

T.C.
ABANT İZZET BAYSAL UNIVERSITY
THE INSTITUTE OF EDUCATIONAL SCIENCES

**AN EXPERIMENTAL STUDY ON THE EFFECTS OF READING
STRATEGIES INSTRUCTION BASED ON LEARNING STYLES ON
READING COMPREHENSION**

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ABANT İZZET BAYSAL UNIVERSITY
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THE DEPARTMENT OF ENGLISH LANGUAGE TEACHING

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READING COMPREHENSION**

Master of Arts Thesis

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This thesis which is titled as an **Experimental Study on the Effects of Reading Strategies Instruction Based on Learning Styles on Reading Comprehension** and presented by Nazan Mge UYSAL has been approved as a thesis of Master of Arts in English Language Teaching.

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ABSTRACT**THE EFFECTS OF READING STRATEGIES INSTRUCTION
BASED ON LEARNING STYLES ON READING COMPREHENSION****Uysal, Nazan Müge****M.A. Program in English Language Teaching****Supervisor: Assist. Prof. Dr. Kadir Vefa TEZEL****November, 2011, 116 pages**

This thesis aims to identify the effects of reading strategies instruction based on learning styles on reading comprehension of students. A total of 52 students participated in the study. There was an experiment and a control group in the study. There were 26 students in each group. Reading strategy instruction included teaching and practicing two cognitive language learning strategies that help to improve reading comprehension; note-taking and summarizing. The design of the courses was based on learning styles and courses were designed in the light of the 4MAT Model. Therefore, at the beginning of the study, participants in the experiment group were asked to complete Kolb's Learning Style Inventory (Version 3.1, 2005). The results of the inventory revealed learning style preferences of the learners in the experiment group. According to the results of the survey, there were 17 "assimilating" style learners, 4 "accommodating" style learners, 2 "converging" style learners whereas just one "diverging" style learner in the experiment group.

Before reading strategies instruction was given, participants in the experiment group and the control group were asked to take a test consisting of different reading texts and questions concerning note-taking strategy. The test also included questions

assessing the use of graphic organizers as note-taking devices. The results of the test showed there was no statistically significant difference between the experiment and the control group at the beginning. Thereafter, note-taking strategy instruction was given to the participants in the experiment group. Meanwhile learners in the control group were taught reading through conventional method without the inclusion of strategy instruction based on learning styles. Following instruction procedure, the same test was administered to the experiment and the control group. The results of the post-test indicated that there was statistically significant difference between the experiment and the control group.

Before summarizing strategy instruction, a test consisting of a reading passage to be summarized was given to the participants in the experiment and the control group. The results of the test showed there was not statistically significant difference between the experiment and the control group. After that, participants in the experiment group were given summarizing strategy instruction based on their identified learning styles while participants in the control group were taught reading through conventional methods. Afterwards, the same test was administered to see the differences between the experiment and the control group and the statistical analysis of the test results showed that there was statistically significant difference between the two groups. Thus, the results of the analysis revealed that reading strategies instruction based on learning styles was effective in terms of increasing comprehension of reading texts and improving reading skill of students.

Key words: Language learning strategies, learning styles, accommodating learning style, assimilating learning style, converging learning style, diverging learning style, the 4MAT Model.

ÖZET

ÖĞRENME STİLLERİNE DAYALI OKUMA STRATEJİLERİ EĞİTİMİNİN OKUDUĞUNU ANLAMA BECERİSİ ÜZERİNE ETKİLERİ

Uysal, Nazan Müge

İngilizce Öğretmenliği Yüksek Lisans Programı

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Bu tez çalışması, öğrenme stillerine dayalı okuma stratejileri eğitiminin öğrencilerin okuduğunu anlama becerisi üzerine etkilerini belirlemeyi amaçlamıştır. Bu çalışmaya toplam 52 öğrenci katılmıştır. Çalışmada bir deney ve bir kontrol grubu kullanılmıştır. Her bir grup 26 öğrenciden oluşmuştur. Okuma stratejisi eğitimi okuma becerisini geliştirmeye yardımcı olan iki bilişsel dil öğrenme stratejisi olan “not alma” ve “özetleme” stratejilerinin öğretimi ve kullanımından oluşmuştur. Ders planları öğrenme stillerine dayandırılmıştır ve dersler 4MAT Modeli ışığında tasarlanmıştır. Bu yüzden çalışmanın başında deney grubundaki katılımcılardan Kolb’un Öğrenme Stilleri Envanterini (Versiyon 3.1, 2005) tamamlamaları istenmiştir. Envanterin sonuçları deney grubundaki öğrencilerin öğrenme stili tercihlerini ortaya çıkarmıştır. Anket sonuçlarına göre, deney grubunda 17 tane “özümseyen”, 4 tane “yerleştiren”, 2 tane “ayrıştıran” ve sadece 1 tane “değiştiren” öğrenme stiline sahip öğrenci olduğu görülmüştür.

