 3.5 and the teacher's judgement of her attention level was +2.

In reviewing Miss #9's case, it was concluded that her level of attention was correlated positively to her final grade. There were some differences between observational results and interview responses. However, the data showed that non-intensive self-reports (thought sampling) results were consistent with questionnaire results, teacher's judgement, and observational results, and non-consistent with interview responses.

Student No. 10

Miss #10 is a 40 year old student with ten years of teaching experience. She is interested in teaching English as a second language.

Miss #10 indicated that it was easy for her to tell whether or not she was paying attention because she was paying attention most of the time. Fatigue affected her to a certain extent. If the class activity was stimulating, fatigue had little effect. Miss #10 indicated that she had control over directing her level of attentiveness and that she did not think of unrelated material, activities, or problems during the

class. She felt that her attention was focused on the classroom activity ninety-nine percent of the time.

Miss #10 believed that the study would provide a general idea of her attention level, but the degree of validity would depend on what people considered "paying attention." The "thought sampling" method was a good method in her opinion.

Miss #10 concluded that usually the time of the activity affected her level of attention; but this was not the case in this class, because she was paying attention most of the time. She liked early, group, lecture, and short activities. Her final grade was 3.5 and the teacher rated her level of attention +2.

In reviewing her case, it was concluded that her level of attention was a minor factor in her achievement gain. There was a correlation between her grade and level of attention. However, there were differences between her interview responses and the observational results and teacher's judgement. The data showed that non-intensive self-reports (thought sampling) results were consistent with the questionnaire results, and the interview responses, and non-consistent with the teacher's judgements, and the observational results.

In reviewing the interview responses, thought sampling responses, observational results, questionnaire responses, teachers' judgement and student's final grade, it was concluded that in most cases the results of the four techniques were consistent. The data showed that only in two cases the non-intensive self report (thought sampling) results were not consistent with observational results teachers judgement and interview responses, and only in one case, the non-intensive self report was not consistent with questionnaire responses. Concerning the relationship

between attention level and final grade, the data showed that nine students showed a positive relationship between their final grades and level of attention. Only one student did not show positive relationship between final grade and level of attention.

Summary

Chapter IV presented the data and information concerning the findings of this investigation.

The chapter revealed the role and importance of the type of activities and the length of the activities on the student's attention level. The time of the activities appears to have a slight influence on the student's attention level. Also this study revealed that, for the most part, the subject's background appeared to have little influence on his or her level of attention. The one exception was age which had a significant influence on the level of attention. Also, the study revealed that level of attention had a major role in the student's knowledge gain (final grade).

Chapter V

Summary, Conclusions and Recommendations

This study was designed to investigate the relationship between the apparent attention students are paying and the amount of knowledge they acquire during TESL class activities.

Three research questions were presented in Chapter I. Question one specifically dealt with the relationship between the subjects' background experience (e.g., age, sex, marital status, experience, and reason for taking the course) and their apparent attention. Question two dealt with the level of attention during various classroom activities. Question three dealt with the relationship between level of attention and final grade.

The data for the study was gathered through the use of four instruments: questionnaires, "thought sampling" questionnaires, observations, and interviews.

Students of English 407, during Fall, 1987 at Michigan State University constituted the sample for the study.

Summary of the Findings

In the fourth chapter, data collected from the respondents who participated in the study was analyzed. The following section presents a summary of the following findings:

Questionaire Results

Subject's Background.

1. Age

The results showed significant differences in the level of attentiveness to various classroom activities in general and to group activities versus lecture in particular. There were also significant

differences in the level of attentiveness to various classroom activities based on age (P = .014) at .05 level (all statistics were analyzed at the .05 level).

2. Sex

The results did not show significant differences between the sexes in the level of attentiveness to various classroom activities (P = .347), except for attention to lecture versus individual activities (P = .026).

3. Marital Status

Overall, there were no significant differences between married and single students in their level of attention to various classroom activities (P = .0636). However, the study found a significant difference in the level of attention based on marital status during lecture as compared to individual activities (P = .028). Married students showed the higher level of attentiveness in that context.

