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A COMPARATIVE STUDY OF OVERCOMING THE DIFFICULTIES
OF READING THROUGH MULTIPLE INTELLIGENCE THEORY IN
ENGLISH PREPARATORY CLASSES AT SCHOOL OF FOREIGN
LANGUAGES AT SELCUK UNIVERSITY

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ABSTRACT

This study aims to investigate how to overcome the difficulties of reading and vocabulary teaching through M.I. (Multiple Intelligences) theory. This study also aims to show the contribution of M.I. theory to reading lessons and students' motivation. The data have been collected through the implementation of pre and post reading tests to 40 students at prep classes at Selcuk University, School of Foreign Languages.

In the first chapter, the background to the study, statements of the problems, goal and scope of the study, method of the study and limitations are presented.

The second chapter includes review of the literature. This part focuses on the definition of "Multiple Intelligences theory and Intelligences and the definition of reading and M.I.'s importance in teaching reading in prep classes.

In the third chapter, the methodology and the information about experimental and control group are given. Data analysis and interpretation of the tests and experimental study take place in the next chapter. Also, the results of the study are given through the interpretation of tables.

In "conclusion" part, the summary and findings of the study and suggestions are presented.

ÖZET

Bu çalışma çoklu zeka teorisinin İngilizce okuma derslerine katkısını ve öğrencilerin ilgi ve bölüm çeşitliliğini dikkate alarak onların motivasyonlarını arttırmadaki etkisini içermektedir. Bu çalışmadaki veriler Selçuk Üniversitesi, Yabancı Diller Yüksekokulu'nda İngilizce öğretilen hazırlık sınıflarında çeşitli bölümlerde eğitimine devam edecek olan toplam 40 öğrenci üzerinde ön ve son test içeren uygulamalar yapılarak toplanmıştır. Ve bu testlerde Independent t-testi kullanılmıştır.

Birinci bölümde, çalışmanın tarihçesi, problemin açıklanması, çalışmanın amacı ve içeriği, çalışmanın metodu ve sınırlılıkları sunulmuştur.

İkinci bölüm, literatür taramasını içerir. Çoklu zeka teorisi ve bu zeka tiplerinin tanımı, okuma teknikleri ve genel olarak eğitim ve bu teori arasındaki bağıntıyı içermektedir.

Üçüncü bölüm ise, metodoloji ve deney ve kontrol grubu ile ilgili bilgileri içermektedir. Veri analizi ve deneysel çalışmanın yorumlanması bir sonraki bölümde yer almaktadır. Çalışma sonuçları tablolar halinde de verilmektedir.

Sonuç bölümünde ise, çalışmanın özeti bulguları ve öneriler sunulmaktadır. Tezin arka tarafında ise çalışma ile ilgili bazı ekler yer almaktadır.

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CHAPTER 1

INTRODUCTION

Presentation

This chapter begins with background of the study. Then, it goes on with the aim and scope of the study. The problem statement and the hypotheses follow these parts. The next part is the significance. Limitations of the study follow the significance. The final part is devoted to the organization of chapters.

1.1. General Background Of The Study

Since language teaching and learning is a significant, life-long and tiring process, people have given more and more importance to the teaching of foreign languages. There are many reasons why learning a foreign language is inevitable and so important. First of all, learning a foreign language has a positive effect on intellectual growth. It enriches and enhances a student's mental development. It also leaves students with more flexibility in thinking, greater sensitivity to language and a better ear for listening. It also improves a student's understanding of his / her native language. It gives a student the ability to communicate with people she would otherwise not have the chance to know. It opens the door to other cultures and helps a student understand and appreciate people from other countries. It increases job opportunities in many careers where knowing another language is a real asset.

Along with the various interpretations, visible changes have taken place in the area of education that can handle the problems of language teaching. Traditionally, the human intelligence was objectively measured and reduced to a single number or "IQ" score. This states that in this traditional view of thinking people were categorized into 2 groups : (1) people who are intelligent and (2) people who are not. This traditional view of "intelligence" suggests that intelligence can be measured by short – answer tests:

Stanford – Binet Intelligent quotient

Wechsler Intelligence Scale for Children (WISCIV)

Woodcock Johnson test of Cognitive Ability

Scholastic Aptitude Test.

People are born with a fixed amount of Intelligence. Intelligence level does not change over a life time. Intelligence consists of ability in logic and language. In traditional practice, teachers teach the same material to everyone. Teachers teach a topic or “subject”. However, the theory of multiple intelligences (MI), proposed by Howard Gardner, brought new dimensions to the concept of intelligence and challenged this commonly held belief. In 1983, Howard Gardner introduced his theory of multiple intelligences in a seminal book, *Frames of Mind*. Based on his work as professor in the Harvard Graduate School of Education, his work as a psychologist researching brain injuries and his long interest and involvement in the arts, he suggested that intelligence is not a single attribute that can be measured and given number. He pointed out that IQ tests measure primarily verbal, logical, mathematical, and some spatial intelligence. Believing that there are many other kinds of intelligence that are important aspects of human capabilities, he proposed that they also include visual/spatial, bodily/kinesthetic, musical, interpersonal and intrapersonal intelligences. More recently he added naturalist intelligence to the list and suggested that there may be other possibilities including spiritual and existential. In other words, Gardner’s “multiple intelligences”. Theory states that assesment of an individual’s multiple intelligences can foster learning and problem-solving styles. Short tests are not used because they don’t measure disciplinary mastery or deep understanding. They only measure rote memorization skills and one’s ability to do well on short tests. Some states have developed tests that value process over the final answer, such as PAM (Performance Assesment in Math)and PAL(Performance Assesment in Language). Human beings have all of the intelligences, but each person has a unique combination, or profile. We can all improve each of the intelligences, though some people will improve more readily in one intelligence area than in others. There are many more types of intelligence which reflect different ways of interacting with the world. M.I. pedagogy implies that teachers teach and assess differently based on individual intellectual strengths and weaknesses. Teachers structure learning activities around an issue or question and connect subjects. Teachers develop strategies that allow for students to demonstrate multiple ways of understanding and value their uniqueness.

Up to the present, Gardner (1995) has proposed a schema of seven intelligences in *Frames of Mind* (1983) and added the last two in *Intelligence Reframed* (1999). He suggests that there are probably many others that we have not yet been able to test.

A summary of Gardner's nine intelligences is given as follows:

1 . Verbal-Linguistic Intelligence is the ability to use language effectively and creatively both orally and in writing. It means well – developed verbal skills and sensitivity to the sounds, meanings and rhythms of words. This intelligence can be seen in such people as poets, playwrights, storytellers, novelists, public speakers and comedians.

2 . Mathematical – Logical intelligence is the ability to think conceptually and abstractly, capacity, to use numbers effectively and ability to discern logical or numerical patterns. This intelligence can be seen in such people as scientists, computer programmers, accountants, lawyers, bankers and mathematicians.

3 . Musical intelligence involves the ability to produce and appreciate rhythm pitch and melody to recognize tonal patterns. This intelligence can be seen in performance musicians, rock musicians, dance bands and composers.

4 . Visual – Spatial intelligence is the ability to think in images and pictures, to sense form, space, line and shape and to visualize accurately and abstractly. This intelligence can be found in such people as architects, graphic artists, industrial design draftsman, painters and sculptors.

5 . Bodily – Kinesthetic intelligence is the ability to use one's body to express oneself and solve problems and handle objects skillfully. This intelligence can be seen in such people as actors, athletes, mimes, dancers, and inventors.

6 . Interpersonal intelligence involves the capacity to detect and respond appropriately to people's moods, feelings, motivations and intentions and desire of others. It includes the ability to work cooperatively with others in a group and to communicate, verbally and nonverbally, with other people. This form of intelligence is well developed in such people as counselors, teachers, therapists, politicians, and religious leaders.

7 . Intrapersonal intelligence involves the ability to understand the internal aspects of the self and in tune with inner feelings, values, beliefs and thinking processes. This intelligence can

be seen in such people as philosophers, psychiatrists, spiritual counselors, and cognitive pattern researchers.

8 . Naturalist intelligence is the ability to recognize and categorize plants, animals and other objects in nature. Naturalistic intelligence deals with sensing patterns in and making connections to elements in nature. Using the same intelligence, people possessing enhanced levels of this intelligence may also be very interested in other species, or in the environment and the earth. Children possessing this type of intelligence may have a strong affinity to the outside world or to animals, and this interest often begins at an early age. People possessing nature smarts are keenly aware of their surroundings and changes in their environment, even if these changes are at minute or subtle levels. This intelligence can be seen in such people as farmers, hunters, zookeepers, gardeners, cooks, veterinarians, nature guide and forest rangers.

9 . Existential intelligence is the sensitivity and capacity to tackle deep questions about human existence, such as the meaning of life, why do we die, and how did we get here. This intelligence can be seen highly developed in philosophers.

Gardner's Multiple Intelligences (MI) Theory opened a new age in education throughout the world. Educators realized that learners have all of the intelligences, but each student has a unique combination, or profile. There are many more types of intelligence which reflect different ways of interacting with the world. Educators also started to regard the diversity of the learners in their learning styles, learning potentials and appreciate the development of learning on the part of the learners.

Taking into consideration the field of English Language Teaching, the multiple intelligences theory is of great importance for second language teaching. Since reading is a crucial part in language teaching by which students are able to understand the texts and have a good vocabulary size to speak fluently and write effectively, reading is chosen as the area where the study will be carried out.

1.2 Aim of the Study

The aim of the study is to develop reading performance and vocabulary learning ability of Seljuk University preparatory school students via creating a classroom environment where all

the intelligences are regarded. In other words, this study observed that not all of the intelligences are included in ELT. Instead traditional way of teaching is used in reading and in other skills of English. In this study the relationship between MI theory and ELT is examined in more details, and ways to help teachers use different types of intelligences in ELT especially in reading texts and learning vocabulary are tried to be shown.

In order to realize the aim stated above two classes from preparatory classes at Selçuk University will be chosen.

1.3 Scope of the Study

This study is carried out in preparatory classes at Selçuk University, School of Foreign Languages(SOFL). Selçuk University, located in Konya, is one of the most crowded universities in Turkey. The preparatory classes at SOFL are obligatory for some of the departments mainly for Faculty of Economics and Administrative Sciences, Faculty of Engineering, Faculty of Medicine and Vocational School of Social Sciences and optional for some of the departments such as faculty of Communication and Faculty of Technical Education. Therefore, the students of these departments have to take the Proficiency exam prepared by SOFL at the beginning of the term. The students who get under 60 in this exam, have to attend the preparatory programme for the following two semesters. The students at SOFL receive 25 hours of instruction a week. 9 hours of instruction is for the main course lesson, which gives basic grammar of English, 8 hours of instruction is for listening and speaking, and the rest is for reading and writing.

1.3.1 The Problem

Teachers in some of English Language classes might not be employing methods of teaching based on the theory of Multiple Intelligences. (Gardner,1999) states that at any time in a teaching and learning experience, only about seventy percent of the students are responding to the methods employed. According to Christison (1997) in English as a second Language course, instructors have a tendency to focus upon visual and linguistic clues to teach language, which may reach the students who do not respond to develop their teaching methods and broaden their educational approach to help the students learn English and use it successfully.

The teachers need to reach all of the students by implementing methods, techniques, and strategies that stimulate the students' strengths, abilities and intelligence areas.

The method of teaching reading skills at SOFL disregards MI theory. The MI theory regards and gives value to the students' strengths and potentials so regarding MI theory in teaching reading strategies is of crucial importance. The traditional way of teaching reading skills ignores the students' strength. In conclusion, the instruction regarding MI theory should be integrated into teaching reading and vocabulary.

1.3.2. The Research Question and Hypotheses

The following hypotheses are tested:

- 1 . Activities and methods that activate Multiple Intelligence of students have a positive effect on understanding the reading passages.
- 2 . There is no effect of activities and methods that stimulate Multiple Intelligence on developing students' ability of reading passages and learning vocabulary.

1.4 The Significance

The above given aim of the study appears to prove the thesis, the study may have a contribution toward the reading course offered at SOFL and it may lead to research on other skills that are used in main course, listening and speaking courses. The instructional goals may be achieved more easily by making use of the theory of MI in the program of SOFL.

1.5 The Limitations of the Study

1. The first limitation of the study was the number of the students in both experimental and the control groups. Because the number of the students in each classes was restricted to 20, the number of subjects involved in the study was 40. The data obtained from a larger group of students would have more reliable results.

2. The second limitation was time factor. As each particular passage may meet for only four to six hours per week, teachers were hesitant to offer valuable class time for the study as they had a syllabus to follow.

3. The next limitation was the educational background of the groups. Although the students were from the same faculties, that is to say, they were the students of the Faculty of Economics and Administrative Sciences, Faculty of Engineering and Faculty of Technical Education, and their proficiency averages more or less the same, there were some inequalities in their educational backgrounds concerning the courses they had in high school.

4. This study was limited to the instruction by a single instructor in both groups. This may create some problems at the point of objectivity.

5. Only reading skills of students were examined. Other skills were left out.

1.6 Organization of Chapters

Chapter 2 contains the review of literature and research related to MI theory, reading and vocabulary teaching and education. The chapter starts with a general overview of intelligence, defining historical and contemporary views on intelligence. Then, Gardner's MI theory is explained. It is presented with a detailed description of eight intelligences. The adaptations and uses of MI theory and Gardner's ideas in educational and language area are presented.

Chapter 3 introduces the methodology.

Chapter 4 introduces results and analysis.

Chapter 5 introduces conclusions and further implications.

CHAPTER 2

REVIEW OF LITERATURE

2.1 An Overview of Intelligence

What is intelligence? The Webster's Dictionary (1996) defines it as "capacity for learning, understanding, and similar forms of mental activity; aptitude in grasping truths, relationships, facts, meanings, etc,".

Every society has its own ways of considering an ideal human being, such as the ancient Greeks who valued "physical ability, rational judgment, and virtuous behavior"(Gardner, 1999) while the Romans valued courage. In China, skills in music, drawing and archery were valued. In many western societies, "the intelligent person" has been valued for centuries(Gardner, 1999). The adjective intelligent has a strong impact on people, so those who are labeled "intelligent" are expected to be able to succeed not only in academic life but also in tasks or situations those people face in life. This is usually the general sense of intelligence. However, in western societies the word "intelligent" can also refer to high score results in IQ tests.

However, according to psychologists, definitions and measurement of intelligence vary: They define intelligence as:

1. the capacity to think abstractly,
2. to learn, or
3. to integrate new experiences and adapt to new situations. (Mehrens & Lehmann, 1980). One of these psychologists was Francis Galton who believed that intelligence was inherited. (Gardner, 1999) and he believed he could measure intelligence, so he developed formal IQ tests in the late nineteenth century. He was the first to institute a laboratory for the purpose of collecting evidence of people's intellectual differences. In 1906 the French psychologist Alfred Binet developed the most well-known IQ test in the world. Binet wanted to test French children in order to predict their academic potential and identify children with learning disabilities. This way, those children could be helped in order to succeed in school.

The IQ test was modified to best suit American society in the 1920's and 1930's. (Gardner, 1999) and it became known as the Stanford-Binet IQ test. The IQ test is administered especially in primary school to predict success in academic studies. Since the IQ tests were being largely used in the USA for several purposes, some restrictions were made to the use of IQ tests in schools. American school psychologists only administer the IQ tests when there is need to identify either If a child has some disability in learning or If he / she is gifted (Gardner,1999). In a handout for parents distributed by the American National Association of School Psychologists (1998), psychological tests such as intelligence tests are described as diagnostic tools used by psychologists to predict academic success. The tests are composed of “verbal” and “performance” tasks, some tasks are “puzzles and copying patterns”. Some of the tests are the Wechler Intelligence Scale For Children, Kaufman Assesment Battery For Children, Stanford-Binet and Woodcock-Johnson Psycho-educational Battery.

Other tests were created in order to measure human capabilities. Tests such as Scholistic Assesment Test (SAT) are also similar to IQ tests. Even achievement tests resemble IQ tests (Gardner, 1999).

Many psychologists claim that IQ tests are valid for predicting achievement, as they were primarily created: however, they can not determine what intelligence is or how intelligent a person is. Gardner states:

So long as these tests continued to do what they were supposed to do –that is, yield reasonable predictions about people's success in school- it did not seem necessary or prudent to probe too deeply into their meanings or to explore alternative views of what intelligence is or how it might be assessed.

Since the IQ tests predict academic success, they have been used for several purposes. For instance, IQ tests have been used to make decisions about jobs and educational opportunities.(Gardner,1999). They have also influenced teaching practises and the way learners are tested in traditional schools.

Although the IQ tests have been administered for about a century, many psychologists have questioned their validity. The concept of intelligence as a singular, static and inherited

characteristic is subject to criticism and the IQ test is being criticized. As Snider (2001) states “Gradually, the instrument that once seemed miraculous was beginning to be vulnerable to scrutiny”. Gardner (1993) adds “dissatisfaction with the concept of IQ and with unitary views of intelligence is fairly widespread.”

2.2 Gardner’s Theory of Multiple Intelligence

As mentioned before, Howard Gardner proposed a revolutionary and new concept of intelligence with the publication of his book *Frames of Mind* in 1983. His theory of multiple intelligences began to question the traditional view of intelligence and has totally changed the way intelligence is perceived. The essence of Gardner’s theory centered on the premise that there is no singular human intelligence.

The drive for investigating multiple intelligences stemmed from his experience as a teacher. He noticed that while an individual may be highly proficient in one skill or ability similar competence in another skill may be greatly lacking. A talented musician, for instance, might encounter difficulty in learning the lexicon or mastering even the rudiments of sentence structure in a foreign language, though it had been thought that the abilities to create music and to write both emerged from the same hemisphere of the brain.(Gardner, 1983).

According to Gardner, his theory is supported by numerous case studies of individuals whose mental capacities have been diminished through brain injury or disease, and who have subsequently lost one or more brain functions while retaining others. He suggests the phenomenon of idiot savants, who are mentally impaired individuals possessing strong ability in certain domains of intellect, such as the ability to hear a song and then replay it in various keys. Then, his theory asks how to account for sufferers of autism, who are sometimes capable of remembering staggeringly long series of numbers, dates and other data. The results of his investigations of such populations challenged the traditional view of intelligence as a singular construct, quantifiable by an IQ number. Rather than this, Gardner argues that intelligences must be plural, and the faculties developed by human beings originate from different cognitive processes.

According to Gardner (1983), intelligence is;

The ability to create an effective product or offer a service that is valued in a culture; A set of skills that make it possible for a person to solve problems in life; the potential for finding or creating solutions for problems, which involves gathering new knowledge.

Gardner changed the view of intelligence that the human beings have single intelligence. Intelligence has traditionally been defined in terms of intelligence quotient (IQ), which measures a narrow range of verbal\linguistic and logical\mathematical abilities. Howard Gardner (1993) argues that humans have a number of different intelligences that manifest themselves in different skills and abilities. All human beings apply these intelligences to solve problems, create processes and things. Intelligence, according to MI theory, means being able to apply one or more of the intelligences in ways that are valued by a community or culture. The current MI model outlines eight intelligences, although Gardner (1999) continues to explore additional possibilities.

Linguistic Intelligence: The ability to use language effectively both orally and in writing.

Logical-Mathematical Intelligence: The ability to use numbers effectively and reason well.

Spatial Intelligence: The ability to recognize form, space, color, line, and shape and to graphically represent visual and spatial ideas.

Bodily-Kinesthetic Intelligence: The ability to use the body to express ideas and feelings and to solve problems.

Musical Intelligence: The ability to recognize rhythm, pitch, and melody.

Naturalist Intelligence: The ability to recognize and classify plants, minerals, and animals.