Okuma stratejileri eğitimi verilmeden önce, deney ve kontrol grubundaki katılımcılardan farklı okuma metinlerinden ve not alma stratejisiyle ilgili sorulardan oluşan bir testi cevaplandırmaları istenmiştir. Ayrıca test, not alma araçları olarak kullanılan grafik düzenleyicilerin kullanımını ölçen soruları içermiştir. Testin sonuçları çalışmanın başında deney ve kontrol grubu arasında istatistiksel olarak anlamlı bir fark olmadığını göstermiştir. Daha sonra, deney grubundaki öğrencilere not alma stratejisi

eđitimi verilmiřtir. Bu esnada kontrol grubundaki řđrenciler okuma becerisini řđrenme stillerine dayalı strateji eđitimi olmaksızın geleneksel yřntemle řđrenmiřtir. Eđitim sřrecini takiben aynı test hem deney hem de kontrol grubuna uygulanmıřtır. Son testin sonuřları deney ve control grubu arasında istatistiksel olarak anlamlı bir fark olduđunu gřstermiřtir.

řzetleme stratejisi eđitiminden řnce, deney ve kontrol grubundaki katılımcılara řzetlenmesi beklenen bir okuma parřasından oluřan bir test verilmiřtir. Testin sonuřları iki grup arasında istatistiksel olarak anlamlı bir fark olmadıđını gřstermiřtir. Daha sonra, deney grubundaki katılımcılara řđrenme stillerine dayalı řzetleme stratejisi eđitimi verilirken kontrol grubundaki katılımcılar okuma becerisini geleneksel yřntemle řđrenmiřlerdir. Ardından, deney ve kontrol grubu arasındaki farklılıkları gřrmek iřin aynı test uygulanmıřtır ve test sonuřlarının istatistiksel analizi iki grup arasında anlamlı fark olduđunu gřstermiřtir. Sonuř olarak analiz sonuřları řđrenme stillerine dayalı okuma stratejileri eđitiminin řđrencilerin okuduđunu anlama becerisini artırması ve okuma becerisini geliřtirmesi ařısından etkili olduđunu ortaya ııkarmıřtır.

Anahtar kelimeler: dil řđrenme stratejileri, řđrenme stilleri, yerleřtiren řđrenme stili, řzřmseyen řđrenme stili, ayrıřtıran řđrenme stili, deđiřtiren řđrenme stili, 4MAT Modeli.

To my dear Mother.....

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all materials and results that are not original to this work. /..... /2011

Nazan Müge UYSAL

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CHAPTER I

1. INTRODUCTION

This chapter presents background to the study followed by the purpose and the significance of the study. Next, the research questions are stated and the limitations to the study are presented along with the definitions of terms.

1.1. Background of the Study

The current age, which is also interchangeably referred to as the Computer Age or Information Era, is characterized by the ability of individuals to transfer information freely, and to have instant access to knowledge that would have been difficult or impossible to find previously. In this rapidly changing world, reading is, definitely, a must to access to knowledge. Reading, as defined by Kaplan (2002: 51), is “the ability to derive understanding from written text” or “reading can best be understood as a combination of skills and abilities that individuals bring to bear as they begin to read”. Indeed the process is more complicated than that. As reading is a complex process, our understanding of reading, both in terms of theory and practice, has changed considerably.