4. Academic Classification

The results indicated no significant differences in the level of attention to various classroom activities based on the subject's academic classification (P = .296).

5. Teaching Experience

There were also no significant differences in the level of attention to all classroom activities based on the subject's teaching experience (P = .774).

6. Reason for Taking the Course (Motivation)

The results indicated there were no significant differences in the level of attention to all classroom activities based on the subject's motivation to learn (P = .962).

Timing of the Particular Activity.

1. Timing of the Lecture

The results indicated that there were no significant differences in the level of attention based on the timing of the lecture (teacher talk) (P = .7011).

2. Time of the Individual Activities

The results indicated that the differences in the level of attention based on timing of the individual activities were not significant (P = .796).

3. Time of the Group Activities

The data revealed no significant relationships between level of attention and the timing of the group activities (P = .6765).

Length of the Activity.

1. Length of the Lecture

The results showed there were no significant differences in the level of attention during lecture (teacher talk) and the length of time of that activity (P = .0782).

2. Length of Individual Activities.

The results indicated that there was a significant difference in the level of attention based on the amount of time spent on that activity (P = .031). The subjects indicated a higher level of attention in short activities than during long individual work.

3. Length of Group Activities.

The results revealed that there were no significant difference in the level of attentiveness during group work based on the length of that activity (P = .0602).

Type of Activity.

The data indicated there was a significant difference in the level of attention based on the type of activity (P = .0065). The data indicated that during group activities the attention level was the highest, followed by lecture, with the least attention given during individual work.

Length of Time of Activities in General.

The results showed a significant difference in the level of attention to various classroom activities based on the amount of time spent on the activities (P = .0491). The data showed that the level of attention was higher during short activities.

Timing of the Activities (Early or Late).

The data indicated there were no significant differences in the level of attention to various classroom activities based on the time of the activities (P = .075).

"Thought Sampling" Technique Results

Length of Time of the Activities in General.

The data showed a significant difference in the level of attention based on the amount of time spent on the activity (P = .0315). It indicated that a short activity generated a higher level of attention than long activities. The study found no significant differences between short or long activities with regard to a preference for an early period of activities (P = .835). Concerning a preference for group work, the data showed a non-significant difference between short or long activities (P = .550).

Timing of the Activities (Early or Late).

The data showed that there were no signficant differences in the level of attention based on the timing of the activity (P = .210). Concerning the preferred length of the activity, the data indicated that there were no significant differences in preference for short or long activities based on the timing of the activity (P = .605). The study also found no significant differences for preference of any type of activity based on the timing of that activity.

Type of the Activity (Individual versus Lecture).

The subjects showed a higher level of attention during lecture activities than individual activities (working alone) (P = .0429). The results indicated no there were no significant differences in the preference for short or long activities based on the type of activity.

Type of Activity (Group versus Individual).

The study found that the students demonstrated a higher level of attention during group activities than during individual activities (P = .0158).

Also the data indicated there was a significant difference between individual and group activities in preference for short or long activities (P = .0122). Students indicated that during group activities they showed less preference for short activities than they did during individual activities.

Type of Activity (Lecture versus Group).

The results indicated there were no significant differences between lecture and group activities in the level of attentiveness (P = 0.398).

The results also showed no significant difference between lecture

and group activities on the subjects' preference for short or long activities (P = .603).

Observation Results

The overall results of the observation for the whole group indicated the following:

The data revealed that the time of the activities was a minor element in determining the level of attention. The difference between level of attention regarding early and late timing of the activities was not significant. However the data indicated that there were significant differences in the level of attention based on the length of the activity. The study found that during short activities students showed a higher level of attention than they did during long activities. Regarding the type of the activities, the data showed that there were significant differences in the level of attention between group and individual activities. Also there were significant differences in the level of attention between lecture and individual activities. However, the study found no significant differences in the level of attention between group activities and lecture.

Interview Results

The overall interview results indicated the following: Eighty percent of the ten students who participated in the interviews believed that the study was valid and that the "thought sampling" questionnaire was effective.