Interpersonal Intelligence: The ability to understand another person's feelings, motivations, and intentions and to respond effectively.

Intrapersonal Intelligence: The ability to know about and understand oneself and recognize one's similarities to and differences from others.

Gardner developed the theory of multiple intelligences based on his study of many different people. He interviewed with and made brain research on hundreds of people, including "stroke victims, prodigies, autistic individuals, and so-called idiot savants".

According to Gardner,

- ✓ All human beings possess all the intelligences in varying amounts.
- ✓ Each person has a different intellectual composition.
- ✓ We can improve education by addressing the multiple intelligences of our students.
- ✓ These intelligences are located in different areas of the brain and can work either independently or together.
- ✓ These intelligences may define the human species.

In Bümen's (2002) words according to MI theory, all the intelligences are of the same importance and one or more are not more important than the rest. Everyone has different intelligence types and features and benefit from these differently in getting knowledge, understanding the environment, solving problems and creating products.

The theoretical keys of Gardner's MI theory are;

- ✓ Each person possesses all the intelligences. MI theory is not a type of theory for deciding the one intelligence that fits. It is a theory of cognitive functioning, and it proposes that each person has capacities in all of the intelligences.
- ✓ Most people can develop each intelligence to an adequate level of competency. Gardner suggests that everyone has the capacity to develop all the intelligences to a reasonably high level of performance if given the suitable encouragement, enrichment, and instruction.

Drawing upon findings from evolutionary biology, anthropology, developmental and cognitive psychology, neuropsychology, and psychometrics. Gardner (1983) uses eight different criteria to judge whether an ability can be counted as an intelligence.

✓ **Potential isolation by brain damage**

The intellectual capacity shows potential isolation by brain damage. It must be relatively autonomous from other human faculties and localized in the brain, then, could impede it, while not affecting other intelligences.

✓ **The existence of idiot savants, prodigies, and other exceptional individuals.**

The capacity must be evidenced in idiot savants, prodigies, and other exceptional individuals. Gardner further argues that the extent that these conditions can be linked to genetic factors as to specific areas in the brain, the capacity is more persuasively an intelligence.

✓ **An identifiable operation or set of operations.**

An intelligence must possess an operation or a set of operations integral to it, in other words, a basic information-processing mechanism that can deal with specific types of input. A human intelligence could be viewed as a “neural mechanism or computational system which is genetically programmed to be activated or “triggered” by certain kinds of internally or externally presented information”.

✓ **A distinctive developmental history along with a definable set of “end-state” performances.**

An intelligence must progress along a developmental history that results in a definable set of end-states. It begins with a patterning ability in the first year of life; next, it is encountered through a symbol system. Later, intelligences, along with their symbol system are represented in notational systems. Finally, during adolescence and adulthood, the intelligences show themselves in occupational or avocational pursuits.

✓ **An evolutionary history and evolutionary plausibility.**

An intelligence must also show evolutionary antecedents and plausibility, including capacities shared with other organism (for example, social organization). Gardner emphasized the elusiveness of firm facts, however, in regard to this criterion.

✓ **Support from experimental psychological tasks:**

Experimental psychology must support the existence of an intelligence. Such support might take the form of a study of linguistic or spatial processing, or one that focuses on the relative autonomy of an intelligence.

✓ **Support from psychometric findings.**

An intelligence must receive psychometric support. Gardner is highly critical of standardized pencil and paper tests and though interpreting psychometric findings is not always simple, they can be used to enhance his theory's credibility. For example, positive correlation between tasks that claim to assess one intelligence and less correlation with those that assess another intelligence can be considered support.

✓ **Susceptibility to encoding a symbolic system.**

It must be possible to encode the operations of an intelligence in a symbols system. Symbol systems, as language, numbers and musical notation, contribute to the usefulness of an intelligence and might well be a primary characteristic of intelligence in humans.

An intelligence had to meet all, or nearly all, of the criteria in order to qualify with Gardner's list. That is, intelligence was biologically oriented, but it was also influenced by the environment.

2.3. MULTIPLE INTELLIGENCES AND THE STRATEGIES

Howard Gardner provided a means of mapping the broad range of abilities that human possess by grouping their capabilities into eight comprehensive categories or "intelligences" (Armstrong, 2000).

2.3.1. VERBAL-LINGUISTIC INTELLIGENCE

Verbal-Linguistic Intelligence involves the development and the use of both the linguistic and the communicative competence. It includes verbal skills and sounds, meanings and rhythms of words (Armstrong, 1994). It is the capacity that makes people use lexical and grammatical items effectively and express themselves both in speech and writing as well as understanding what they hear and see (Gardner, 1993). It involves all language skills; ‘speaking, writing, reading, listening and understanding’ (Lazear, 2000). It allows people to understand the meanings of the words and the syntactic structures of sentences and to apply ‘metalinguistic’ skills to reflect on the use of the language. This ability is most shared competence and seen in ‘poets, novelists, journalists, and effective public speakers’ (Campbell, 1990).

Gardner (1983) does not consider linguistic intelligence as an auditory-oral form or intelligence as he claims that deaf people develop a gestural system for communication. By linguistic intelligence, he means the linguistic competence that can be manifested in different forms which enable human beings to communicate. He expresses his claim as follows:

...yet I have taken care not to term this capacity as an auditory-oral form of intelligence. There are two reasons. First of all, the fact that deaf individuals can acquire natural language-and can also devise or master gestural systems-serves as decisive proof that linguistic intelligence is not simply a form of auditory intelligence. Second, there is another form of intelligence, with a history of equal longevity, and autonomy of equal persuasiveness, which is also tied to the auditoryoral tract .

Yavuz and Aydınoğlu (2004) summarize the linguistic intelligence considering its place in ELT as follows:

Linguistic intelligence relates to the ability to use language effectively; it involves the selection of lexical items, the production of well-formed sentences and their arrangement in discourse for the expression of ideas and feelings. This ability also helps to acquire various languages easily. It is believed that linguistic intelligence is high in lawyers, editors, authors, poets, interpreters and orators. A

learner with strong linguistic intelligence, who is good at memorizing language items, learns best by hearing, saying, reading and writing language expressions.

Elaborating what is meant by the linguistic intelligence, Lazear (2000) describes an inventory of the core capacities comprising the following:

1-The capacity to understand the order and meaning of words is the very complex process of grasping word meanings in a given context and knowing how to shift both meaning and context by rearranging words.

2-Explaining, teaching, and learning mean being able to give accurate verbal or written instructions to another and being able to follow such instructions given to you. This capacity involves not thoroughly understanding what you are trying to explain or teach, but also understanding what another will hear and understand in your instructions.

3-Linguistically based humor deals with such things as plays on words (puns) and the plays with words (the story with the surprise ending, riddles, jokes that usually involve various ‘twists’ of the language or misunderstood words and phrases, limericks, doublemeanings, and so on). Also involved is understanding of the setting in which something is funny. The socio-cultural context of humor is important to understand; something that is funny in one situation may be an insult another.

4-It involves the development of great sensitivity to the subtle meanings of the language and the sounds and rhythms of speech, as well as an understanding of the linguistic context of the listener. It involves an understanding of emphasis in speaking to underscore the most important parts of your communication. It is the ability to use the spoken and written word to influence and motivate people.

5-The capacity of memory and recall is the ability to access verbally stored information from the brain's short-term and long-term memory, which involves a wide variety of techniques specific to an individual.

6-Possibly one of the most interesting and profound aspects of this intelligence is its capacity to engage 'metalinguistic' analysis. This unique ability is the use of language to investigate language.

As can be inferred from the afore mentioned quotation, linguistic intelligence involves the ability to acquire language by learning the speech sounds, storing and retrieving lexical items, learning to apply the (Universal Grammar) principles and parameters to the language being acquired, building up macro-language skills such as listening, speaking, reading, writing and to use language as a means of communication and interaction by developing communicative competence.

This intelligence is the easiest to develop as great attention has been given to it in schools (Armstrong, 1994). Education requires the use of this intelligence and as a result, learners have more chance to develop linguistic competence.

There have been several attempts to apply the MI theory to the foreign language teaching. As a result of these attempts, a foreign language teaching method based on the principles of MI has been designed. Berman (2003), who is concerned with the use of MI in language teaching, proposes general activities for linguistic students in ELT classes. These activities can be applied at any level or can be capitalized on for the development of additional activities by the ELT teachers. They can also be adapted for use in class to meet the needs of the language learners. The sample activities proposed by Berman (2003) are listed below:

- ✓ Group discussions
- ✓ Completing worksheets
- ✓ Giving presentations
- ✓ Listening to lectures
- ✓ Reading
- ✓ Wordbuilding games
- ✓ Storytelling

Berman (2003) assumes that storytelling is the ideal means of providing the students with the chance to develop this intelligence, since storytelling is an oral tradition and has contributed to the creation of the great epics, chants, songs, poems, fables, myths, and fairy and folk tales that have been passed on from one generation to the next.

Armstrong (1994) also gives emphasis to storytelling and states that it has been in cultures all over the world for thousands of years and seen as an entertainment during some special times in the classrooms. It should be used as a vital tool and important strategy in education. He also suggests 'Brainstorming, Tape Recordings, Journal Writing, and Publishing' strategies which allow students to share and show their thoughts, feelings, comments, and ideas with writing or speaking activities.

Among all the above activities, storytelling, which has been used to pass information from one generation to the next, is given special emphasis as it is considered to be the ideal means of providing the learners with the chance to improve this intelligence.

For the development of this intelligence, diverse strategies and classroom activities have been suggested. It is worth mentioning Campbell's (1996) ten linguistic strategies for use in education:

1. For five minutes, students do "quick writes" reacting to lesson information.
2. Students tell stories of how they apply ideas from any discipline to their lives outside of school.
3. To practice accuracy in communication, pairs of students listen to each other giving directions for an assignment.
4. To learn vocabulary for any topic, students create crossword puzzles.
5. Students debate diverse perspectives of any issue.

6. Student describe in writing the" most meaningful content they have studied.

7. In small groups, students give impromptu, "one minute presentations to each "other on topics of the teacher's choice drawn from current lessons.

8. When reading classroom material, students review each page by creating keywords or phrases for the content of that page.

9. Student's create mini-talk show programs where they pose as junior experts on classroom topics.

10. Using a word that represents a major concept, such as interdependence, students write a phrase with each letter of the word to explain its meaning.

2.3.2. LOGICAL-MATHEMATICAL INTELLIGENCE

Logical-Mathematical Intelligence is the intelligence to use numbers effectively (Gardner, 1993). It is the ability that makes people calculate measure, use logic, and solve math and science problems and affect the social sciences and humanities. It is seen in 'scientists, mathematicians, accountants, and detectives' in general (Campbell, 1990). It includes sensitivity to logic patterns and relationships, statements and prepositions, functions. 'Categorization, classification, inference, generalization, calculation, and hypothesis' testing are the process of logical - mathematical intelligence (Armstrong, 1994). This intelligence allows people to develop the capacity to recognize familiar objects in pictures and to pick them out of pictures containing many other objects that are unfamiliar and visualize and imagine these objects when they are not actually physically present. When people acquire the language, they also obtain abstract verbal symbols that stand for concepts developed as a result of one's experience with the real world. The development of these symbols serves to improve logical- mathematical intelligence (Lazear, 2000).

Yavuz and Aydınoğlu (2004) summarize the logical- mathematical intelligences in ELT as follows:

Logical-mathematical intelligence relates to the ability to use numbers and logic effectively. It helps to measure and calculate, to find solutions to problems, to understand 'cause and effect' relationships to make predictions. Mathematicians, scientists, doctors, programmers, engineers and detectives score higher in this intelligence. A learner with strong logical-mathematical intelligence is good at inductive and deductive reasoning. S/he learns best by classifying, working out relationships, and problem solving, etc.

To clarify the characteristics of this intelligence, it is beneficial to have a look at the inventory of the core capacities that comprise the logical intelligence suggested by Lazear (2000).

1-Abstract pattern recognition is the capacity to discern patterns in the environment around you.

2-The capacity of inductive is the logical thought process that moves from the part to an understanding of the whole.

3-The capacity of deductive reasoning is the logical thought process that moves from the whole to an understanding of the parts.

4-Developing your capacities to discern relationships and connections will help you sort through and make sense out of the increasingly complex data that bombard you everyday.

5-The capacity performing complex calculations is the area most of us have traditionally and probably associated exclusively with logical-mathematical intelligence.

6-Scientific reasoning is a capacity that is no way limited to pure scientific pursuits! The basic scientific method is the process of observing, judging, weighing up, deciding, and acting.

It was the concern of applied linguists to adapt the MI activities to the foreign language education. To exemplify this, the following activities for use in ELT classes are given (Berman, 2003):

- ✓ Logic puzzles
- ✓ Logical-sequential presentations
- ✓ Problem solving
- ✓ Guided discovery

Armstrong (1994) mentions that ‘Calculations and Quantifications, Classifications and Categorizations, Socratic Questioning, Heuristics, Science Thinking’ strategies make students think and talk about subjects both inside and outside the math and science areas. Their perspectives and critical thinking skills are enriched with these activities.

Diverse strategies and classroom activities can be capitalized on for the development of this intelligence. Campbell (1990) lists ten logical-mathematical strategies as follows:

1. When given a problem, students plan strategies for ways to solve the problem before attempting its resolution.
2. Students are asked to discern patterns or relationships in lesson contents.
3. When offering solutions to any problem, students must provide logical rationale to support their answers.
4. Students create or identify categories for sorting diverse data.

5. To extend classroom learning, students conduct surveys and analyze data on topics that they or the teacher have selected.

6. Working in pairs, students make up story problems involving lesson content.

7. Students engage in discussions which include higher level thinking skills, such as comparing and contrasting, providing cause and effect answers, analyzing, hypothesizing, and synthesizing information.

8. As an independent or small group project, students employ the scientific method to answer a question they have about a classroom topic.

9. Students study units focused on math and science themes such as probability, symmetry, randomness, and chaos.

10. Students use a variety of organizers to enhance logical thinking, such as outline charts, Venn Diagrams, flow charts, and mindmaps.

2.3.3. BODILY- KINESTHETIC INTELLIGENCE

Bodily- Kinesthetic Intelligence is the intelligence to use body to express ideas and feelings with great skill (Gardner, 1993). It is the ability that makes people produce and transform things by means of their hands, this intelligence includes specific physical skills; ‘coordination, balance, dexterity, strength, flexibility, and speed’ (Armstrong, 1994). People with the bodily-kinesthetic intelligence use physical skills to express themselves. It is generally used by ‘dancers, athletes, surgeons, jugglers, and craftspeople’ (Campbell,1990). This intelligence takes place in most parts and situations of the life. It enables people to act in their lives; learning to operate within the language system, dialing a number with their hands, crossing streets with their feet etc. Bodily- Kinesthetic Intelligence related to physical movement involves such things as ‘drama, mime, dance, gesture, facial expressions, role-play, body language, posture, physical exercise, and physical games’ (Lazear, 2000).

Yavuz and Aydınoğlu (2004) summarize this intelligence and its implications for ELT as follows:

Bodily-kinesthetic intelligence relates to the ability to use the body effectively. People with the dominance of this intelligence are also characterized by their dexterous use of their hands and fingers. Craftspeople, sportspeople, surgeons and dancers are said to have this type of intelligence. A learner with strong bodily-kinesthetic intelligence, who is good at physical activities, learns best if s/he is provided with opportunities for physical challenges. The Total Physical Response techniques can be catered for this type of intelligence.

Lazear (2000) describes an inventory of the core capacities that comprise the bodily-kinesthetic intelligence as follows:

1-Remember when you were a kid and you would practice rubbing your stomach and patting your head at the same time, then switch to rubbing your head and patting your stomach? This skill is sometimes called multitasking and is the capacity to learn to control voluntary body movements.

2-Some of our body movements were at one time carefully and methodically learned and practiced but are today second nature to us, such as walking, riding a bike, driving a car, and so on. Learning to control these pre-programmed body movements is one of the capacities of strengthening your bodily-kinesthetic intelligence.

3- Expanding awareness through the body is the capacity of learning to listen to and trust the body. In many ways the body is like a complex radar station that gives us invaluable feedback about what is happening in the external world; for example.

4-This capacity is establishing a strong mind-body connection.

5-Such people as Marcel Marsceau and Red Skelton perfected this capacity, called mimetic abilities, which includes capacity to mime, to role-play, and to act dramatically.

6-The final bodily-kinesthetic capacity is improved body functioning. With bodily-kinesthetic intelligence, almost more than any of the other intelligences, practice makes perfect (or at least improvement).

Campbell (1990) states strategies for bodily-kinesthetic intelligence as follows:

1. Students role play any process such as photosynthesis, making a bill into a law, solving a quadratic equation, or the earths orbit around the sun.

2. Working together, with small blocks, toothpicks, legos, or popsicle sticks, students build models of molecular chains, famous bridges, or towns in history or literature.

3. Teachers can provide quick exercise breaks with simple calisthenics, Tai Chi or yoga stretches, an active game of Simon Says, or even a jog around the playground. . .

4. In small groups, students can create large floor games that cover important concepts, being studied.

5. Student can enact simulations, such as groups representing countries with different resources to trade, or pioneers addressing the challenges of the frontier.

6. Teachers can create "scavenger hunts" as one way for students to gather information on particular topics.

7. Regardless of the content, teachers may provide manipulatives for students to use to solve math problems, create patterns for art work, build replicas of cells or systems, or make storyboards for language and writing experiences.

8. To extend classroom learning into the community, students go on field trips.

9. Students learn physical skills like juggling, dancing, balancing, rope jumping, climbing, hula-hooping, bowling, throwing, catching, or working with tools of various kinds.

10. Students pantomime what they have learned from a day's lesson.

Berman (2003) points out that the activities are the ideal way of getting students out of their seats. When the students move around the classroom, they provide effective ways of practicing and using the target language. The repetition of movements is also. Thought to be useful, since kinesthetic students learn through movements. He identifies four activities which are designed for those students who learn through kinesthetic ways. It is easy to apply these kinesthetic activities in ELT classes.

- ✓ Circle dancing
- ✓ Brain gym
- ✓ Relaxation exercises
- ✓ Craftwork

Armstrong (1994) describes some strategies such as 'Body Answers, the Teacher Theatre, Kinesthetic Concepts, Hands-on Thinking, Body Maps' carried out for those students who have bodily- kinesthetic intelligence. These strategies can be varied in many activities which make students respond to instruction by using their bodies, and bring out the performer in students and translate their knowledge from linguistic or logical systems into pure body language.

2.3.4. VISUAL- SPATIAL INTELLIGENCE

Visual- Spatial Intelligence is discovering the visual-spatial world accurately and learning to speak with visual symbols. People, who have highly visual-spatial intelligence

think in pictures, see and create images or designs with shape, color, and size (Gardner, 1993). It is the ability to perform transformations in visual view or symbols. This intelligence involves ‘sensitivity to color, line, shape, form’, and the ‘relations that exist between these elements’ and includes the capacity ‘to visualize, to graphically represent visual or spatial ideas, and to orient oneself’ appropriately in a spatial situation (Armstrong, 1994). It enriches students’ ‘mental imagery, spatial reasoning, images manipulation, graphic and artistic skills, and an active imagery. Painters, architects, sculptures, sailors, and pilots mostly use this intelligence in their lives (Campbell, 1996). The visual-spatial intelligence is the first intelligence which the brain uses, since it naturally thinks in images and pictures before attaching the words (Lazear, 2000).