Almost all the students (except for one) had grades that were consistent with their level of attention. Only one showed a non-significant (but positive) correlation with his level of attention. Five of the students indicated their preference for early activities.

Six students indicated their preference for small group activities. Three students indicated their preference for lecture and only one student indicated a preference for individual activities. Six students indicated that they would like short activities, with only one preferring long activities.

Conclusion

Results from several studies (e.g., Stallings, 1985; Liberman, 1980; Brophy, 1979) suggested that the amount of time students spend actively engaged in learning is positively related to student achievement gains. Also Karwait and Slavin (1981) indicated that past research has documented that classrooms do indeed differ in how time is allocated and spent and that these differences are positively, but not consistently, related to achievement. Garden and associates (1982) reported that studies of engaged rate held stronger correlation with achievement than do other time variables such as length of time spent on instruction.

As a result of these and many other studies, it has become clear that teachers influence achievement only inasmuch as they have an effect on a student's active involvement with the material to be learned. Based on this conclusion, this study addressed the variables related to instructional attentiveness. These include type of activity, length of activity, and timing of the activity during a teacher training course at Michigan State University.

The data analysis in Chapter IV revealed the role and importance of the type of activities and the length of the activities on the student's attention level. The time of the activities appears to have a slight influence on the student's attention level. Also this data revealed that there were significant differences in the level of attentiveness to

various classroom activity based on age. Concerning gender, the data indicated that level of attentiveness to various classroom activities except for attention to lecture versus individual activities was not related to the sex of the subject. the data showed that there were no differences between married and single students in their level of attention to various classroom activities, except for lecture as compared to individual activities in which married students showed higher levels of attention than single students. Academic classification also was not significantly related to level of attention in all classroom activities. Teaching experience was not related to level of attention to various classroom activities. Reason for taking the course was not related to level of attention to various classroom activities. Also, the study revealed that the level of attention had a significant role in the student's knowledge gain (final grade).

Recommendations for Future Research.

Based on the findings of this investigation, the following recommendations were made. It is felt that the following recommendations would help to improve the involvement of students with the academic task:

1. This study should be replicated in other classroom settings (English Language Centers) with a fairly large sample.
2. There should be a study to explore other variables related to classroom effectiveness such as using different kinds of material (academic, cross-sectional).
3. There should be comparative studies of more than one classroom and making use of different teachers.
4. There should be a replicated study that uses the same students and follows them through more than one term.

APPENDIXES

Appendix A

Course Title: _____

Name of Instructor: _____

DATE: _____ TIME: _____

Kind of Activity

Student Name		Frequency of Attending
1. _____	V	_____
	AT	_____
	NA	_____
	D	_____
2. _____	V	_____
	AT	_____
	NA	_____
	D	_____
3. _____	V	_____
	AT	_____
	NA	_____
	D	_____
4. _____	V	_____
	AT	_____
	NA	_____
	D	_____
5. _____	V	_____
	AT	_____
	NA	_____
	D	_____
6. _____	V	_____
	AT	_____
	NA	_____
	D	_____
7. _____	V	_____
	AT	_____
	NA	_____
	D	_____
8. _____	V	_____
	AT	_____
	NA	_____
	D	_____
9. _____	V	_____
	AT	_____
	NA	_____
	D	_____
10. _____	V	_____
	AT	_____
	NA	_____
	D	_____

Appendix B

"Thought Sampling" Questionnaire

Please mark (X) beside the most appropriate response.

1. Were you paying attention?
   a. Yes ( ) b. No ( )

2. Were you thinking about other academic classes?
   a. Yes ( ) b. No ( )

3. Would you prefer short activities?
   a. Yes ( ) b. No ( )

4. Would you prefer to work in a group?
   a. Yes ( ) b. No ( )

5. Is now a good timing for individual activities?
   a. Yes ( ) b. No ( )

6. If you have any difficulty paying attention, is it because the activity is:
   a. Irrelevant ( )
   b. Very difficult ( )
   c. Very easy ( )
   d. Not interesting ( )
   e. Other ( )

7. If you were thinking about what was being taught, were you?
   a. Repeating the material orally to yourself ( )
   b. Repeating the material, putting it in your own words ( )
   c. Relating this material to some other material ( )
   d. Labeling the material or looking for an example ( )

8. Comment: _____
   _____.

Appendix C

Time: _____

"Thought Sampling" Questionnaire

Please mark (X) beside the most appropriate responses.