Yavuz and Aydınoğlu (2004) summarize the visual-spatial intelligence in ELT as follows:

Visual-spatial intelligence relates to the ability to perceive and create forms, shapes, designs and colors. This heightens the ability to form mental images. Painters, sculptures, architects, decorators, sailors and pilots possess high visual-spatial intelligence. A learner with strong spatial intelligence learns best by visualizing concepts, using the mind’s eye, and working with pictures and diagrams.

To exemplify this ability, Lazear (2000) describes an inventory of the core capacities that comprise the visual-spatial intelligence as follows:

1- Remember when you were a kid and you would lie on you back and look up at the clouds and find animals, faces, objects, and different scenes. This capacity is called active imagination.

2- Forming mental images are the capacity to picture things inside your head. You use this capacity when you are trying to remember where you parked your car, where you last used your glasses when you can't find them, or when you are reading a novel and you create mental images of what is on the written page.

3- How good are you at following directions for getting from one place to another? Some people are never lost! Others are never found! The capacity for finding your way in space is one of the spatial skills of visual-spatial intelligence.

4- Graphic representation is the capacity to create visual illustrations to enhance communication of an idea, concept, emotion, process, or intuition. This capacity includes such things as photography, sculpture, drawing, painting, videos, and collages.

5- Another spatial capacity is recognizing relationships between objects in space. How good are you at parallel parking a car? Can you "sink" a basketball into the hoop more times than not? When playing chess or checkers, can you see the whole board and plan your next move in light of this?

6- When you are looking at an 'optical illusion' such as the classic two faces that are also a vase, or the old woman who is also a beautiful socialite, can you mentally make these images shift back and forth? This capacity is called mental manipulation of images.

7- The capacity of accurate perception from various angles is the very complex, often taken-for-granted, ability to recognize similarities and differences between objects from very different vantage points.

Berman (2003) compiles five activities for use in ELT classes for those students who use their spatial intelligence.

- ✓ Charts

- ✓ Minds maps

- ✓ Visualizations

- ✓ Diagrams

✓ Videos

Armstrong (1994) maintains five strategies designed to activate the spatial intelligence. ‘Visualization, Color Cues, Picture Metaphors, Idea Sketching and Graphic Symbols’ require students to create graphic symbols that represent the concepts to be learned and to transform their knowledge or thoughts in images and pictures. These kinds of strategies enhance students’ visual thinking.

The following are the strategies (Campbell, 1990) that can be exploited in order to enhance visual-spatial intelligence:

1. Students might experiment with imagery to mentally rehearse performing well on a test, speaking in front of the class, or successfully resolving a conflict.
2. Students create a pictorial representation of what they have learned from a unit of study such as a chart, drawing, or mindmap.
3. Working independently or with a partner, students create a visual collage to display facts, concepts, and questions they have about a recent unit of study.
4. With access to computer graphics and page-layout programs, students illustrate their lessons.
5. Students diagram the structures of interconnecting systems such as body systems, economic systems, political systems, school systems, or food chains.
6. To communicate their understanding of a topic, students create flow charts, bar graphs, or pie charts.
7. Working in small groups, students create videotape or photograph projects.

8. To work with three-dimensional activities, students design costumes or sets for literature or social studies, tools or experiments for science, and manipulatives or new classroom or building designs for math.

9. Students create mobiles or design bulletin boards.

10. To demonstrate their understanding of a topic, students use color, shape, or rebus-type images in their papers.

2.3.5. MUSICAL INTELLIGENCE

Musical Intelligence is the ability which provides people expressing and transforming their feelings, thoughts, and knowledge in musical forms (Gardner, 1993). It enables students to “recognize, create, reproduce, and reflect” on music. “Composers, conductors, musicians, vocalists, and sensitive listeners” exhibit musical intelligence (Campbell, 1996). Musical intelligence consists of “sensitivity to rhythm pitch or melody, and timbre or tone color of a musical piece” (Armstrong, 1994). Lazear (2000) uses the term “auditory-vibrational intelligence” to illustrate the musical intelligence. He believes that it is really dealing with the whole areas of sound, vibration, tones, and beats, and so on. He claims that from the neurological perspective, it is the first intelligence to develop.

Yavuz and Aydınoğlu (2004) explain how to make use of the musical intelligence in ELT as follows:

Musical intelligence relates to the ability to hear and produce pitch, rhythm, tone and melody. People with musical intelligence distinguish themselves as musicians, composers and singers. A learner with strong musical intelligence is good at picking up sounds, noticing stressed syllables and identifying diverse intonation patterns. S/he can learn a language more easily in an environment where there is music and where songs are utilized.

Lazear (2000) explains the characteristics of the musical intelligence as follows:

1- The evocative power of music and rhythm is very profound. Certain kinds of music and rhythm can calm us, energize us, and make us feel anxious, and so on. Developing an appreciation for the structure of music and rhythm and its affective qualities is one of the ways to strengthen your musical-rhythmic intelligence.

2-We have certain schemas or frames for hearing music in our minds. We make conscious and unconscious connections with various kinds of music and rhythm.

3-Sensitivity to sounds deals with "turning up" our hearing capacities and learning to process the wide variety of auditory stimuli that have an impact on us every day of our lives.

4-Recognition, creation, and reproduction of melody, rhythm, and sound comprise the capacity to repeat accurately or mimic a tonal or rhythmic pattern produced by another person.

5-The capacity for utilizing various characteristic qualities of tones and rhythm as a way to enhance and deepen communication is a powerful aspect of this intelligence.

The following are three examples of the MI activities designed to develop the musical intelligence for use in an ELT class (Berman, 2003)

- ✓ Songs
- ✓ Jazz Chants
- ✓ Background music

Campbell (1994) suggests the following ten strategies that can be made use of for the development of musical intelligence.

1. Teachers play background music to relax students or to focus their attention at various times during the day.

2. To review information, students compose curriculum songs: replacing the words to well-known songs with content information.

3. Students make their own rhythm instruments to use with curriculum songs or recitations of arithmetic facts, spelling words, or sets of roles or facts.

4. Students select a song and explain how its lyrics relate to a lesson's content.

5. For students with access to musical software, rhythmic accompaniment can be added to multimedia reports and presentations.

6. Students select appropriate background music for book reports or other oral presentations.

7. To demonstrate patterns in mathematics, nature, and the visual arts, students use musical selections that are patterned and repetitive.

8. To become knowledgeable in any subject area, students listen to and analyze pre-recorded songs about the content areas.

9. Students analyze music to understand concepts such as relationships of parts to wholes, fractions, repeating patterns, timing, and harmony.

10. Students use musical vocabulary as metaphors such as crescendo for the climax of a short story; two-part harmony for interpersonal relations; or cadence for physical exercise.

2.3.6. INTERPERSONAL INTELLIGENCE

Interpersonal Intelligence is the capacity to detect and respond appropriately to the moods, motivations and desires of others (Gardner, 1993). This intelligence includes “sensitivity to facial expressions, voice, and gestures”. It is the “capacity for discriminating among many different kinds of interpersonal cues, and the ability to respond effectively those cues in some pragmatic way” (Armstrong, 1994). There is nothing wrong with competition or individualism if they are thought in a wise and reasonable situation however, the interpersonal capacities are completely different from them (Lazear, 2000). Students with highly interpersonal intelligence enjoy working with others and enter into their inner world and understand their viewpoints (Lazear, 2000). Teachers, social workers, actors, and politicians mostly use this intelligence (Campbell, 1996).

Yavuz and Aydınoğlu (2004) summarize the interpersonal intelligence in ELT as follows:

Interpersonal intelligence relates to the ability to interact and cooperate with other people effectively. It sharpens the sense to understand how the others feel, what they intend to do. Leaders, politicians, teachers, and actors exhibit a high level of interpersonal intelligence. A learner with strong interpersonal intelligence learns best in an environment where pair work and group work activities are capitalized on and where language is used for real exchanges.

Lazear (2000) describes the characteristics of interpersonal intelligence as follows:

1-The capacity of effective verbal and nonverbal communication with others goes way beyond the simple meanings of the words we use. Think about times when someone's body language or the tone and rhythm of voice were out of synch with what they were saying.

2- The capacity to accurately read others' moods, temperaments, motivations, and feelings is a key to effective and meaningful interpersonal encounters.

3- The capacity of working cooperatively in a group deals with learning how to do your part and allowing others to do theirs for the sake of the group goal.

4- In everyday communication, we often miss what another is saying because our own internal mind chatter gets in the way. Listening to another's perspective is the capacity to listen fully and deeply to another, and to shut off temporarily the inner mental commentary, planning our comments or rebuttal, or thinking about a witty response to what is being said.

5- Passing into the life of another is the capacity to empathize with another's perspective, feelings, values, and beliefs, especially when they are somewhat foreign to our own. This capacity does not necessarily mean agreeing with the other's perspective. But it does mean understanding and appreciating the other perspective.

6- Recall times when you were part of a group effort and the final product was greater than the mere sum of the individual contributions of the various members of the group. This is called synergy (from the Greek *syn* and *ergos*), which means a "spontaneous working together." The capacity to create and maintain synergy in a group is one of the capacities of interpersonal intelligence.

Berman (2003) gives four sample activities based on the interpersonal intelligence to be used in an ELT class (Berman, 2003):

- ✓ Group Work
- ✓ Brainstorming
- ✓ Pairwork
- ✓ Peer Teaching

Berman (2003) claims that pair and group work provide opportunities for communication and co-operation. On the other hand, teachers should not force students to work in pairs or groups because their aptitudes and opinions are important in these kinds of activities.

Armstrong (1994) proposes five strategies that awaken students' interpersonal intelligence such as 'Peer Sharing, People Sculptures, Cooperative Groups, Board Games', and 'Simulations' that serve to develop a good rapport between students and provide collaborate learning.

Campbell (1996) suggests ten interpersonal strategies as follows:

1. Working in cooperative groups, students teach each other parts of a lesson. Each student is responsible for teaching only one part, while everyone learns the whole lesson collaboratively.

2. To develop the ability to resolve disputes and negotiate conflicts, students practice conflict resolution techniques with either simulated or actual problems

3. Students practice critiquing one another's work to learn how to give and receive feedback.

4. To build collaborative skills and to share each others areas of expertise, students work on group projects together, each assuming a role according to his or her- strengths.

5. Students engage in school or community service activities to develop values such as empathy, respect, altruism, and sharing.

6. To understand others and appreciate differences, students study diverse cultures, including customs, beliefs and values.

7. Use the "Think-Pair-Share" technique to engage students in reflecting upon a class topic and then discussing their thoughts with a partner.

8. To understand differing points of view, students assume various positions and debate a complex issue.

9. Students interview persons with special talents to learn about their areas of specialty as well as how to interview others effectively.

10. To learn from the expertise of others, students work as apprentices with community experts.

2.3.7. INTRAPERSONAL INTELLIGENCE

Intrapersonal Intelligence is the capacity to be self-aware and understand their inner world, feelings, values, beliefs, and thinking process (Gardner, 1993). This ability helps people understand who they are in the world. Psychologists, spiritual leaders, philosophers, and playwrights use this intelligence (Campbell, 1990). It is the “least valued” and “least understood” of these intelligences, because societies mostly support the verbal-linguistic and logical-mathematical intelligences (Lazear, 2000). Intrapersonal intelligence consists of “having an accurate picture of oneself” and “self-discipline, self- understanding and self-esteem”(Armstrong, 1994).

Yavuz Aydınoglu (2004) summarize the intrapersonal intelligence in ELT as follows:

“Intrapersonal intelligence relates to the ability to know and control oneself and his/ her talents and limits. Philosophers, psychologists, and playwrights are said to utilize this intelligence. Learners with strong intrapersonal intelligence learn best if they work on their own. They are good at developing their learning styles and doing individualized projects”.

Lazear (2000) states an inventory of the core capacities that comprise intrapersonal intelligence:

1-The capacity to concentrate is being able to bring the mind to a single point of focus and hold it there. Think about times when you really got caught up in a novel and were able to block out everything else going on around you.

2-Mindfulness is the exact opposite of mindlessness, but it is another capacity that falls under intrapersonal intelligence. So much of our lives are spent on automatic pilot, but this capacity is about training yourself to stop, pay

attention, and appreciate the minute details of even the most mundane experiences.

3-Metacognition is the activity of thinking about thinking. Do you have inner conversations with yourself? Think about when you have a problem to solve: do you sometimes talk yourself through it? When you go to the store, do you talk to yourself about things you need to remember to pick up? Do you ever analyze your thinking with the hopes of improving it? Good news! This is not early senility setting in. it is metacognition!

4-Think about the mood swings of a normal day. Do you know what things tend to bring you a high and what brings you low? Developing your capacities of awareness and expression of various feelings helps you "get a grip" on this dynamic and take charge of your feelings rather than let them run you.

5-Transpersonal sense of the self is the capacity to identify and appreciate the self that goes beyond the self as an isolated, solitary entity unto itself. Yes, we are all individuals, but that is not the whole story! We are also part of other people and they are part of us, and we are part of the universe and it is part of us!

6-There are levels within levels within levels to our thinking/ reasoning processes. Higher-order thinking and reasoning comprise the capacity to move your thinking consciously from "the facts ma'am, nothing but the facts" to an awareness of your thinking process itself to the higher-order ability to integrate learning and use it in everyday life.

Berman (2003) offers five activities that address to intrapersonal intelligence for use in an ELT class (Berman, 2003).

- ✓ Project Work
- ✓ Learner Diaries

- ✓ Reflective Learning Activities

- ✓ Self Study

- ✓ Personal Goal Settings

Armstrong (1994) offers five strategies for intrapersonal intelligence. ‘One- Minute Reflection Periods, Personal Connections, Choice Time, Feeling-Toned Moments, Goal Settings’ can help students recognize their intrapersonal intelligence. According to him, teachers need to build in frequent opportunities during the day for the students to experience themselves as autonomous beings with unique life histories and a deep sense of individuality.

Campbell (1990) suggests ten intrapersonal strategies to be used by students:

- ✓ At the beginning of a course, school year or semester, students establish personal short- and long-term learning goals.

- ✓ Students maintain portfolios to evaluate their own learning.

- ✓ Using schedules, timelines, and planning strategies, students choose and direct some of their own learning activities to gain autonomous learning skills.

- ✓ Students keep daily learning logs where they express their emotional reactions to lessons as well as share any insights they have into the content.

- ✓ Students explain why certain units of study are valuable for them both inside and outside of school.

- ✓ Students select a particular value such as kindness or determination and incorporate that value into their behavior for a week at a time.

- ✓ To enhance self-esteem, students practice giving and receiving compliments from one another.
- ✓ At least once per quarter, students pursue an independent Project of their choice spanning 2-3 weeks.
- ✓ Students write autobiographies to explain how class content has enhanced their understanding of themselves.
- ✓ Students use teacher feedback and self-assessment inventories to reflect on their individual learning, thinking, and problem-solving strategies.

2.3.8. NATURALISTIC INTELLIGENCE

It entails the ability to understand the natural world by recognizing, classifying and categorizing species found in nature such as plants, animals, and minerals (Christison, 1999). Gardner states that the naturalist intelligence is valued in many countries, both in cultures with “scientific orientation” and without it. The ability to distinguish species that are harmful or beneficial to humans is one of the skills of a naturalist person. “A naturalist demonstrates expertise in the recognition and classification of the numerous species-the flora and fauna- of his or her environment” (Gardner, 1999). People such biologists, environmentalists, ornithologists, and geologists are strong in the naturalist intelligence. The people who have this intelligence

- ✓ Collect objects from the natural world
- ✓ Observe nature,
- ✓ Do experiments in nature,
- ✓ Do gardening

- ✓ Care for pets,
- ✓ Visit zoos and botanical gardens
- ✓ Set up winter feeding stations for wild animals or birds
- ✓ Use binoculars or telescopes to study nature
- ✓ Dry flowers
- ✓ Study books about nature

Some examples of naturalists are French Jacques Cousteau, Charles Darwin, Rachel Carson, George Washington Carver, Luther Burbank, Annie Dillard and John James Audubon.

2.3.9. EXISTENTIAL INTELLIGENCE

Even though Gardner (1999) does not confirm existential intelligence as the ninth intelligence, he has discussed it in his book *Intelligence Reframed*. He states that “*existential intelligence scores reasonably well on the eight criteria*” and he adds “*however I conclude that the narrowly defined variety of spiritual intelligence here termed “existential” may well be admissible, while the more broadly defined “spiritual intelligence” is not*”. Existential intelligence is described in the words of Gardner:

The capacity to locate oneself with respect to the furthest reaches of the cosmos – the infinite and the infinitesimal – and the related capacity to locate oneself with respect to such existential features of the human condition as the significance of life, the meaning of death, the ultimate fate of the physical and the psychological worlds, and such profound experiences as love of another person or total immersion in a work of art”.

2.4. Learning Styles and Multiple Intelligences

MI has been closely linked with learning styles. In the words of Christison (1999), “*the terminology and labels used for identifying learning styles vary greatly*”. Freeman (1986) states that there are three major categories of learning styles: cognitive, sensory and personality. The first one, cognitive, is composed of: field independent\field dependent; analytic / global; reflective\impulsive and Kolb Experiential Learning Model(it focuses on how students perceive new information and then how they process it. Learners can perceive information abstractly or concretely and process it actively or reflectively) (Christison, 1999). The second one, sensory, is composed of: perceptual (auditory, visual, tactile and kinesthetic) and environmental, which is composed of physical and sociological learners. (Sociological learners are very sensitive to how individuals are grouped in the environment. They notice if they work individually, in pairs, small groups or teams (Christison, 1999). The third one, personality, is composed of: tolerance of ambiguity, right and left hemisphere dominance, and the Myers-Briggs Type Indicator. (The Myers-Briggs Personality Type Indicator(MBTI) – There are four scales involved in the MBTI – Extroversion\Introversion, Sensing and Intuition, Thinking and Feeling, and Judging and Perceiving) (Christison, 1999).

Christison (1999) describes each type of learning styles in detail in her article and she states that the perceptual learning styles are best known among all the types of learning styles. Terms such as auditory, visual, tactile and kinesthetic are well known by many educators. Christison (1999) suggests that each lesson should integrate a variety of styles.

Freeman (1986) explains that there are two similarities in all the learning style models even though theorists’ interpretations differ from one another. The common things are: “a focus on process” and “an emphasis on personality”. Their model consists of four styles:

1. the Mastery style;
2. the Understanding style;
3. the Self-Expressive style; and
4. the Interpersonal style.

According to Freeman (1986), *“learning styles are not fixed throughout life, but develop as a person learns and grows”*. This is similar to MI since intelligence is not static and it can be improved throughout the years.

Freeman (1986) claims that learning styles and multiple intelligences share some similarities. They claim that learning styles and MI should be applied in combination since they believe that each theory has some limitations. If both theories are integrated, their limitations will be minimized and their strengths will be enhanced. According to Freeman (1986),

“Learning styles emphasize the different ways people think and feel as they solve problems, create products, and interact. “MI focuses on the way human potential is shaped by different disciplines and cultures. Learning styles are concerned with differences in the process of learning, whereas multiple intelligences center on the content and products of learning”.

At the same time, he combines each intelligence with the four styles mentioned above in order to explain how the integration of MI and learning styles provides better results. He says:

In conjunction, both multiple intelligences and learning styles can work together to form a powerful and integrated model of human intelligence and learning – a model that respects and celebrates diversity and provides us with the tools to meet high standards.

As with MI and learning styles, similar work has been in the field of brain-based research, Freeman (1986) states that *“brain-based learning is derived from the physiological studies of how the brain best learns”*. The brain needs to be challenged in order for learning to take place. The instruction needs to be meaningful, relevant, and connected to mental, affective and physical experiences, otherwise learners may not remember what was taught. Another factor that should be considered in teaching/learning is that learners need “a safe and supportive environment in which to learn”. Emotions play an important role in learning especially because they activate the part of the brain responsible for long-term memory. At the same time, Freeman (1986) argues that *“each brain is unique. Genetic and environmental factors influence*

learning and the connections between cells are created by an individual's unique experiences".

According to Nunan (1991), multiple intelligences, learning styles, and brain-based education are distinct fields of study but share similar outcomes in the practical environment of the classroom". Nunan describes three schools and mentions that although teachers in each school apply one of theories mentioned above (multiple intelligences, learning styles, and brain-based education), the learning environments in all three schools are somehow similar. He says that:

In each school, we find students actively involved in their learning, teachers talking with learners and with one another to make decisions and solve problems, students learning in a variety of ways, multiple resources available, displays of students' artwork, curriculum related to interests of students, parent volunteers working with learners, and regular assessment of the students' work as an integral part of the learning.

Nunan (1991) suggests that there are six areas in which the theories overlap:

- ✓ they are learner-centered;
- ✓ teachers need to know the theories well and apply them to their own contexts;
- ✓ the students reflect about their process of learning;
- ✓ personalization of education is promoted by the theories because they connect learning with student's lives;
- ✓ curriculum and methodologies are not uniform; and
- ✓ learners are viewed and treated as individuals with unique profiles.

According to Nunan (1991), educators should not interpret the theories in a simple manner and they should not apply them as if they were “cooking recipes”. Using their terminology does not mean applying them. The theories have been explored and developed by their researchers and they, the researchers, advise that “trivial quick-fix practices” do not mean applying the theories in practice (Nunan, 1991). There is no magic formula to apply these theories. Teachers should combine their past experience with research integrating practices when applying the theories (Nunan, 1991).

Christison (1999) states that second and foreign language teachers have been paying attention to learning styles for a decade. It is challenging for teachers to know how students learn better and make L2 students aware of the advantages of using their styles to learn better. Learning styles focus on “the process of learning”, MI theory focuses on “the content and products of learning”

2.5. Language Teaching and MI Theory

Language teaching has changed immensely in order to facilitate language learning. Many changes have been made in language teaching and MI theory has also contributed to changes in ELT. Considerations about learners’ styles, and intelligence profiles contribute to shifts in English language instruction. Snider (2001) states that many methods and approaches contribute to changes in foreign language teaching due to their contribution to “*shifting the focus in the FL classroom from a teacher-centered to learner-centered construct*”. Silent Way, Total Physical Response, Suggestopedia (among other methods and approaches), all contribute to the shifts in language teaching and they “help to improve instruction for language competence in FL learners” (Snider, 2001). Snider (2001) also claims that, “*Now more than ever, procedures and texts are open to the use of new theoretical models, such as that offered by theory*”.

Since some well-known methods and approaches emphasize certain intelligences, they will be described and the changes in language teaching will be discussed in relation to MI theory.

Grammar Translation (GT) is perhaps the oldest method in language teaching. GT emphasizes the teaching of grammar associated with translation into the native language or the target language (TL). Reading and writing is mainly taught and the vocabulary is restricted to the words in the reading passages. GT is still used at college levels as pointed out by Richards and Rogers (2001). GT enhances basically the verbal/linguistic (VL) intelligence since learners work with reading and writing most of the time as well as memorization of grammar rules and vocabulary.

During the 1950's, the Audiolingual Method (AL) was developed. The method is based on behaviorism, so habit formation with memorization of dialogues and drilling are practiced. Exposure to spoken form of the target language is prior to written form. The teacher's role in AL is "*central and active*" while "*learners play a reactive role by responding to stimuli, and thus have little control over the content, pace, or style of learning*" (Richards & Rogers, 2001). Like GT, VL is the intelligence mainly enhanced in AL through the emphasis on the memorization of dialogues, and practice of skills like listening, speaking, reading and writing.

In the words of Richards and Rogers (2001), "*the period from the 1970s through the 1980s witnessed a major paradigm shift in language teaching*". Grammar was no longer the core of language learning/teaching. Communication was the aim of teachers and learners. Methods such as Total Physical Response (TPR), the Silent Way (SW), Community Language Learning, and Suggestopedia were developed. These methods were "*developed around particular theories of learners and learning*" not from a theory of language and some of them were developed by a single person.

James Asher developed the TPR method and he believes that learners are able to produce language orally after being able to respond physically to commands just like children do when they learn their native languages. TPR promotes a non-stressful environment to facilitate learning. Although the teacher is responsible for making most decisions in the classroom, his/her role is mainly to provide opportunities for learning (Richards & Rogers, 2001). Being active listeners and performers are some of the roles of learners as well as monitoring their own learning. Two intelligences are enhanced in TPR, the bodily/kinesthetic associated with verbal/linguistic because learners respond to language input by moving and using their body (Berman, 2003).

Silent Way, which was developed by Gattegno, pays attention “to accuracy of production of both the sounds and structures of the target language from the very initial stage of instruction” (Celce-Murcia & Rosensweig, 1991). Learners are required to be responsible for their learning and to be as independent and autonomous as possible. Teachers usually use the TL once and learners should develop their knowledge of the TL by paying close attention to the material presented and drawing conclusions (Richards & Rogers, 2001). Several intelligences can be enhanced in Silent Way. Verbal\linguistic is present when the listening and speaking skills are practiced. Self-correctness, self-awareness, and the “inner-criteria” help enhancing the intrapersonal intelligence. Spatial-visual is practiced with the color cards and Cuisenaire rods while the bodily / kinesthetic intelligence is enhanced by manipulating physical objects and using gestures / pantomime. Problem solving and inductive learning enhance the LM intelligence. The IR intelligence is enhanced through working cooperatively.

Community Language Learning (CLL) is a method developed for teaching second and foreign languages by Charles A. Curran (1976). It is based on Carl Rogers’ (1957) “humanistic client-centered learning” (Celce-Murcia, 1991). The teacher is “the counselor”, the student is “the client”, and the interaction between them is through the learner’s native language at first, which is translated to the TL by the teacher and repeated by the student. When the student is able to say the sentence fluently, the sentence is recorded for further practice such as achieving a satisfactory level of pronunciation (according to the student’s wish). The teacher stands behind the learner and this technique is called “human computer” since the computer (teacher) can be turned on or off. (Celce-Murcia, 1991). CLL supporters stress its benefits to learners since the learning process is learner-centered and humanistic (Richards & Rogers, 2001). Some intelligences are enhanced in CLL: the VL through speaking and listening activities; the IR through interaction among teacher/student, student/student and groups; and the IA through encouraging reflection and self-esteem.

Suggestopedia claims that music contributes to language learning. Music and musical rhythm are important components of Suggestopedia (Richards & Rogers, 2001). According to Berman (2003), Suggestopedia creates an excellent “learning

state” which promotes successful learning. Suggestopedia appeals to those learners whose musical intelligence is strong. The use of music promotes better learning according to Lozanov. The intrapersonal intelligence is also enhanced in learners since there is an attempt to establish personal relations, develop self-esteem and self-satisfaction (Richards & Rogers, 2001). Since the decoration and classroom arrangement is considered in Suggestopedia, the spatial/visual intelligence is present as well. Furthermore, VL intelligence is enhanced when memorization, reading and listening activities are done.

Communicative Language Teaching is an approach that considers that a language is learned not for simply mastering structures but for achieving communicative proficiency (Richards & Rogers, 2001). CLT does not prescribe specific procedures, or materials to be used; however, CLT teachers have used some materials such as realia, authentic materials (maps, ads, newspapers, pictures, charts) and textbooks, which were designed for a CLT class. Variety in materials is encouraged in CLT and “materials thus have the primary role of promoting communicative language use” (Richards & Rogers, 2001). CLT enhances the verbal-linguistic intelligence when the four skills are used in communication among learners. It also enhances the interpersonal intelligence since learners use the TL to interact and solve problems together. Problem solving appeals to learners whose logical / mathematical intelligence is strong and it helps other learners develop their LM intelligence as well. CLT can enhance all the intelligences depending on the materials and techniques teachers choose for their learners.

Besides the methods and approaches described above some others can be considered in promoting changes in language teaching; the Natural Approach, Cooperative Language Learning, Content-Based Instruction, and Task-Based Language Teaching. Each of them contributed in different manners.

2.6. Factors Influencing the Development of Intelligences

MI theory states that intelligence can be improved by the individual so there are some factors which affect the intelligence development positively or negatively. These factors are biological factors which affect intelligence 25 % and social competence which has an influence on intelligence about 75 %.

Biological factors refer to one's hereditary characteristics and factors affecting the bodily development throughout pre, while, and post pregnancy. For instance, the baby of a drug/addicted mother will naturally be affected badly during the above periods. Therefore, biological development may be hindered at the very beginning of an individual's life.

Social Competence, which has the highest rate of influence, is another factor in the development of Multiple Intelligences. Social competence is made up of many parts all of which are interrelated with each other such as motivation, health, social skills, quality of teaching, prior knowledge, family support attitudes, beliefs and background knowledge (Borich, 2000).

If improvement of some of the intelligences such as musical, kinaesthetic, natural etc are hindered due to the personal beliefs, religion or social conventions, the person will not have the chance to reveal what is given to him or her. For instance, If music is considered against religion by the family, we can not expect this child bringing up in this family to show his or her musical intelligence.

Someone who is brought up in a village has more chance to develop his or her naturalistic intelligence when compared to someone living in a big city full of big buildings.

Families may force their children to choose jobs according to their own tastes. Occupational choices of families usually base on financial worries. In a country like Turkey where there is economical inconsistency, families try to direct their school children's energy mostly into lessons which will bring them money and status in the future.

A child may have to work due to financial position of his family and this will influence his school life, his motivation etc... Probably, he will have to give up his school life and not have the chance to improve most of his intelligences.

Unexpected experiences can change someone's life. A student with bodily – kinaesthetic intelligence may be very successful in different activities such as sports, various branches of art or has the possibility to become a skillful operator. Nevertheless, an unfortunate accident may obstruct his progress.

2.7. USING MI IN THE CLASSROOM

Teachers are aware of the fact that every classroom is full of students who are different from each other in many different ways. Each student comes from different social, economic and cultural backgrounds; each one has different areas of interests, different ways of expressing themselves, different strengths, and different weaknesses. Now the teacher is being asked to be aware of the fact that each student also has his own individual intelligence profile. It is clear that all of these variables can affect the student's learning process, but "How should the teacher face such a big diversity in the classroom?". Traditionally, teachers have tended to treat students as homogeneous groups, presenting the same materials to them all the same-with no considerations of their style differences- and expecting the same answer at the same time limit, from them all. They have expected their students to absorb the knowledge presented to them by the teacher. They have used language and logical- mathematical analyses, very strongly. Therefore, most knowledge is presented for learning through an extremely limited methodology and the acquisition of that knowledge is in turn evaluated through rote tests, and then the highest scores, naturally, go to those students who show the greatest ability in memorization.

Teachers are aware of their classes and their students. They are aware that they should know about their students in order to invest more effectively in the teaching-learning process. Definitely, it is not that easy, or even possible, to get to know their students' capacities and their abilities completely. Thus, Gardner's MI theory could be used as an initial step to investigate the diversity which exists in every classroom, to

find out more about the learners strengths and weaknesses related to their learning processes.

Gardner' theory has several implications for teachers in terms of classroom instruction. Gardner states that all the intelligences are needed to productively function in a society. Therefore, teachers should take all these intelligences equally important. This is radically opposite to the traditional view of education which gave linguistic and logical-mathematical intelligences a hundred percent credit. In MI educators recognize a broader range of talents and skills. One other implication of MI for teachers is that they should structure the presentation of material in a style which engages most or all of the intelligences in their learners. This kind of presentation not only excites students about learning, but it also allows a teacher to reinforce the same material in a variety of ways, by activating a wide range and assortment of intelligences. Teaching in this way facilitates a deeper understanding of the subject material as a result of establishing and modifying synaptic connections between cells and different areas of the brain.

As was said before, people are born possessing the eight intelligences, only in different proportions; therefore, students will come into the classroom with different sets of interests. They will have their more developed and less developed intellectual styles. The more developed intelligences will present their stronger manners of learning, or learning styles. Many learning styles can be found in the same classroom. To accommodate every lesson to all of the learning styles is an ideal which is sometimes impossible to reach. Nevertheless, the teacher can find out his students' learning styles and show them how to use their more developed intelligences to assist in the understanding of a subject in which they normally employ their weaker intelligences.

Broadly speaking, teachers have developed four ways of using MI in the classroom:

- ✓ *MI is used as a tool to help students develop a better understanding and appreciation of their own strengths and learning preferences. Teachers adapt the language and accompanying activities to suit the needs of the language learners in their classes. There are a big*

number of activities and equipments to help the teacher in this mission.

- ✓ *MI is used as a tool to develop a better understanding of learners' intelligences: MI provides a structured way of understanding and addressing the diversity that ESL instructors often encounter in the classroom.*
- ✓ *MI is used as a guide to provide a greater variety of ways for students to learn and to demonstrate their learning: when students' strengths are identified this can make them more receptive to nontraditional learning activities and can give students successful experiences that could make them more confident. As learners and teachers work together, intelligences can emerge naturally through partner interviews, preferences grids and needs assessments. Although, at least, some teachers have encountered initial resistance to this process of describing intelligences among students whose culture or educational background emphasize more traditional modes of teaching and learning. In this case, if the students have their linguistic and logical-mathematical intelligences more developed than other intelligences.*

When multiple activities are available, more students can find ways to participate in and take advantage of learning and language acquisition opportunities. With an MI curriculum, students become aware that different people have different strong and weak points and that each person has a substantive contribution to make. For example, in a project-based learning, one learner might feel confident about planning, another prefer to do writing, and a third might feel able to present the project to the whole class.

- ✓ *MI is used as a guide to develop lesson plans that address the full range of learner needs: An MI informed reading lesson may begin with pre-reading followed by in-reading and finally post-reading. The goal is not to teach only to specific intelligences or to correlate*

intelligences with specific activities, but rather to allow learners to employ their preferred ways of processing and communicating new information (Cohen, 1990). Teachers, using this type of lessons, report that learners become more engaged in and interested about reading as they gain greater understanding of material when they express what read in ways they are more inclined as their learning styles (Richards and Rodgers, 2001).

In conclusion, learning and intelligences remind the belief of constructivists who think that learning conditions are both internal and external. Internally, learning depends on the stages of cognitive development. It can be taken as the growth in the mind and growth in the nervous connections. Externally, social factors have determined influence on learning, which again add to the network of connections in the brain.

Gardner in his MI theory extends the meaning of learning and intelligence from a unitary body, to a multifaceted whole. He believes that potentially all children are born with undeveloped versions of the eight types of intelligences. These intelligences are fed and nurtured by social factors. The variations in the amounts of emphasis on these factors in differing societies bring about the changes in the strengths and weaknesses of these intelligences in the people of differing societies. That is why people in some cultures are strong in some intelligences, and not that strong in some others depending on the amount of emphasis spent on those intelligences.

These social factors have biological modifications or changes in the brain as the strength in the types of these factors bring about more connections in specific areas of the individual's brain. These connections are taken as equal to learning. The stronger the influences are, the more are the connections. Also, the more the variety of the influencing factors are, the more places in the individual's brain are engaged. The more excitatory channels one has, the more the number of connections in his brain are. As a final result, the better is that individual's learning.

2.8. READING

In recent years, reading has been considered to be a critical skill, especially in academic oriented classes for which students have to do extensive reading to pursue their studies successfully. The major interest in reading comprehension has become reading strategies due to the research evidence which reveals that successful readers differ from the less successful ones mainly in their strategic approach towards the text they are reading. Therefore, helping readers employ effective strategies is considered to be an essential component of reading classes.

2.8.1. The Role of Reading in Foreign Language Learning

A central issue in EFL and ESL instruction has recently been the theory and practice of reading comprehension. Such a great emphasis on this skill has emerged as a result of the recognition of the significance of reading for people who learn English as a foreign or second language. Carrell (Carrell, Devine & Eskey, 1988) claims that it can easily be understood that “reading is the main reason” why students all over the world learn a foreign language.

Without a doubt, the role of reading comprehension in EFL and ESL settings has gained increasing importance over the years. Reading is not considered as an adjunct to speaking skills as it was during the 1970s. Instead, it is today seen as a very important skill by itself. In fact, as Carrell (Carrell, Devine & Eskey, 1988) claims

“... without solid reading proficiency, second language readers cannot perform at levels they must in order to succeed”.

Carrell further suggests that reading comprehension is a critical skill especially in ESL settings where the students have to do extensive reading in the target language. This view indicates the necessity of focusing on reading comprehension in EFL/ESL situations especially with regard to the students who learn English for academic purposes.

Grabe (Dubin, Eskey & Grabe, 1986) suggests reasons why the reading should be emphasized in academic settings. The first reason derives from the notion that

“reading is learning” and that reading extensively helps students develop their writing skills. This view serves to emphasize that “skillful reading can accelerate language learning (Cohen, 1990). The second reason why reading comprehension should be of greater concern is closely related to research evidence demonstrating that the ESL students at universities think that reading is the most important skill for them (Devine & Eskey, 1988). Another reason relies on the notion that EFL learners should develop fluent reading abilities which will let them process a text rapidly just like a native reader can do by using the full range of reading strategies. This view can be considered as an objection to the assumption that student will “just acquire reading” in the course of the language learning process since it is believed that if students are not provided with effective reading strategies, they will acquire bad habits which will result in inefficient reading. Finally, all university students studying in EFL or ESL contexts, need to read extensively in the target language. One direct result of these factors is the necessity of supporting reading comprehension through instruction to help students continue their academic studies successfully. In order to do this, it is essential that the nature of the reading process be fully understood.

2.8.2. The Reading Process

Eskey defines reading simply as a way of “making sense of the world” as it is mainly a cognitive process during which readers try to relate the new information presented in the text to their background knowledge, also called the “theory of the world” (Eskey, 1988).

During this process of relating the new information to their theory of the world, readers utilize the information presented in the text and make it a part of their cognitive structure, an operation during which the brain employs some processes in order to utilize the information in the cognitive structure. Considering the research on reading in the first language, Goodman (Devine & Eskey, 1988) suggests five processes that the brain is responsible for while reading: recognition, confirmation, correction and termination.

Recognition is the first step where the brain recognizes a graphic display and then initiates the reading process. The second step, prediction, takes place when the

brain looks for” order and significance in sensory input” and as a result, when it makes anticipations as the reading progresses. The third, confirmation with the input presented. Correction occurs when the brain starts to reprocess as a result of the disconfirmations or inconsistencies. In general, termination emerges when the task is completed. However, it can also occur when the reader cannot construct the meaning fully, when the text is uninteresting or the content is too familiar or when it is not appropriate for the purpose (Devine & Eskey, 1988).

There has recently an increasing interest in how readers respond to written material when reading in the second language. Eskey argues for the importance of two sub-processes of the reading process: identification and interpretation. The former refers to the rapid and accurate understanding of “what the text says”. Identification is mainly decoding during which the printed form is changed into the language and relies on the mastery of the language. The latter, explains the process of making sense of the information presented in the text; that is, reacting to it by using their background knowledge and by “negotiating a meaning” with the printed language. Devine & Eskey also emphasizes the importance of both identification and interpretation in making sense of the written material. This next part presents a discussion on the three models, namely the bottom-up, top-down and interactive, which have been suggested for reading in the second or foreign language.

2.8.3. Models of the Reading Process

Reading is said to be a complex process. Although researchers have tried to account for the nature of the reading process, no satisfactory theory has been developed. This is due to the fact that reading is a cognitive process during which the brain involves in carrying out most of the tasks, and how the brain works is not completely known (Celce-Murcia, 1991). Researchers have been trying to find ways to help students improve their reading abilities in second languages (Grabe, 1986). Thus, various reading models have been suggested to explain the nature of second or foreign language reading.