1. Were you paying attention?
   a. Yes ( ) b. No ( )

2. Were you thinking about other academic classes?
   a. Yes ( ) b. No ( )

3. What is the length of activity you are in now?
   a. Short ( ) b. Long ( )

   Do you think one attracts your attention more than the other?
   a. Yes ( ) b. No ( )

   If YES, which? _____.

4. What type of work are you in now?
   a. Lecture ( ) c. Individual ( )
   b. Small group ( ) d. Other ( )

   Do you think you would pay more attention in another type?
   a. Yes ( ) b. No ( )

   If YES, which? _____.

5. If you have any difficulty paying attention, is it because the material is:
   a. Irrelevant ( ) d. Not interesting ( )
   b. Very difficult ( ) e. Other ( )
   c. Very easy ( )

6. If you were thinking about what was being taught, were you?
   a. Repeating the material orally to yourself ( )
   b. Repeating the material, putting it in your own words ( )
   c. Relating this material to some other material ( )
   d. Labeling the material or looking for an example ( )

7. Comment: _____
   _____
   _____

Appendix D

QUESTIONNAIRE

The following survey is designed to investigate your level of attention to various activities in a second language class. The survey will cover the following variables:

1. Timing of activities
2. Length of activities
3. Type of activities

Your participation in this survey will help to uncover factors of great importance in language teaching (i.e., what types of activities generate or lead to the greatest amount of attention). Your honest answer will be very much appreciated.

Please mark (X) beside the most appropriate response.

1. Age a. Under 22 ( ) b. Over 22 ( ) c. Over 33 ( )

2. Sex a. Male ( ) b. Female ( )

3. Marital Status
   a. Married ( )
   b. Single ( )
   c. Separated/Divorced ( )

4. Academic Classification
   a. Graduate ( )
   b. Undergraduate ( )

5. Teaching Experience
   a. None ( )
   b. Less than 5 yrs ( )
   c. More than 5 yrs ( )

6. Reason for taking "407"
   a. Degree requirement ( )
   b. Enjoy teacher training ( )
   c. To teach second language ( )
   d. No specific reason ( )

7. What is the length of activities you prefer? a. Short ( )
   b. Long ( )

8. What type of activity attracts your attention most?
   a. Lecture ( )
   b. Group ( )
   c. Individual ( )
   d. Uncertain ( )

9. How do you rate your general attentiveness in this class?
   a. Excellent ( ) e. Poor ( )
   b. Good ( ) f. Terrible ( )
   c. Uncertain ( )

10. Is there appropriate variation in the type of activities?
   a. Yes ( ) b. No ( ) c. Uncertain ( )

11. How do you rate the teacher's use of different types of activities to add variety to the class?
   a. Excellent ( ) d. Poor ( )
   b. Good ( ) e. Terrible ( )
   c. Uncertain ( )

12. How do you feel about working by your self (individual activities)?
   a. Excellent ( ) d. Poor ( )
   b. Good ( ) e. Terrible ( )
   c. Uncertain ( )

13. When do you pay more attention to various activities?
   a. At the beginning of the class hour ( )
   b. By the end of the class hour ( )
   c. In the middle of the class hour ( )
   d. Always ( )

14. Comparing yourself in short activities to yourself in long activities, how do you rate your level of attention?
   a. Excellent ( ) d. Poor ( )
   b. Good ( ) e. Terrible ( )
   c. Uncertain ( )

15. Comparing yourself in group activities to yourself in a lecture, how do you rate your general attentiveness?
   a. Excellent ( ) d. Poor ( )
   b. Good ( ) e. Terrible ( )
   c. Uncertain ( )

16. If you have a lecture, would you like the lecture first and the activities second?
   a. Yes ( ) b. No ( )

17. In general, how long do you like to work by yourself?
   a. Five to ten minutes ( )
   b. Ten to fifteen minutes ( )
   c. Fifteen to twenty minutes ( )
   d. Over twenty minutes ( )