2.8.3.1. The Bottom-Up Model

The first and the oldest of the three models which will be described is the bottom-up model. Goodman refers to this model as the “common sense Notion” (Eskey & Grabe, 1986). In this approach, reading is meant to be a process of decoding; identifying letters, words phrases, and then sentences in order to get the meaning. According to Eskey in this model, the reader reads “by moving his eyes from left to right across the page,” (Eskey & Grabe, 1986) and he or she first identifies letters, then combines these letters to form words, then gradually combines the words into phrases, clauses, and sentences.

Such a view, however, raises as many questions as it answers. The bottom-up model suggests that a word will be recognized after the reader assembles it by combining its letters. Nevertheless, a reader can read a word without understanding its meaning. Moreover, if the reader decodes each letter separately to form words, phrases and sentences, this may make reading too slow to understand the information presented in the text (Nunan, 1991). Another objection to the bottom-up theory of reading relies on the research showing that “in order to assign a phonemic value to a grapheme it is often necessary to know the meaning of the word containing that grapheme” (Nunan, 1991). What is more, research done by Goodman and Burke (Nunan, 1991) proved that decoding is not enough to explain the reading process. A process known as miscue analysis showed that deviations from the actual words of the text made by the readers during reading aloud were proved to be acceptable in terms of semantics. This would seem to suggest that although readers did not decode the letters to form words in some instances, they were able to make sense of the text.

2.8.3.2. The Top-Down Model

The shortcomings of the bottom-up model generated the emergence of the top-down model of reading. This model advocates “the selection of the fewest and most productive elements from a text in order to make sense of it” (Celce-Murcia, 1991) and views the reading process as an active “psychological guessing game” (Devine & Eskey, 1988). Top-down processing rejects the notion that identification of letters to form words, and the derivation of meaning from these words is efficient reading. On

the contrary, it assumes that efficient reading requires the readers to make predictions and hypotheses about the text content by relating the new information to their prior knowledge and by using as few language clues as possible. It is further assumed that the readers can check whether the hypotheses are correct or not by sampling the text.

The top-down model is influenced by schema theory, which emphasizes the importance of the reader's background knowledge in the reading process (Devine & Eskey, 1988). According to this theory, in order to comprehend a text, readers make use of both the text and their background knowledge. Therefore, interaction of the background knowledge and the text is essential for efficient reading. Carrell (Devine & Eskey, 1988) states that "the process of interpretation is guided by the principle that every input is mapped against some existing schema and that all aspects of that schema must be compatible with the input information". This prevents the readers from decoding every single symbol and word while reading a text.

Stanovich (Nunan, 1991) criticizes the top-down model by arguing that making hypotheses about what would take much more time than decoding does. Eskey (Eskey & Grabe, 1986), although acknowledging that this model has made great contributions to the development of an efficient reading theory, believes that the top-down model underestimates the importance of the necessary bottom-up decoding skills for the readers.

2.8.3.3. The Interactive Model

The fact that both of the reading models described above have certain flaws has led to the emergence of the interactive model. This model proposes two types of interaction: the interaction between the reader and the text, and the interaction of the bottom-up and top-down processing skills. The former emphasizes the importance of the readers' world knowledge because it implies that the readers assign meaning to the written material by using their background knowledge. The latter implies that both the identification skills presented in the bottom-up model and the interpretive skills of the top-down model are seen as critical for the reading process and thus, should both be used to understand the text better (Cohen, 1990).

The interactive approach seems to overcome the deficiencies of both the bottom-up and top-down models because it assumes that “deficiencies at one level will be compensated for at another” (Nunan, 1991). Nunan suggest, good readers use simple bottom-up decoding skills so successfully that these skills are performed automatically and are used in harmony with the top-down processing skills. Grabe (1991) also argues for the interaction of top-down and bottom-up levels of processing as he believes these two are complementary in directing the reader towards fluent and efficient reading in the foreign or second language reading. How the reading process is viewed in the interactive reading theory is summarized in Figure 1:

Reading

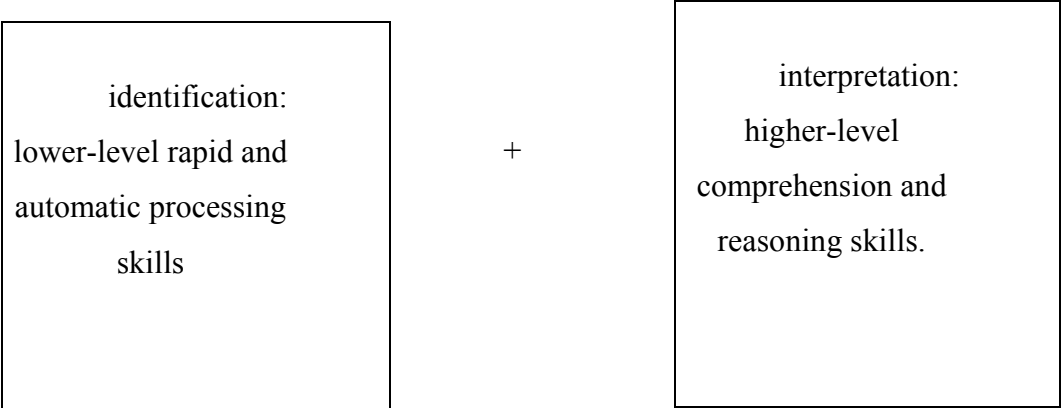


Table 1. Relationship between the bottom-up and top-down levels of processing in the interactive theory of reading.

Rusciolelli (1995) states that good readers are able to develop an efficient interaction with the text by using their already existing knowledge and experience in order to understand the new information. They also clarify the part that they have difficulty in understanding using other ideas and linguistic clues that are present in the text and finally, they fit their reading style into their purpose in reading that particular text. Readers need to develop efficient strategies in order full comprehension to take place.

In the rest of this section, the nature of the reading strategies, how they promote a better reading ability and the related research will be discussed.

2.9. Definition of Reading Strategies

Reading strategies have been the main focus of investigation of reading research since the 1980s (Grabe, 1991). A complex process like reading requires readers to develop efficient strategies in order for full comprehension to take place. As mentioned previously, using appropriate strategies is especially important in EAP settings where reading is of primary importance and where students must do extensive reading on various topics. Carrell (1988) suggests that “EAP readers must develop the strategies and tactics necessary for coping with the demands of academic reading”. Devine and Eskey (1988) support this view, suggesting that the acquisition and development of good reading strategies should be the major aim of a reading program.

Reading strategies, the resources readers use in order to make sense of the written material, refer to “the mental operations involved” (Barnett, 1988) when readers approach and process a text effectively. Developing efficient reading strategies is considered critical for a more proficient reading comprehension in the second language. Research evidence suggests that efficient reading is not only determined by proficiency in the target language but also by effective use of strategies (Carrell, 1988).

The view that suggests using effective strategies results in better reading performance is supported by research evidence (Cohen, 1990). A study done by Cohen (1990) demonstrated that the learners who received strategy instruction on word guessing became better problem solvers when encountering an unknown word. Another study done through semantic mapping and experience-text-relationship method argues for the positive effects of strategy use in reading comprehension. In another study, Carrell (1988) investigated the effects of strategies related to the text structure of a text and found out that using strategies to identify text structure helped learners recall the text better both in terms of main ideas and the supporting ones. The conclusion drawn out from Carrell (1988) study is that in order to be a proficient reader being able to read the printed language is not enough; what is needed to make sense of that printed language is the use of effective reading strategies.

2.10. Classification of Reading Strategies

The names given to different type of reading strategies vary according to different researchers although they have parallel meanings. Barnett (1988), for example, classifies reading strategies into two: text-level and word-level strategies. Among text-level strategies are relating the text to one's world knowledge, making predictions on the text content, relating the titles and illustrations/pictures to the text, setting a purpose for reading, skimming for the gist and scanning for specific information. The reader using such strategies treats the text as a whole and this is why these are also called "general comprehension" , "global" , and "main meaning line" (Oxford, 1993) strategies.

The other category, word-level strategies, as the name suggests, are more related to the smaller parts of the text, particularly the words in the text (Oxford, 1993) and they include contextual guessing, guessing the meaning from the grammatical category, using word families and word formation rules to understand the meaning of a word. Since the readers employing these strategies do not usually take the text as a whole but deal with the words mostly, Oxford (1993) calls them as "local linguistic" and (Carrell, 1988) as "word-related" strategies.

Although word- and text-level strategies seem diverse, they are complimentary since research on reading strategies demonstrates that good readers make use of both word-level and text-level strategies; former implying a bottom-up and latter referring to a top-down approach (Barnett, 1988). This seems to correlate with the current interactive reading theory which suggests both simple decoding (bottom-up) and higher cognitive (top-down) processing levels are important in successful comprehension of a text.

Apart from the above classification, which divides the strategies into two as word –and text-level, reading strategies are also categorized as metacognitive and cognitive, regardless of their being word-level or text-level in the second language reading literature (Carrell, 1988).

2.10.1. Metacognitive Reading Strategies

Metacognitive reading strategies refer to a learner's overall understanding of the cognitive processes taking place in reading. Use of metacognitive strategies requires both knowledge of the strategies that the reader employs to learn from the text in hand and the control which refers to the reader's flexible use of strategies for various reading purposes (Carrell, 1988). Metacognitive strategies are used to plan, monitor and regulate the reading as it takes place. The planning stage involves actions such as setting a purpose for reading a particular text and adjusting the reading according to the purpose and the difficulty of the text. Monitoring, on the other hand, requires an awareness of whether the goals of reading are being achieved or not and thus, an understanding of the comprehension failures encountered. Regulation is the last stage during which the readers check the effectiveness of the strategies they have used and remedy the comprehension failures with a conscious attempt to revise the strategies (Cohen, 1990).

In brief, employing metacognitive strategies requires the readers to have a metacognitive knowledge-an understanding of the cognitive processes involved-and control which refers to choosing certain strategies for different purposes and text types in such a way to enhance their ability to comprehend a text (Carrell, 1988).

Studies done on the effects of metacognitive strategies on the second language reading reveal that metacognitive strategy training results in better reading performance by enabling readers to choose appropriate reading strategies for different reading purposes and to transfer reading strategies into various reading contexts in which students encounter different types of texts (Carrell, 1988).

2.10.2. Cognitive Reading Strategies

Cognitive strategies are those which are applied throughout a learning or a problem-solving task and they enable learners to gain knowledge or understanding of a task they are to perform through cognitive strategies (Carrell, 1988).

The most common cognitive strategies which are believed to have a facilitative effect on reading performance in the literature are as follows:

- ✓ using the title to anticipate the text content,
- ✓ relating the illustrations/pictures to the text content,
- ✓ skimming
- ✓ relating the background knowledge to the text content,
- ✓ using the dictionary parsimoniously,
- ✓ guessing,
- ✓ thinking of a situation to remember a word,
- ✓ rereading,
- ✓ translation,
- ✓ visualization,
- ✓ recognizing organization,
- ✓ taking notes,
- ✓ summarizing,
- ✓ classifying words.

Cognitive reading strategies have recently been given greater importance because of the research evidence revealing the facilitative effect of such strategies on students' reading performance and on overcoming comprehension failures that

students experience while reading a text. Moreover, according to the current interactive theory of reading, good readers are active users of their cognitive resources, and they direct these in such a way that enhances successful completion of a task (Knight, 1985).

The cognitive strategies which enable the readers to activate their schemata before reading the text are considered to be critical since it is essential that the readers relate their background knowledge to the text and from some expectations about the topic in order for full comprehension to take place (Anderson, 1991). One strategy of this type is using the title to anticipate the text content. Similarly, relating the pictures/illustrations to the text content allows the readers to have an idea about what is going to be read and to form predictions-will either be confirmed or refused-about what the text is about (Anderson, 1991). Another strategy which helps the readers understand what the text is mainly about and to activate their schemata is skimming the text for gist (Anderson, 1991). Skimming also prepares the reader for the incoming information. The most common types of skimming mentioned in the literature are going over the text quickly without paying attention to details and reading the first lines of each paragraph of the text (Anderson, 1991). What is more, through the strategy of considering what they already know about the topic of the text before doing detailed reading, students can develop a better understanding of the text and they can cope with the difficulties in comprehension more easily (Devine & Eskey, 1988). Carrying background knowledge into the reading process is also considered to be a critical factor for L2 reading. This view reflected in the schema theory, which considers the background or world knowledge as the most important means of deriving meaning from the text (Devine & Eskey, 1988). Relating the text to one's background knowledge about that topic is believed to have a facilitative effect on reading in a foreign or second language.

The strategy of using the dictionary parsimoniously is also one of the key cognitive reading strategies (Cohen, 1990). Using a dictionary for almost all the unfamiliar words is believed to impede comprehension and therefore, should be avoided (Cohen, 1990). However, not consulting a dictionary at all is not desirable either, since the readers may miss the important points presented in the text. What is needed is a balanced use of dictionary, which implies looking up the words that seem

important and skipping the rest that does not seem to hinder comprehension (Cohen, 1990). Thus, students should read a text selectively which implies being able to distinguish between the important and unimportant elements in the text and skipping the unimportant ones while concentrating on the elements which are necessary to carry out the reading task (Knight, 1985).

Guessing is another critical strategy for reading (Cohen, 1990). Guessing can be at word, sentence or text level (Cohen, 1990). Word level guessing involves two types of approaches. First, the reader guesses the meaning of an unknown word by considering the context in which the word is used and second by analyzing its grammatical form and what it means in terms of the syntactic unity of the sentence (Barnett, 1988). In sentence or text level guessing, the reader considers the other sentences or the previous information given in the text to understand a sentence or a part of the text (Cohen, 1990). Through guessing, students can become better readers since they try to sort out the problems with the help of the available resources in the text; that is using other words or sentences in the text, rather than relying too much on the dictionaries or skipping important parts of the text (Anderson, 1991).

In order to keep the important words in mind, thinking of a situation in which the word may be used is suggested to be a facilitating strategy through which the readers develop better recalling abilities both in terms of vocabulary and text content (Cohen, 1990).

Rereading / repeating is believed to be one of the strategies enhancing reading comprehension since good readers should always use their own resources first to guide themselves towards autonomous reading (Goodman, 1988). By rereading, it is meant that the learner reads a sentence, a part or the whole text again when there is either a comprehension problem or a need to remember important information presented in the text (Anderson, 1991).

Using the first language (L1) to understand or to sort out the difficulties encountered in second language (L2) reading is also a facilitative cognitive strategy (Oxford, 1993). However, just like dictionary use, too much reliance on the L1 is likely to result in mechanical reading. The readers who read this way will not be able

to make use of their interpretive and reasoning abilities since they will focus on the text on the world-level only (Cohen,1990). Thus, it can be said that readers can benefit from their L1 in L2 reading unless they make word-for-word translation throughout the reading process.

Visualization is believed to be a strategy which should be employed, especially when there is a need for delayed retention. It is suggested that having a mental picture of events happening in the text help readers remember the text information better and relate the ideas presented so far to the incoming ideas in the text (Anderson, 1991).

Paying attention to words or phrases that signal how the text is organized is another essential strategy since the organization of a text can give the reader some clues about what information the author is trying to convey and what attitude is taken towards the topic. Research evidence suggests that the readers who are careful about how the text is organized become better problem solvers as such readers recall the text better and relate their background knowledge to the text more easily (Barnett, 1988).

Taking notes and making summaries on the important points of the text are considered to be effective reading strategies. These strategies help the readers to remember important information in the text. Furthermore, through making notes and summaries, the readers can become more proficient in distinguishing between main ideas and supporting details or differentiating important information from the less important (Cohen,1990).

Most students have difficulty in remembering the meaning of a word that they see in a text afterwards. For L2 reading, knowledge or understanding of lexical items is very important. It is suggested that classifying the words according either to their meanings or to their grammatical categories is considered to be an effective strategy for learning and remembering a vocabulary item (Barnett,1988).

Research on the effects of cognitive strategies on reading performance suggests that relating the title, illustrations/pictures and background knowledge to the text, skimming, using dictionary parsimoniously, guessing, remembering a word through situations, rereading, using the first language as a base, visualizing the events, being

careful about how the text is organized, making notes and summaries of the important information, and classifying words are the strategies help readers to improve their reading ability significantly and therefore, these strategies should not be neglected in the foreign or second language reading curriculum. As Carrell puts forward, “strategy research suggests that less competent learners are able to improve their reading skills through training in strategies”.

In helping readers develop effective reading strategies, the first step should be identifying what strategies the students are already using. In determining the learners’ strategy use in reading, Think-Aloud Protocols, which are discussed in the next section, are a widely used method of inquiry.

2.11. Role of Think-Aloud Protocols in Assessing Strategy Use

Thinking aloud was introduced as an instrument to explore the nature of cognitive problem-solving strategies in the early 1970s by Newell and Simon. Think-Aloud Protocols (TAPs) are “the verbal reports produced by subjects who express their thoughts”. TAPs are particularly found useful in investigating cognitive problem-solving activities.

TAPs have been widely used in reading strategy research since they reveal rich information about how readers carry out a mental activity, which is otherwise unobservable (Cohen, 1990).

During the TAPs, respondents are asked to verbalize their thoughts while reading a text. In articulating what comes to their minds, it is essential that respondents stop at regular intervals, preferably at the end of each sentence, to reveal information about how they approach a text; that is what strategies they employ to make sense of the written material. The researcher collects the verbal reports of the respondents on a tape to analyze the strategies involved in the process. The protocols are then transcribed and analyzed and the researcher establishes a “taxonomy of cue types” (Nunan, 1992).

TAPs are generally used either before strategy training to understand what strategies learners employ or after strategy training to observe the changes in strategy use. TAPs are especially useful for collecting data on unobservable strategies such as making mental images and guessing. The interest in TAPs is due to the fact that they reveal information about the process rather than the product. TAPs provide rich information about how learners solve problems, what difficulties they encounter and to what extent and in what contexts they use certain strategies in a learning task (Cohen, 1990).

Thinking aloud as a research method has been criticized because it is not possible to limit the type of strategies that can be reported. This may cause difficulty in classifying the strategies for data analysis. Therefore, the interrater reliability should be ensured in order for accurate information to be drawn from TAPs. Although such criticism has been put forward, the advantages of thinking aloud in strategy research are far more than the disadvantages mainly due to the rich data it provides on strategy, particularly the unobservable ones (Cohen, 1990).

CHAPTER 3

METHODOLOGY

3.1. Selection of Subjects

3.1.1. Students

The subjects for this study were forty Pre-intermediate students at the English preparatory programme at Selçuk University, School of Foreign Languages during the second semester of 2007-2008 academic year. The reason for choosing second semester classes is that the students have learned English to read short English texts. Selçuk University students take the proficiency exam at the beginning of each academic year. Then the students are determined whether to follow English preparatory classes offered by School of Foreign Languages or their own departments. The students who can not pass the proficiency exam are placed to the classes according to their scores on the Proficiency Test.

There are five categories of instruction which are carried on by three instructors: listening, speaking, reading, writing and main course. Two morning classes are selected as the experimental and the control group as the subjects of the study.

The classes have almost the same proficiency level at the beginning of the first semester for this reason they were called as Class 35 and 36, one after another according to the proficiency test results. For that reason, they were selected as the subjects so as to carry out a reliable and feasible study. The classes are at the pre-intermediate level. There are 20 students from different departments in each group. Only 9 students in the experimental group and 5 students in the control group received preparatory programme in their high schools. The students are between the ages of 17 to 24. They receive 25 hours of English instruction per week at SOFL.

3.2. Research Design

In this study, the two groups at the same proficiency level (pre-intermediate) were compared. In each group, 5 reading texts (see Appendix C) and target vocabulary items and (see Appendix E) were presented.

A pre-test of 45 questions (see Appendix D) testing the target vocabulary and reading comprehension was implemented to experimental and control group with no prior announcement. In the following 5 weeks, the target vocabulary and reading comprehension were given in 5 reading passages but in two different ways. In Class 35, target vocabulary and reading were taught regarding multiple intelligences theory and individual differences. In Class 36, on the other hand, reading and target vocabulary were taught in traditional methods, disregarding multiple intelligences theory and individual differences. The design outline is below:

Table 2: The Design Outline for the Groups

Weeks	Passages	Target Vocabulary	Control Group	Experimental Group
1	Food For Thought	smart, to create, to invent, to contain, to supply, luckily	Reading the text from the handouts, and giving the definitions of the target vocabulary in English and some translation activities	Reading the text from the PowerPoint show displayed on the board, playing Mozart in the background and studying on the target vocabulary by different techniques by showing pictures and telling stories of their own, miming, using gestures and body language and singing songs, using realia.
2	Sleep and the Brain	rate, to do research, creative, series, average, to include, set, active	Reading the text from the handouts, and finding the definitions of the vocabularies in a matching exercise.	Reading and listening the text from the PowerPoint show displayed on the board, playing Beethoven in the background and studying on the target vocabulary by different techniques that tap students' intelligences such as showing pictures and telling stories of their own, miming, using gestures and body language and singing songs, using realia.
3	Bionic Men and Women	to replace, development, engineer, to keep up with, major	Reading the text from the handouts, and giving the definitions of the target vocabulary in English and some translation activities	Reading the text from the PowerPoint show displayed on the board, playing Beethoven in the background and studying on the target vocabulary by linguistic, logical-mathematical, visual-spatial, bodily-kinesthetic, interpersonal, intrapersonal activities.

Table 2. continued

Weeks	Passages	Target Vocabulary	Control Group	Experimental Group
4	Sleepy Teens	expert, likely, complaint, to reduce, absence	Reading the text from the handouts, and giving the definitions of the target vocabulary in English and some translation activities	Reading the text from the PowerPoint show displayed on the board, playing Classical music in the background and studying on the target vocabulary using spatial, linguistic, bodily-kinesthetic and interpersonal activities.
5	Road Rage	to injure, pregnant, legal, tragedy, to accuse somebody of doing something, insurance, to be in a rage	Reading the text from the handouts, and finding the definitions of the vocabularies in a matching exercise.	Reading and listening the text from the PowerPoint show displayed on the board, playing Mozart in the background and studying on the target vocabulry by different technigues that tap students' intelligences such as showing pictures and telling stories of their own, miming, using gestures and body language and singing songs, using realia.

3.3. Materials

3.3.1. Reading Texts

The reading materials containing the target vocabulary were selected from Password 2, all of which are for pre-intermediate level students. The reading texts were almost at the same difficulty level and the length was ranging between 300 and 600 words. All the reading texts were distributed to the students by getting them photocopied. The texts were given to the experimental group by Power Point slide show besides the photocopies.

The reading texts and vocabularies were selected according to general interest topics of young adults from course books especially designed for students at the pre-intermediate level. The following topics were thought to be appropriate for the study: teenagers, health, psychology, and education.

3.3.2. Pre-test and Post-test

Pre and Post-tests were developed by the researcher. The tests' reliability was maintained by applying to two other groups of students (see Appendix A). This test was given to two classes (Prep. 35-36) which have similar characteristics with the control and the experimental groups in terms of the scores in the Proficiency Test results. The scores of the groups were analyzed. The results showed that the reliability (Coefficient Alpha) of the Pre and Post-tests were, 0.8107, that is to say that the tests were reliable. The Pre and Post-tests have the same questions to see to what extent the students learnt vocabulary from the 5-week instruction of the target vocabulary and reading comprehension. The tests have 45 multiple-choice questions. For the questions, dictionaries and the books of the texts were used.

3.3.3. Intelligence Inventory

For this study, Multiple Intelligence Inventory for English Language Teachers (see Appendix F) was used to let the teacher assess herself and know her intelligence profile (see Appendix H), strengths, and dominant areas. The second inventory was the Multiple Intelligence Inventory For Adults (see Appendix G) which appears in Thomas Armstrong's book, "Multiple Intelligences In The Classroom" (2000). The inventory provides subjects a

checklist of 10 items for each of the 8 intelligences. By this inventory the students had the opportunity to assess their intelligence areas, see their potentials, dominant intelligences (see Appendix I). The students in the experimental group took the MI inventory prior to the study.

3.4. Data Collection Procedures

In this study, the researcher collected data to determine the extent that student learning had occurred and whether there were any significant difference between results of the instructions employed differently on each group. It consists of three steps, first, before the instruction, regardless of the instruction received. Secondly, during the instruction, instruction regarding multiple intelligences theory in experimental group and disregarding MI theory in control group. And thirdly, after the instruction, data were collected to see the differences between the groups. Now, these steps will be explained in detail.

3.4.1. Before the Instruction

Before the instruction, I have tried to learn a lot about Multiple Intelligences theory in order to implement the classroom activities properly. I have chosen my two morning classes, Class 35 and Class 36 as the experimental and the control group of the study as they are both Pre-intermediate students and have almost the same level of English according to the Proficiency Test.

Before applying the pre-test, a Multiple Intelligences Inventory for English Language Teachers was applied to me as the instructor to determine my strengths and intelligence profile. Then, another inventory Multiple Intelligence Inventory For Adults was applied to the students in the experimental group to let them know their intelligence profiles and their strengths.

A pre-test involving 45 questions that test the reading comprehension and vocabulary knowledge which is taught in the following 5 weeks were given to the students to check whether they already knew the target vocabulary or not.

3.4.2. During the Instruction

5 reading texts “Food For Thought, Sleepy Teens, Bionic Men and Women, Sleep and the Brain, Road Rage” with the target vocabulary were introduced during the first five weeks of teaching for 15 hours.

Control Group:

The target vocabulary and reading comprehension were taught according to the traditional method in the control group. In other words, the texts were given to the students beforehand by the teacher (by me) and the lesson started. First, warm-up activities and then motivation activities were done. Afterwards, the aim of the lesson was explained and the definitions of the new words were written on the blackboard. The new words were tried to be used in one or two sentences and pronunciations were studied. After reading the passage, the students read the passage silently. I explained the points that the students did not understand. The students answered the reading comprehension questions and completed the exercises at the end of the reading texts.

Towards the end of each week the target vocabulary was revised but again in a traditional way. I asked the students the meanings of some target vocabularies and the students tried to answer me by giving either the definitions or Turkish equivalents.

Experimental Group:

In the experimental group, the lesson was enriched by applying Multiple Intelligences activities and techniques suggested by Linda Campbell (1996) and Thomas Armstrong (1994).

Warm-up and motivation activities were held for discussions about each text’s topic before reading the texts. For example, in the case of the first text “Food For Thought”, I wanted them to tell about their eating habits since the text is about how the food we eat affects our lives and us.

After talking about those discussion points, the texts were handed and the Power Point slide show started. Looking at the first two photos on the slide show, the students were asked to guess what the title was and what the story or the text is about. By doing this, the Spatial Intelligence and Linguistic Intelligence of the students were tapped. There were some guesses about the pictures, the title and the text. Then, the music started along with the reading of the text in order to tap the Musical Intelligence hand in hand with the Spatial Intelligence of the students.

The first step was scanning or reading the text on their own for the recognition of new vocabulary to address their intrapersonal intelligence. After the silent reading phase, the new vocabularies were focused on.

Presentations of the new vocabularies were done in various ways, in one of which I asked the students to match the pictures placed in the Power Point slide show next to the passage and the unknown words. This activity helped them to use their Spatial, Logical-Mathematical and Linguistic Intelligences.

For example, in the text "*Road Rage*", it was too helpful to see a picture of a nervous driver to guess what the "rage" meant.

The students were also asked to infer meanings of some words working in pairs to have them use their Interpersonal Intelligence. For instance, some pairs were able to find out the meaning of the verb "to injure" in the case of the passage "*Road Rage*".

Bodily-Kinesthetic Intelligence was tapped in explaining the meanings of many words. In the passage "Sleep and the Brain" the verb "to do research" was demonstrated with a human figure who was trying to find out how human brain works during sleep. Mimics were used to give the meaning of "complaint" in the passage "*Sleepy Teens*".

Linguistic Intelligence was tapped by requiring the students to use the words in their own sentences.

E.g., for the verb “reduce” in the text “Sleepy Teens”, like “I try to reduce weight by going on a strict diet”. Besides the picture showing a person trying to reduce weight tapped the students’ Spatial Intelligence.

The Logical-Mathematical Intelligence was tapped by giving some definitions of words randomly and having students to match them with the correct words. By giving classical music as a background for the texts, The Musical Intelligence is tapped. Some realias and topics about nature were used for the Naturalist Intelligence. The fill in the blanks type vocabulary exercises at the end of the reading texts tapped their Mathematical - Logical Intelligence, Linguistic Intelligence and Spatial Intelligence.

Towards the end of each week vocabulary games were played. The students were divided into two groups and in each group, a student tried to have their friends know the target words, by demonstrating either with pictures or with body language. Besides these exercises, the slide show kept them integrated to the lesson and kept them stimulated for the lessons.

To sum up, all the intelligences were implemented to teach the new vocabulary to the experimental group.

3.4.3. After the Instruction

After the instruction, 5 weeks after the pre-test, the students were required to take a post- test having the same questions with the pre-test to see whether there was a considerable difference in teaching and learning the target vocabulary and reading comprehension between the experimental and the control group.

3.5. Data Analysis

The purpose of this study was to find out whether there would be a significant difference in learning the target vocabulary between the group that was exposed to the reading teaching regarding MI Theory and the group that was exposed to the traditional reading teaching.

To achieve this goal, the two groups were asked 45 questions testing the knowledge of the target vocabulary and reading comprehension as a Pre-test and the next step was the introduction of 5 passages including the target vocabulary and reading comprehension in 5 weeks and as a last step 45 questions testing the knowledge of the target vocabulary and reading comprehension as a post-test were asked.

The researcher used a statistical package called SPSS 10.0 for Windows. This software allowed the researcher to explore the difference between the groups' Pre-test and Post-test results. And these results were calculated by using Independent Samples T-test to see whether there was a significant difference between the groups' test scores.

CHAPTER 4

RESULTS AND ANALYSIS

4.1. Restatement of the Purpose

This study tried to find out whether there would be improvement in reading comprehension and in vocabulary for preparatory students who were taught reading and target vocabulary regarding Multiple Intelligences theory as compared to the students who were taught disregarding MI theory or in a traditional way.

To realize the purpose stated above, the scores of the students both in the experimental and the control groups were computed and analyzed using Independent Samples T-tests. The analysis of the performance will be explained in detail in this chapter.

4.1.1. Analysis of the Pre-test Scores

Before the instruction, a mean score was calculated for experimental and control group. Independent samples t-tests were used to compare the mean pre-test scores of both groups. The table 3 in the following indicates the mean scores in the pre-test of the groups. The mean scores of the groups in the pre-test were compared by using Independent Samples t-test as shown in Table 4. The Figure 1 shows the scores of the students in both groups in the graphic.

Table 3: Pre-test mean scores of the experimental and the control group

Group statistics

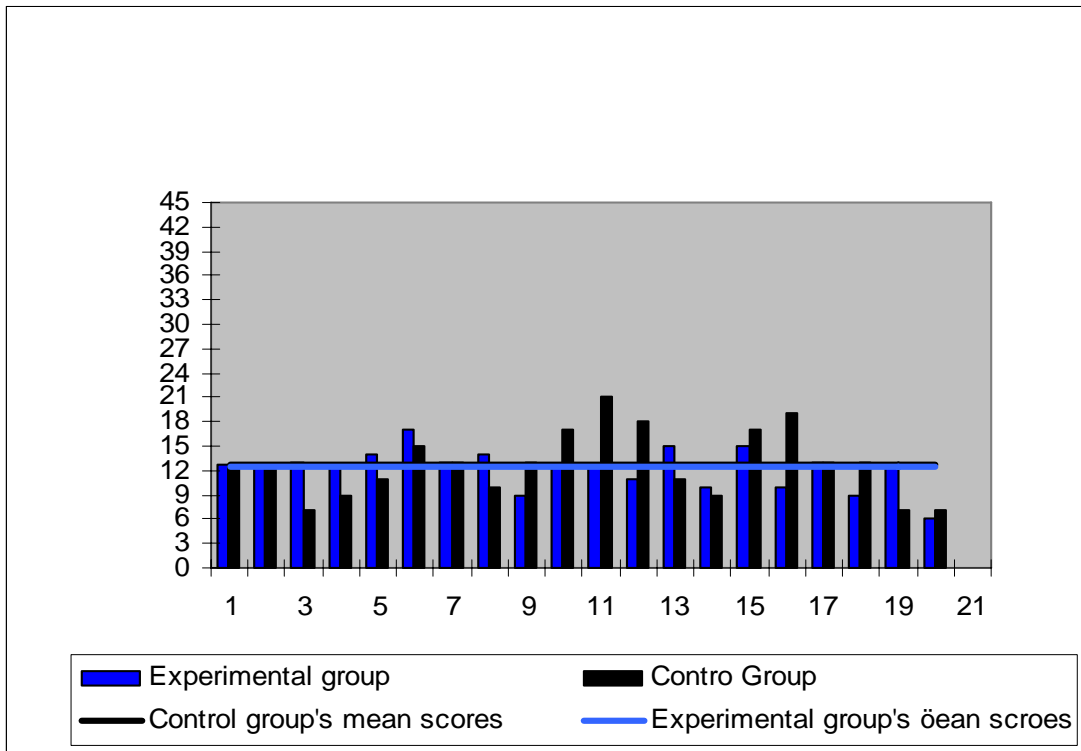
GROUPS		N	Mean	Std. Deviation	Std. Error Mean
TOTAL	EXP.	20	12,9500	2,25842	,50103
	CONT.	20	13,1500	4,00616	,92885

Table 4: Independent samples t-test results for experimental and control group's pre-test mean scores

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
TOTAL	Equal variances assumed	6,302	,015	-,502	39	,648	-,5000	1,04546	-2,53687	1,53687
	Equal variances not assumed			-,502	29,270	,649	-,5000	1,04546	-2,55833	1,55833

Figure 1: Pre-test scores of groups



4.1.1.1. Interpretations and Discussions of the Pre-test Results

The mean score of pre-test in the control group is 13,15 out of 45; the mean score of pre-test in the experimental group is 12,95out of 45. Comparing the mean scores of the two groups through an independent samples t-test as shown in table 4 we do not see a significant difference at a confidence level of .05. This means that the mean score of two groups are highly close. That is to say, there is not a significant difference between the pre-test scores of experimental and control groups.

The comparison of the mean scores of pre-tests of both experimental and control groups showed that they were more or less at the same level of proficiency in terms of the vocabulary. All students were asked to answer a Pre-test consisting of 45 questions in order to test the vocabulary knowledge before the instruction. Those multiple-choice questions aimed to test whether the subjects had known the target vocabulary beforehand or not. When the scores were compared, the comparison showed that the groups were similar concerning their English target vocabulary knowledge levels.

4.1.2. Analysis of the Post-test Scores

The post-test scores of the two groups were compared after the instruction. The mean score of the post-test received from both control and experimental groups showed in Table 5. The mean scores of the groups in the post-test were compared by Independent Samples T-test and the results were shown in Table 6. The Figure 2 shows the scores of the students in both of the groups graphically.

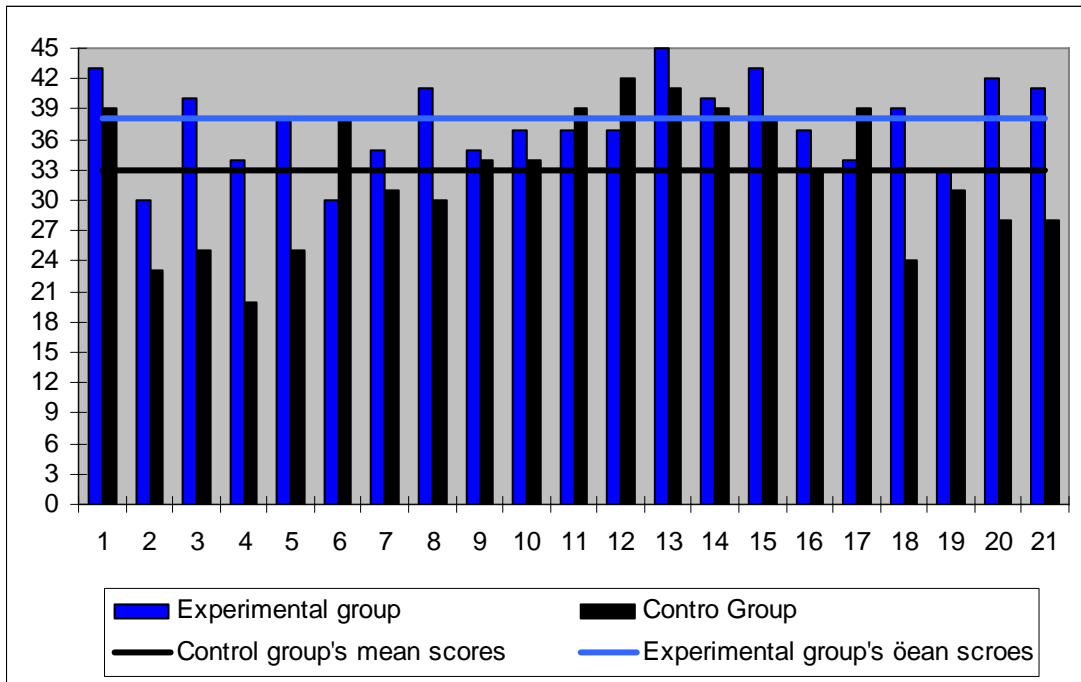
Table 5: Post-test mean scores of the experimental and the control group

GROUPS		N	MEAN	Std. Deviation	Std. Error Mean
TOTAL	EXP.	20	37,9100	4,27379	,95218
	CONT.	20	32,5300	6,43927	1,47520

Table 6: Independent samples t-test results for the experimental and the control group's post-test mean scores

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
TOTAL	Equal variances not assumed	6,232	,015	3,081	39	,004	5,4500	1,74366	1,69971	8,80029
	Equal variances assumed			3,081	32,693	,005	5,4500	1,74366	1,67984	8,82016

Figure 2: Post-test scores of groups



4.1.2.1. Interpretations and Discussions of the Post-test Results

The post-test mean score of the control group is 32,53 out of 45; however it is 37,91 out of 45 for the experimental group. The scores that are compared through an independent samples t-test as shown in Table 4 shows that the difference appears significant at a confidence level of .05. In other words, in terms of the mean post-test scores of the groups there is significant difference.

After the instruction, however, the post-test scores revealed significant differences between the groups. The students in the experimental group did better than the students in the control group. When the scores are compared it is pointed out that the ones who were instructed the reading and the target vocabulary regarding MI theory were more successful than those who were taught the reading and the target vocabulary with traditional methods disregarding MI theory.

CHAPTER 5

CONCLUSIONS AND FURTHER IMPLICATIONS

5.1. Presentation

This chapter presents the summary of the study and implications for practice and further research.

5.2. Summary of the Study

In this study, we aimed to overcome the difficulties of reading through Multiple Intelligences Theory. The aim of the study was to see if MI activities when incorporated into reading classes would help them become better readers. The rationale behind this study, therefore, was the necessity of training students to become more efficient readers while considering the individual competences.