18. In general, how long do you like group activities to last?
    a. Five to ten minutes ( )
    b. Ten to fifteen minutes ( )
    c. Fifteen to twenty minutes ( )
    d. Over twenty minutes ( )

19. When is the best time to practice interactive activities?
    a. In the beginning of the class hour ( )
    b. In the middle of the class hour ( )
    c. By the end of the class hour ( )
    d. Always ( )

20. When is the best time for individual activities?
    a. Early in the class ( )
    b. Late in the class ( )

21. How appropriate are the uses of the following activities?

    i. Having students report to the class?
       a. Excellent ( ) d. Poor ( )
       b. Good ( ) e. Terrible ( )
       c. Uncertain ( )

    ii. Having students talk to each other?
       a. Excellent ( ) d. Poor ( )
       b. Good ( ) e. Terrible ( )
       c. Uncertain ( )

    iii. Having students summarize to the class something they have read?
       a. Excellent ( ) d. Poor ( )
       b. Good ( ) e. Terrible ( )
       c. Uncertain ( )

    iv. Having students develop a set of instructions with steps that they have read?
       a. Excellent ( ) d. Poor ( )
       b. Good ( ) e. Terrible ( )
       c. Uncertain ( )

22. Comparing yourself in a lecture to yourself in individual activities, how do you rate your general attentiveness?
       a. Excellent ( ) d. Poor ( )
       b. Good ( ) e. Terrible ( )
       C. Uncertain ( )

23. Do you prefer the teacher to take more initiative activities?
       a. Yes ( ) b. No ( )

24. How long do you like the teacher to lecture?
    a. Five to ten minutes ( )
    b. Ten to fifteen minutes ( )
    c. Fifteen to twenty minutes ( )
    d. Over twenty minutes ( )

25. Do you like group activities?
    a. Yes ( ) b. No ( )

Appendix E

INTERVIEW QUESTIONS

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1. Did you find it possible, when asked, to tell if you were really paying attention, and to tell what you had been thinking about if you were not paying attention?

2. To what extent does fatigue affect your level of attention?

3. How much do you have control over directing your attention?

4. To what extent, other activities or problems enter your thoughts during the class?

5. How well-detailed were things (thoughts, images of things, etc.) that were going through your head?

6. How attentive were you to the academic content during the last few seconds before the tone?

7. How valid do you think this study is in measuring your attention level?

8. Do you think "thought sampling" was effective? If not, why?

Appendix F

Request for Student Participation in a
Level of Attention in Second Language Classes Study

Dear Student:

You are enrolled in "English 407" class which is one of a small group of teacher training classes chosen to participate in a study of students' levels of attention in second language classes.

The study is a preliminary survey that addresses the concept of student attention during class and attention level and selected dependent variables including knowledge acquisition.

Your participation in the study is entirely voluntary. Whether or not you decide to participate in the study will have no effect on your evaluation for the course. The course instructor will not know the names of, or be able to otherwise identify the participants. If you should decide to participate in the study, then later decide to discontinue your participation you may do so without recrimination.

The study will involve observation of your class sessions at selected times, completion of very short questionnaires at selected times during the class in which instruction will be stopped and the instructor will leave the room, one interview during the term, conducted by the researcher, and the completion of a three page questionnaire.

It is believed that the results of this study will be useful in improving second language teaching, and your participation will contribute to that effort. A copy of the findings of the study will be made available to you upon request.

Thank you for your cooperation. If you have further questions, please contact me at 355-1122.

Sincerely,

Susan Arafat
Doctoral Student
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Appendix G

Participant Consent Form

I agree to participate in the student level of attention study described above, under the conditions described above including the following:

1. My participation is voluntary and my responses will be kept anonymous. The course instructor will have no way of knowing if I participated in the study.

2. My responses will be used only for research purposes, and I will be given a copy of the report of the study by the researcher.

3. I can discontinue participation in the study at any time without recrimination.

Signature _____

Date _____

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