So as to meet the aim stated above, two groups were selected as the experimental and control groups. Both groups were similar with respect to their level of English. Throughout the instruction, the reading course book and some extra photocopied materials were used in the control group. In the experimental group, however, mainly data show PowerPoint presentations were used to appeal students' MIs. That is to say, the same subject was handled in totally different ways.

The results of the study show that Selcuk University, School of Foreign Languages students appear to have a better performance through MI stimulating instruction. The use of MI activities in the reading classes enhanced their reading skills. MI activities in a reading class considerably increases student success in reading class in terms comprehension and the use of vocabulary.

This study was based on the theory of Multiple Intelligences put forward by Howard Gardner (1983) and enriched by Multiple Intelligences applying activities, and a composite of teaching techniques suggested by Thomas Armstrong (1994) and Linda Campbell (1996).

Gardner put his theory in words as follow: (1993a):

It is of the utmost importance that we recognize and nurture all of the varied human intelligences, and all of the combinations of intelligences. If we recognize this, I think we will have at least a better chance of dealing appropriately with the many problems we face in the world.

It can be inferred that the multiple intelligences approach is crucial to EFL/ESL teachers as it encourages teachers to regard intellectual ability more broadly and create individualized learning environments. During the implementation stage of the study, student intelligences were stimulated and this resulted in better performance in reading classes.

Another point is that, multiple intelligences can be tapped effectively through reading classes. The study implies that the MIs should be part of reading.

It can also be implied from the study that students become more interested in the lessons since they discover their potentials through MI activities. Therefore, they become more effective learners.

5.3. Implications for Practice in the Field of ELT and Wider Context

The result of the study reveal that tapping various intelligences of the students brings success. It can be implied that the use of MI should not only be used in reading classes but also in teaching listening and speaking, writing , vocabulary and grammar.

It can be moved to a wider context that MIs can be used in other branches of study. Saban (2001), in his book *Çoklu Zeka Teorisi ve Eğitim*, supports Gardner's theory of multiple intelligences and further comments that every student is regarded as intelligent individuals and teachers should help students discover their competence to survive in the educational environment. In order to make students explore their inner potential, teachers should be aware of their own intelligences. In this way both teachers and learners can make use of their potentials in the utmost level.

Saban (2001) comments that all domains of education such as art, music, dance, athletics, computer programming, should never be neglected and be emphasized and utilized as much as mathematics or language is valued.

5.4. Implications for Further Research

One of the implications of this study is, the results of a larger-scale study will be more reliable due to the smallness of the sample size in the study.

What is more, the use of MI in class should start from the beginning of one's education and must be applied during all kinds of lessons, not only in English classes. Students are able to recognize and develop their personal strengths through use of MI activating practices. Namely, since this theory includes all phases of human life from birth to death, it should be part of all educational programs.

As a conclusion, before helping students with their MIs, teachers should be trained with the necessary techniques to apply MI stimulating activities in the classes. Faculties should train student teachers for this purpose and it should be continued with in-service training programs at the institutions.

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APPENDICES

APPENDIX A

RELIABILITY ANALYSIS – SCALE (ALPHA), (Pre-test)

Reliability coefficients

N of Cases = 40,0	N of Items = 45
Alpha = ,8105	

APPENDIX B

SAMPLE ACTIVITIES REGARDING MI THEORY

1.Intelligence(s) Invoked: Spatial

Description of Activity: The teacher can use pictures or photos related with the vocabulary items that are going to be studied. The students can have discussions about those visual-spatial items. In the exercise section, the teacher will ask them to match the pictures and the words. As in this study done, the pictures were given with the text so that when the students first see the pictures (below) they can easily relate them with the new words. Students see, for example expert and they see the picture of an expert besides it.

2.Intelligence(s) Invoked: Naturalist

Description of Activity: Looking out of window can be used to set a scene for lessons. After a text or a story, the teacher may ask the students "And as we finish the story, I want you look out of the window and imagine our character is driving his car in a rage".

3.Intelligence(s) Invoked: Musicial

Description of Activity: Recorded music creates an appropriate mood or emotional atmosphere for a particular lesson or unit. Such music can include sound effects, nature sounds, or classical or contemporary music that facilitates emotional states of the students. For example just before the students read a story about fast drivers, the music can include the sounds of drivers who are driving fast on the road.

4.Intelligence(s) Invoked: Spatial

Description of Activity: The teacher can use visualization strategy to help the students understand, translate a book and lecture material into pictures or images by having them close their eyes and picture whatever is being studied. The teacher may also want them to draw on the papers, and have a discussion about it.

5.Intelligence(s) Invoked: Intrapersonal, Linguistic

Description of Activity: The students will individually tell stories or memories inspiring from the words studied in the texts. Then other students choose the best story or memory by voting, and the student who has the best story will have extra 10 points for the next quiz or something. By the help of this exercise, the personal connections will be emerged. The best story will be on the notice board for one week or a bit longer.

6.Intelligence(s) Invoked: Spatial, Linguistic, Logical-Mathematical

Description of Activity: Before reading the texts, discussions about each text's topic are done as a warm-up and motivation activity. During the reading using Powerpoint, the students are demanded to infer the meaning of some words from the related pictures just attached next to the reading texts and say, "This word relates to pictures 2, etc." Besides, the students make their own sentences with the new words that they have learned. After the reading text and vocabulary studies are over, matching type exercises are done from the powerpoint slide show. The students match the target words with the definitions.

7. Intelligence(s) Invoked: Logical-Mathematical, Interpersonal

Description of Activity: Students will work in groups of four or five to match the definitions and the words that the teacher writes on the blackboard. The groups that have the most right answers will have the chance to write some other definitions and some words to ask the other groups.

8 .Intelligence(s) Invoked:Bodily-Kinesthetic, Spatial

Description of Activity:The teacher tries to make them guess the target word by bodily movements, gestures, mimic ...etc. at the end of each text studied. Students works in groups of four or five and the group that knows the target word gets 1 point or something else to motivate.

APPENDIX C

THE READING TEXTS

1. FOOD FOR THOUGHT

The foods you eat supply your body with energy. Your body needs energy to move and even to sleep. One part of your body uses a surprising amount of energy. This body part is small-only 2-3% of your total weight-but it uses 20-30% of the energy from your food. Can you guess what it is? It is your brain.

You already know that drugs affect the brain. Did you know that food affects it, too? Different types of food affect the brain in different ways. Sometimes we can feel the changes that food makes in our brains. For example, most people can feel an immediate change after drinking coffee. It is the caffeine in coffee that affects the brain. Caffeine usually makes people feel more awake. After a cup of coffee, a person can think and make decisions more quickly.

Other foods affect the brain in ways that we cannot see or feel. We don't realize how they influence us. However, everything we eat matters. Our food affects how smart we are and how well we remember things. It also affects how long we can concentrate. For example, scientists know that:

1. Eating breakfast makes students do better on tests.
2. Spinach, berries, and other colorful fruits and vegetables help keep older brains from slowing down.
3. Eating large amounts of animal fat (in meat and cheese, for example) makes learning more difficult.
4. Fish really is "brain food." For years, many people believed that eating fish was good for the brain. Now scientists are finding that this is true.

For millions of years, the brains of early human beings stayed the same size. They weighed only about one pound (400-500 grams). Then, during the last million years or so, there was a big increase in brain size. The human brain grew to about three pounds. This

increase in brain size meant an increase in brain power. With bigger, stronger brains, human beings became smart enough to build boats and invent written languages. They developed forms of music and created works of art. Some scientists say that these changes happened after people started to eat seafood. Seafood contains a certain kind of fat, omega-3 fat. According to these scientists, omega-3 fat caused the increase in brain size. Today, brain scientists agree: This fat is still important for healthy brains. They also say that most of us are not getting enough of it.

Did you know that the brains of adults continue to grow and change? The foods you eat affect how your brain grows. They affect how well you learn and remember things. Maybe you never thought about that before. Luckily, it is never too late to start feeding your brain well.

2. SLEEP AND THE BRAIN

Human beings, like all mammals, need sleep. People need an average of 7.5 hours a night. However, the average amount may not be right for you, just as the average-size shoe might not be right for your foot.

People may not need the same amount of sleep, but everyone needs the same two types of sleep. Your sleep is divided between REM sleep (REM is pronounced “rem”) and NREM sleep (pronounced “en-rem” or “non-rem”):

- ✓ REM comes from the words “rapid eye movement.” During this type of sleep, your eyes move quickly. This movement shows that you are dreaming.
- ✓ NREM means “non-REM,” or no eye movement. This is dreamless sleep, and it has four stages.

During the night, you go through several sleep cycles. A cycle is a set, or group, of events. Events in cycles happen again and again, like the cycle of seasons that happens every year. In each sleep cycle, you go from a light sleep to a deeper sleep and back again. You enter your first cycle when you fall asleep, and it lasts about 90 minutes. This cycle includes both REM sleep and the four stages of NREM sleep. It usually goes like this:

1. You begin with a period of light NREM sleep. This type of sleep is called Stage 1 sleep. During Stage 1 sleep, a noise could easily wake you up. This first period of Stage 1 sleep lasts less than 15 minutes.
2. Next, you move into another kind of NREM sleep for about 15-20 minutes. It is not so easy to wake you up from this type of sleep. It is called Stage 2 sleep. During the night, you spend about half your sleep time in Stage 2.
3. A short period of Stage 3 sleep is next. This marks the beginning of deep sleep. Your brain becomes less active, and you breathe more slowly. Your muscles relax.
4. Stage 4 follows Stage 3 and lasts 20 to 30 minutes. These two stages are a lot alike, but Stage 4 is your deepest sleep. Adults usually get all their Stage 4 sleep during the first few hours of the night. During this stage, some people talk or walk in their sleep.
5. Next, you return to the level of Stage 2 sleep of a short time. Your heart rate and your breathing get faster.
6. Then you enter REM sleep. Your brain becomes very active for 10 to 20 minutes, and you have dreams. Your body doesn't move, except for your eyes. In fact, your body seems to be paralyzed during REM sleep. That is, it seems unable to move.
7. You return to Stage 2 sleep. This marks the end of your first sleep cycle of the night.

In most cases, you will go through a series of four to six sleep cycles each night. During the night, the cycles change. The amount of deep sleep decreases. You start to spend more time dreaming. In general, you spend about 20% of the night in REM sleep.

Why do people need sleep? Is it more for our bodies or for our brains? No one really knows. However, it is clear that sleep is important. What happens if people don't get enough? Research shows that we forget words, we are less creative, and we react more slowly. You can probably think of other effects of not getting enough sleep. We all know we need it. Maybe future research will tell us why.

3. BIONIC MEN AND WOMEN

In the movie *Star Wars: The Empire Strikes Back*, Luke Skywalker loses a hand, but he gets a new one, an artificial hand that looks and works just like a real one. This is not unusual in movies that take place far into the future. It is easy to believe that 100 years from now, doctors will be able to replace body parts with machines. But you don't have to go to the movies to see this happen.

Machines are already doing the jobs of various human body parts. There are people who can see, hear, walk, or pick up their children because of artificial eyes, ears, legs, and arms. These are all possible because of developments in the field of science called bionics. *Bionics* means the study of how living things are made and how they work. Engineers study bionics in order to design machines that are similar to living things. For example, in order to design airplanes, they have studied birds. The field of bionics also includes building machines to replace parts of the body or to support processes within the body.

One example of a bionic device is the pacemaker. Doctors can put a pacemaker into the chest of someone whose heart beats too slowly or not regularly enough. They attach the pacemaker to the heart with wires, and the device gets its power from a battery. The wires carry small amounts of electricity to the heart and keep it beating as it should. Many thousands of people depend on pacemakers.

Other bionic devices, like Luke Skywalker's new hand, take the place of a body part. A major problem in developing bionic parts has been setting up communication between the body and the machine. Normally, the brain tells parts of the body what to do by sending messages along nerves. For example, your brain might send a message to your hand telling it to pick up a pen and write something. But how would it tell an artificial hand to do that? Dr.

William Craelius, who has invented an artificial hand, says, “Communication is key, and it is getting easier.”

Machines are not the only things that can replace a body part. There are also transplants. A transplant is an operation to move a body part, such as a heart or a kidney, from one person to another. One major problem with transplants is that there aren’t enough hearts, kidneys, and so on, available, so hospitals cannot keep up with the demand for transplants. Patients have to wait, and some have no time left. Therefore, many scientists see bionics as the best hope for the future. Using bionics, a patient could get a new heart or kidney right away instead of waiting for a transplant. Other scientists disagree. They say that bionics is already a thing of the past, and they have a better idea: They are working on ways to use animal parts for transplants.

Maybe in the future our choices won’t be limited to bionic body parts and transplant operations. Maybe science will take us in another direction. Consider these facts: When a salamander loses a leg, it can grow a new one, and if an earthworm is cut in two pieces, the piece with the head can grow a new tail. Wouldn’t it be great if a person who lost a hand or a kidney could grow a new one? This may sound like something from another sci-fi movie, but it could happen. Researchers are now studying the genes that let salamanders grow new legs, and they hope to learn how humans might do the same thing.

Growing a new body part could be the best way to go. On the other hand, some people might prefer bionic body parts if they had the choice. In the sci-fi movie *RoboCop*, a police officer has an operation that turns him into a cyborg-half man, half machine. His new body parts give him special powers, including superhuman strength. Think about it. If bionics could turn you into a superman, what would you do?

4. SLEEPY TEENS

When school superintendent Russell Dever enters the local coffee shop at around 7:20 A.M., it is crowded with students. “The line is out the door because our high school kids are getting coffee,” he said.

And they are not standing in line for the decaf-they need the caffeine to stay awake in class. Talk to American high school students and you hear the complaints about how late they stay up, how little they sleep-and how early they must be in class.

These days, there is increasing concern in schools across the United States about students who are not completely awake in morning classes. School officials in some states have even changed start times so teenagers can sleep later.

According to sleep expert Mary Carskadon, the fact that many teenagers work long hours outside of school and have computers and televisions in their bedrooms contributes to a serious lack of sleep. But, she said, the problem is also due to biology. As the bodies of teenagers develop, their brains also change. These changes make teens more likely than adults to have trouble sleeping at night.

Teenagers need at least eight to nine hours of sleep a night, but the average teen gets a lot less. Carskadon's study, completed in the fall of 2001 with researcher Amy Wolfson, showed that nearly 30 percent of students in the tenth grade slept less than six hours on school nights. Less than 15 percent got more than eight hours of sleep each night. Eighth-graders averaged eight hours of sleep a night, although that age group, she said, needs at least nine hours a night.

Even more remarkable are the results of a 1997-1998 school year study. In that study, 12 out of 24 U.S. high school students who were part of an experiment at a sleep laboratory had brain wave patterns similar to those of someone with narcolepsy, a serious condition that affects sleep. "What's going on is that at 8:30 in the morning these kids... would normally be in school sitting in a classroom, but ... their brain is still in the middle of the night," said Carskadon.

Parent Dawn Dow says her 12-year-old son just cannot go to bed before 10 P.M. "Last year he was trying to put himself to bed at 8:30 and was coming in at 9:30 and 10 in tears saying, 'I just can't go to sleep.' It is not a case of children wanting to be up late.... It is a change in his chemistry."

So would letting teenagers wake up later make a difference? Kyla Wahlstrom of the University of Minnesota in the United States studies the effects of earlier school start times. She has looked at students in Edina and Minneapolis, two cities in Minnesota, where public school officials have moved high school starting times past 8:30 A.M. In Minneapolis, the middle school begins at 9:30 A.M. She said the later starting times have reduced student absences. They have also lowered dropout rates by 8 percent over four years. In addition, she said, teachers report that students are not sleeping at their desks during the first two hours of class anymore. She said 92 percent of parents from Edina reported that their teenagers are easier to live with. The students reported that they were feeling less depressed and were getting better grades.

Big changes in school start times may not be possible in some areas. However, Wahlstrom said her research shows that even small changes can contribute to a solution to this serious problem.

5. ROAD RAGE

The women were driving their cars just outside the U.S. city of Cincinnati, Ohio. Rene Andrews, 29, was six-months pregnant with her first child. Tracie Alfieri, 23, was the mother of two. Suddenly, Andrews pulled in front of Alfieri. Alfieri gestured angrily at Andrews, sped up, and drove her Pontiac past and in front of Andrews' Volkswagen, prosecutors say. Alfieri, police say, then slammed on the brakes. Andrews swerved to the right and crashed into a truck parked on the side of the road. She was seriously injured-and she lost her unborn child.

Alfieri's lawyer, Timothy Schneider, says she stepped on the brakes because there was traffic ahead. However, the court found Alfieri guilty of aggravated vehicular homicide and aggravated vehicular assault. The judge ordered her to spend 18 months in prison. After six months, she was allowed to leave prison to take care of a sick daughter.

The prosecutor of the case says his office has dealt with plenty of cases involving aggressive driving, but none that ended as violently as this one. "Alfieri's conduct was so aggravated... it was so bad, that a witness to it followed her all the way to work to get her license number," prosecutor Joseph Deters says.

Two years after the accident in November 1996, Andrews was still recovering. She and her husband have nearly \$200,000 in medical bills. “She’s hoping that she can still have children, but she doesn’t know,” Robin Levine, Andrews’ lawyer says.

The term “road rage” has no exact legal definition, but it is commonly used when “a driver or passenger attempts to kill, injure, or intimidate a pedestrian or another driver or passenger or to damage their vehicle in a traffic incident”. In recent years, English-language newspapers around the world have been publishing many stories on sensational cases like that of Andrews and Alfieri, and there has been a lot written about the cause of this “new” aggression on the roads. The explanations range from an increase in traffic to the anxiety people feel due to rapid technological change.

However, some researchers doubt that this is actually a “new” problem. They believe that the recent attention given to road rage is the result of the media’s desire to sell more papers or increase their number of viewers. These researchers accuse the media of inventing the term “road rage” to sensationalize what is not a societal problem, but rather a personal tragedy affecting a very limited number of individuals.

It is difficult to determine whether or not aggressive driving is increasing. Because there is not legal definition of road rage, incidents are reported differently from town to town. Still, the U.S. Department of Transportation calculates that two-thirds of traffic deaths in the United States are at least partly caused by aggressive driving. In a 2002 Canadian study, 88 percent of drivers surveyed admitted to aggressive driving—such as speeding or going through yellow lights—in the previous year, an increase of 3 percent over the year before. And a recent survey done for Axa Direct, a British insurance company, showed that three out of every four drivers or passengers had experienced some form of road rage. However, it is important to note that only 1 percent reported having actually experienced a physical attack.

One thing that all researchers would likely agree on, however, is that the best way to deal with road rage is to prevent it from ever happening. In the United States, researchers are conducting tests with a simple machine called “the Flash” to see if it will help reduce incidents of aggressive driving. Drivers participating in the experiment will get a green light to put in their vehicle’s back windows, and a button to flash it on and off. One flash means

“Please,” as in “Please let me get in front of you,” two flashes means “Thank you,” and three flashes means “I am sorry.” Before drivers in an area start using “The Flash,” there will be advertisements to educate the public about its use. The hope is that if drivers can communicate even just these few basic ideas and feelings to each other, there will be less of a tendency for them to react to each other with rage.

(All of the reading passages were adapted from Password 2 by Linda Butler, Pearson Education,2004).

APPENDIX D

PRE – TEST AND POST – TEST QUESTIONS

READING COMPREHENSION TEST

1. She's a girl, and she does very well in school.
A) smart B) lazy C) naughty D) lucky

2. I have no more patience with them. They just problems for everyone else.
A) destroy B) create C) discover D) injure

3. When someone a new machine, product, or way of doing something , we call that person an inventor.
A) discover B) create C) invent D) make

4. There were no surprises in the report. It didn't any new information.
A) inside B) outside C) demand D) contain

5. There was a car accident there today., no one was hurt.
A) luckily B) unfortunately C) no way D) hopefully

6. The company its workers with all the tools they need.
A) supplies B) demands C) occupies D) includes

7. What is the weight of your brain?
A) 5-6% of your total body
B) 2-3% of your total body
C) 7*8% of your total body
D) 9-10% of your total body

8. What does seafood contain?
- A) Omega-3 fat
 - B) Omega-5 fat
 - C) Omega 6 fat
 - D) Omega 7 fat
9. The right food can make a person.....
- A) more handsome
 - B) less handsome
 - C) less intelligent
 - D) more intelligent
10. Food we take affects
- A) our brain
 - B) our leg
 - C) our arm
 - D) our foot
11. She was seriously in a car accident.
- A) ignored
 - B) injured
 - C) bittered
 - D) ashamed
12. Jane is nine month She will be having her baby any day now.
- A) innate
 - B) out of sight
 - C) obvious
 - D) pregnant
13. Shakespeare's Romeo and Juliet is a Both characters die at the end.
- A) comedy
 - B) science-fiction
 - C) tragedy
 - D) adventure
14. If you want advice, you should go to a lawyer.
- A) legal
 - B) illegal
 - C) informal
 - D) interesting
15. Without proof, you can not him of stealing your wallet.
- A) accuse
 - B) damage
 - C) injure
 - D) borrow

16. He a muscle in his shoulder, so he can't play in the game tonight.
A) destroyed B) injured C) dreamed D) found
17. When I was in the hospital, my health paid for everything.
A) insurance B) card C) credit D) licence
18. He was in a because he discovered that someone had stolen his computer.
A) anger B) guilt C) rage D) happiness
19. However, some researchers doubt that rage is actually a "new" problem.
A) But there are researchers who believe that road rage existed for a long time.
B) But some researchers don't believe that road rage exists.
20. They believe that the recent attention given to road rage is the result of the media's desire to sell more papers or increase their number of viewers.
A) Some researchers think that people in the media want more people to buy their newspapers or watch their TV shows. That is the only reason they focus so much on road rage.
B) Some people in the media think that if they write about road rage a lot, the number of road rage incidents will increase.
21. She has written more than ten books on education. She is an on the subject.
A) expert B) engineer C) doctor D) student
22. Take your umbrella. The weather report said that rain is later this afternoon.
A) likely B) usually C) occasionally D) never
23. The service in that restaurant was terrible. I'm going to write a letter of to the manager.
A) apology B) refusal C) complaint D) appreciation

24. If you want to lose weight, you must the amount of food that you eat.
 A) decline B) refuse C) accept D) reduce
25. Students who have too many will have repeat the course.
 A) absences B) trials C) complaints D) papers
26. Often, teenagers sleep more than they should. T F
27. There are scientific reasons that explain why teenagers have difficulty sleeping at night. T F
28. The brains of teenagers are the same as the brain of adults. T F
29. Teenagers can do their best school work in the early morning. T F
30. It is easier for adults to fall asleep at night than teenagers. T F
31. Children learn at different Some learn quickly, others more slowly.
 A) rates B) scales C) portions D) estimation
32. These scientists do on the brain and how different foods affect it.
 A) correction B) research C) mistake D) subject
33. Artists are people. They are always thinking of new ideas.
 A) handsome B) beautiful C) creative D) lazy
34. Superman – The movie was the first in a long of superman movies.
 A) sorts B) types C) trials D) series
35. This is a very smart class. Everyone's grades are far above the
 A) average B) time C) scale D) rate

36. My class students from South America. Two of my classmates were Colombian.
A) outside B) included C) contained D) inside
37. They own two of dishes, one for everyday use and one for special meal.
A) quick B) series C) sets D) rapid
38. Some animals sleep during the day and are at night.
A) active B) passive C) lazy D) unique
39. What happens to your eyes when you dream?
A) Moving
B) Stoping moving
C) Opening
D) Seeing
40. Why do people need sleep?
A) Everyone knows
B) 50% of people know
C) 75% of people know
D) No one really knows
41. They want to replace their old car.
42. Recent developments in medical research encourage us to hope.
43. The computer, automobile, and airline industries all employ engineers.
44. We couldn't keep up with the other runners, so we gave up.
45. The country has just two major political parties.

Target Words / Phrases

Definitions

-----	:	change (one person or thing for another).
-----	:	large or important.
-----	:	changes that make something more advanced.
-----	:	people who design machines, roads bridges, etc.
-----	:	move as fast or do as much (as someone else)



APPENDIX E

TARGET VOCABULARIES

- ✓ Smart
- ✓ To create
- ✓ To invent
- ✓ To contain
- ✓ To supply

- ✓ Luckily
- ✓ Rate
- ✓ To do research
- ✓ Creative
- ✓ Series
- ✓ Average
- ✓ To include
- ✓ Set
- ✓ Active
- ✓ To replace
- ✓ Development
- ✓ Engineer
- ✓ To keep up with
- ✓ Major
- ✓ Expert
- ✓ Likely
- ✓ Complaint
- ✓ To reduce
- ✓ Absence
- ✓ To injure
- ✓ Pregnant
- ✓ Legal
- ✓ Tragedy
- ✓ To accuse somebody of doing something
- ✓ Insurance
- ✓ To be in a rage

APPENDIX F

MULTIPLE INTELLIGENCE INVENTORY FOR ENGLISH LANGUAGE TEACHERS

Directions: Rank each statement below 0, 1, or 2. Write 0 next to the number if the statement is not true. Write 2 in the blank if you strongly agree with the statement. A score of 1 places you somewhere in between. Compare your scores in different intelligences. What is your multiple intelligence profile? Where did you score highest? lowest?

Linguistic intelligence

- ___ 1. I write and publish articles.
- ___ 2. I read something almost every day that isn't related to my work.
- ___ 3. I pay attention to billboards and advertisements.
- ___ 4. I often listen to the radio and cassette tapes of lectures and book.
- ___ 5. I enjoy doing crossword puzzles.
- ___ 6. I use the blackboard, the overhead projector, or charts and posters when I teach.
- ___ 7. I consider myself a good letter writer.
- ___ 8. If I hear a song a few times, I can usually remember the words.
- ___ 9. I often ask my students to read and write in my classes.
- ___ 10. I have written something that I like.

Musical Intelligence

- ____1. I have no trouble identifying or following a beat.
- ____2. When I hear a piece of music, I can easily harmonize with it.
- ____3. I can tell if someone is singing off-key.
- ____4. I have a very expressive voice that varies in intensity, pitch, and emphasis.
- ____5. I often use chants and music in my lessons.
- ____6. I play a musical instrument.
- ____7. I listen to music frequently in the car, at work, or at home.
- ____8. I know the tunes to many songs.
- ____9. I often hum or whistle a tune when I am alone or in an environment where I feel comfortable.
- ____10. Listening to music I like makes me feel better.

Logical-Mathematical Intelligence

- ____1. I feel more comfortable believing an answer is correct if it can be measured or calculated.
- ____2. I can calculate numbers easily in my head.
- ____3. I like playing card games such as hearts, and bridge.
- ____4. I enjoyed math classes in school.
- ____5. I believe that most things are logical and rational.

- ____6. I like brain-teaser games.
- ____7. I am interested in new developments in science.
- ____8. When I cook, I measure things exactly.
- ____9. I use problem-solving activities in my classes.
- ____10 My classes are very consistent; my students know what to expect.

Spatial Intelligence

- ____1. I pay attention to the colors I wear.
- ____2. I take lots of photographs.
- ____3. I like to draw.
- ____4. I especially like to read articles and books with many pictures.
- ____5. I am partial to textbooks with illustrations, graphs, and charts.
- ____6. It is easy for me to find my way around in unfamiliar cities.
- ____7. I use slides and pictures frequently in my lessons.
- ____8. I enjoy doing puzzles.
- ____9. I was good at geometry in school.
- ____10. When I enter a classroom, I notice whether the positioning of the students and teacher supports the learning process.

Bodily-Kinesthetic Intelligence

- ____1. I like to go for long walks.
- ____2. I like to dance.
- ____3. I engage in at least one sport.
- ____4. I like to do things with my hand such as carving, sewing, weaving, building models, or knitting.
- ____5. I find it helpful to practice a new skill rather than read about it.
- ____6. I often get my best ideas when I am jogging, walking, vacuuming, or doing something physical.
- ____7. I love doing things in the outdoors.
- ____8. I find it hard to sit for long periods of time.
- ____9. I often do activities in my classes that require the students to move about.
- ____10. Most of my hobbies involve a physical activity of some sort.

Intrapersonal Intelligence

- ____1. I regularly spend time meditating.
- ____2. I consider myself independent.
- ____3. I keep a journal and record my thoughts.
- ____4. I would rather create my own lessons than use material directly from the book.
- ____5. I frequently create new activities and materials for my classes.

- ____6. When I get hurt or disappointed, I bounce back quickly.
- ____7. I articulate the main values that govern my life and describe the activities that I regularly participate in that are consistent with these values.
- ____8. I have hobbies or interests that I enjoy doing on my own.
- ____9. I frequently choose activities in the classroom for my students to work on alone or independently.
- ____10. I encourage quiet time and time to reflect in my classes.

Interpersonal Intelligence

- ____1. I prefer going to a party rather than staying home alone.
- ____2. When I have problems, I like to discuss them with friends.
- ____3. People often come to me with their problems.
- ____4. I am involved in social activities several nights a week.
- ____5. I like to entertain friends and have parties.
- ____6. I consider myself a leader and often assume leadership roles.
- ____7. I love to teach and show someone how to do something.
- ____8. I have more than one close friend.
- ____9. I am comfortable in a crowd or at a party with many people I don't know.
- ____10. My students help decide on the content and learning process in my classes.

Naturalist Intelligence

- ____1. I am good at recognizing different types of birds.
- ____2. I am good at recognizing different types of plants.
- ____3. I like to garden.
- ____4. I enjoy having pets.
- ____5. It's easy for me to tell the make and year of most cars.
- ____6. I often look at the sky and can tell you the different types of clouds and what kind of weather they bring.
- ____7. It's easy for me to tell the weeds from the plants.
- ____8. I like to spend time in the outdoors.
- ____9. I enjoy learning about rocks.
- ____10. I have plants in my home and Office.

(Reproduced from Christison, cited in LIN, P. Y., 2002)

APPENDIX G

An MI Inventory For Adults

Check those statements that apply in each Intelligence category. Space has been provided at the end of each Intelligence for you to write additional information not specifically referred to in the inventory items.

Linguistic Intelligence

_____ Books are very important to me,

_____ I can hear words in my head before I read, speak, or write them down.

_____ I get more out of listening to the radio or a spoken-word cassette than I do from television or films.

_____ I enjoy word games like Scrabble, Anagrams, or Password.

_____ I enjoy entertaining myself or others with tongue twisters, nonsense rhymes, or puns.

_____ Other people sometimes have to stop and ask me to explain the meaning of the words I use in my writing and speaking.

_____ English, social studies, and history were easier for me in school than math and science.

_____ Learning to speak or read another language (e.g., French, Spanish, German) has been relatively easy for me.

_____ My conversation includes frequent references to things that I've read or heard.

_____ I've written something recently that I was particularly proud of or that earned me recognition from others.

Others Linguistic Abilities:

Logical-Mathematical Intelligence

_____ I can easily compute numbers, in my head.

_____ Math and / or science were among my favorite subjects in school.

_____ I enjoy playing games or solving brain teasers that require logical thinking.

_____ I like to set up little "what if" experiments (for example, "What if I double the amount of water I give to my rosebush each week?")

_____ My mind searches for patterns, regularities, or logical sequences in things.

_____ I'm interested in new developments in science.

_____ I believe that almost everything has a rational explanation.

_____ I sometimes think in clear, abstract, wordless, imageless concepts.

_____ I like finding logical flaws in things that people say and do at home and work.

_____ I feel more comfortable when something has been measured, categorized, analyzed, or quantified in some way.

Other Logical-Mathematical Abilities:

Spatial Intelligence

_____ I often see clear visual images when I close my eyes.

_____ I'm sensitive to color.

_____ I frequently use a camera or camcorder to record what I see around me.

_____ I enjoy doing jigsaw puzzles, mazes, and other visual puzzles.

_____ I have vivid dreams at night.

_____ I can generally find my way around unfamiliar territory.

_____ I like to draw or doodle.

_____ Geometry was easier for me than algebra in school.

_____ I can comfortably imagine how something might appear if it were looked down on from directly above in a bird's-eye view.

_____ I prefer looking at reading material that is heavily illustrated.

Other Spatial Abilities;

Bodily-Kinesthetic Intelligence

_____ I engage in at least one sport or physical activity on a regular basis.

_____ I find it difficult to sit still for long periods of time.

_____ I like working with my hands at concrete activities such as sewing, weaving, carving, carpentry; or model building.

_____ My best ideas often come to me when I am out for a long walk or a jog, or when I'm engaging in some other kind of physical activity.

_____ I often like to spend my free time outdoors.

_____ I frequently use hand gestures or other forms of body language when conversing with someone.

_____ I need to touch things in order to learn more about them.

_____ I enjoy daredevil amusement rides or similar thrilling physical experiences.

_____ I would describe myself as well coordinated.

_____ I need to practice a new skill rather than simply reading about it or seeing a video that describes.

Other Bodily-Kinesthetic Abilities:

Musical Intelligence

_____ I have a pleasant singing voice.

_____ I can tell when a musical note is off-key.

_____ I frequently listen to music on radio, records, cassettes, or compact discs.

_____ I play a musical instrument.

_____ My life would be poorer if there were no music in it.

_____ I sometimes catch myself walking down the street with a television jingle or other tune running through my mind.

_____ I can easily keep time to a piece of music with a simple instrument.

_____ I know the tunes to many different songs or musical pieces.

_____ If I hear a musical selection once or twice, I am usually able to sing it back fairly accurately.

_____ I often make tapping sounds or sing little melodies while working, studying, or learning something new.

Other Musical Abilities;

Interpersonal Intelligence

_____ I'm the sort of person that people come to for advice and counsel at work or in my neighborhood.

_____ I prefer group sports like badminton, volleyball, or softball to solo sports such as swimming and jogging.

_____ When I have a problem, I'm more likely to seek out another person for help than attempt to work it out on my own.

_____ I have at least three close friends.

_____ I favor social pastimes such as monopoly or bridge over individual recreations such as video games and solitaire.

_____ I enjoy the challenge of teaching another person, or groups of people, what I know how to do.

_____ I consider myself a leader (or others have called me that).

_____ I feel comfortable in the midst of a crowd,

_____ I like to get involved in social activities connected with my work, school, or community.

_____ I would rather spend my evenings at a lively party than stay at home alone.

Other Interpersonal Abilities;

Interpersonal Intelligence

_____ I regularly spend time alone meditating, reflecting, or thinking about important life questions.

_____ I have attended counseling sessions or personal growth seminars to learn more about myself.

_____ I am able to respond to setbacks with resilience.

_____ I have a special hobby or interest that I keep pretty much to myself.

_____ I have some important goals for my life that I think about on a regular basis.

_____ I have a realistic view of my strengths and weaknesses

_____ I would prefer to spend a weekend alone in a cabin in the woods rather than at a fancy resort with lots of people around.

_____ I consider myself to be strong willed or independent minded.

_____ I keep a personal diary or journal to record the events of my inner life.

_____ I am self-employed or have at least thought seriously about starting my own business.

Other Interpersonal Abilities;

Naturalist Intelligence

_____ I like to spend time backpacking, hiking, or just walking in nature.

_____ I belong to some kind of volunteer organization related to nature (e.g., TEMA), and I'm concerned about helping to save nature from further destruction.

_____ I thrive on having animals around the house.

_____ I'm involved in a hobby that involves nature in some way (e.g., bird watching).

_____ I've enrolled in courses relating to nature at community centers or colleges (e.g., botany, zoology).

_____ I'm quite good at telling the difference between different kinds of trees, dogs, birds, or other types of flora or fauna.

_____ I like to read book and-magazines, or watch television shows or movies that feature nature in some way.

_____ When on vacation, I prefer to go off to a natural setting (park, campground, hiking trail) rather than to a hotel/resort or city/cultural location.

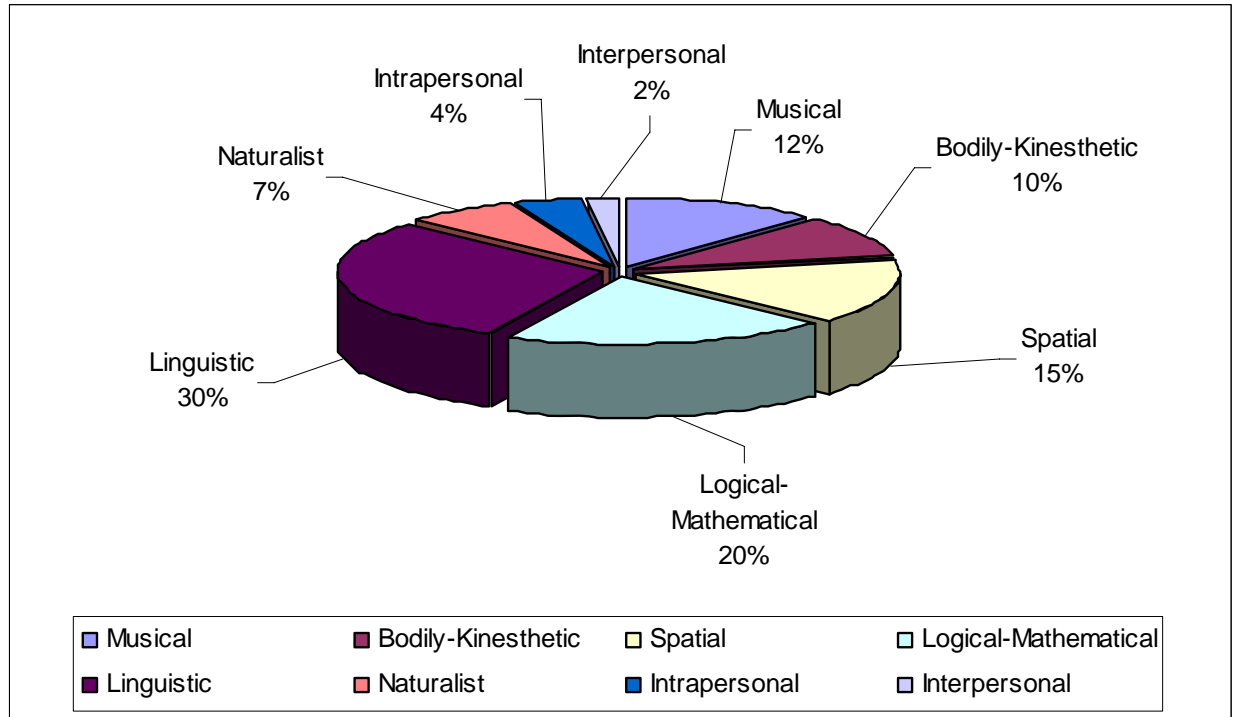
_____ I love to visit zoos, aquariums, or other places where the natural world is studied.

_____ I have a garden and enjoy working regularly in it.

Other Naturalist Abilities;

APPENDIX H

FIGURE 3: THE TEACHER'S INTELLIGENCE PROFILE



(Source: Armstrong, T. (2000). Multiple Intelligences in the classroom. Alexandria, VA: ASCD.)

APPENDIX I

FIGURE 4: EXPERIMENTAL GROUP'S STUDENTS' MOST DOMINANT INTELLIGENCE AREAS