Our understanding of the nature of reading both in terms of theory and practice has changed considerably as we have realized the complexities involved in it. In the mid- to late 1960's reading was seen as a reinforcement for oral language instruction. During the popularity of audiolingualism, the struggle to teach reading was based on using reading to examine grammar and vocabulary, or to practice communication. This

view, later, started to change due to two major concerns- changing ESL/EFL institutional needs and changing views of reading theory. In the late 1960's, there appeared a need to prepare large numbers of ESL students with the advanced academic skills required for the university level. However, the audio-lingual method was not able to meet this need due to its emphasis on oral skills. Through the early to mid- 1970's, several researchers argued for the greater importance of reading. As a result of the research and persuasive arguments of Goodman and Smith (1971), "a psycholinguistic model of reading" emerged, which claims that reading is not primarily a process of picking up information from the page word-by-word or letter-by letter. Rather it was considered as an active process of comprehending in which readers do not focus on every word but read in a rapid manner but at the same time employ certain strategies such as using prior knowledge, making predictions about the upcoming information and confirm predictions and so on. Whereas 1970's was a time of transition from one dominant view to another, 1980's was a decade of extension in terms of reading theory and practice (Grabe, 1997). With the emergence of the interactive models of reading known as bottom-up and top-down processing our understanding concerning the mental activities taking place in readers' minds shifted. Researchers recognized that these two perspectives are complementary to each other; one is not over the other.

As complex cognitive processes such as reading are not easy to define or simple definitions may be misleading, descriptions of basic information about the features of reading would be more helpful to define what reading is. Grabe expresses six fundamentals of reading. These six fundamental features start with the fact that fluent reading is rapid; the reader needs to maintain the flow of information at a sufficient rate to make connections and inferences vital to comprehension, fluent reading is by definition a rapid process. The various bits of information being activated at any moment in working memory need to be active simultaneously if the information is to be integrated for understanding. Secondly, reading is an interactive process. The reader makes use of information from his/her background knowledge as well as information from the printed page. Reading is interactive in another sense that many skills work together simultaneously in the process. Thirdly, reading is comprehending; the reader expects to understand what s/he is reading. Fourthly, reading is flexible. The reader

employs a range of strategies to read efficiently. Some of these strategies include adjusting the reading speed, skimming ahead, considering titles and headings, text structure information and so on. Fifthly, reading is a gradual process. It develops gradually; the reader does not become fluent suddenly. Rather, reading is the product of long-term effort and gradual improvement. Finally, reading is purposeful. The reader has a purpose for reading, whether it is for information, pleasure, research, and so on (Grabe, 1991).

When it comes to second/foreign language learning situations, reading receives a special focus because of some reasons. First of all, many language learners consider reading as one of the most important goals when learning a language because they want to be able to read for information or pleasure in the target language or they need to read fluently for study purposes or for their careers. Second, exposure to written texts can enhance the process of language acquisition in general. Good readers are potentially good writers and being exposed to written texts in the target language means being familiar with different genres, ways of organizing content, vocabulary, idioms, syntactic structures, and the like. Therefore, reading increases competence in the target language. Third, comprehending the written text is a significant way of initiating research in academic contexts. In order to fulfill certain assignments or tasks like holding a discussion, preparing a project or research paper or writing a report on a specific topic, the learner should be able to read in a fluent way.

The main problem in reading lies somewhere in between decoding and comprehension processes. In decoding, which is the bottom-up process, “the reader is assumed to decode precisely (in the case of English) from left to right, from letters into words, and from words into larger grammatical units in retrieving the writer’s meaning, step by step from the text” whereas in comprehending, which is the top-down process, the reader plays a “psycholinguistic guessing game and do not decode in a precise manner but attack the text with expectations of meaning developed before and during the process, take in whole chunks of text” to interpret the meaning or confirm expectations (Eskey, 2005: 566). The process from text to brain (decoding) should be accompanied with from brain to text process (comprehension).

Research has shown that one of the most effective ways to increase comprehension rate and go beyond decoding process is giving strategy instruction to learners (Grabe, 1991; Grabe, 2002; Grabe, 2004; Shis, 1992). Oxford states that “language learners are often frightened by the new language, its many complex structures and its tens of thousands of words and expressions. They often do not know how to approach the subject in either a cognitive or an emotional sense. Language learning is not like learning mathematics, biology or typing; it requires an understanding of the nature of language, and the process of language learning, including useful techniques and strategies” (Oxford, 1990: 48). One of the critical components for reading comprehension is the ability to use appropriate reading strategies and to know when to use them and in what combinations, depending on different reading purposes and tasks. Moreover, as discussed earlier, one of the features of reading is that it is a gradual process. Learners need certain amount of time to be fluent and proficient in the process. Providing learners with strategy instruction is a way to lessen this long development period as learning strategies can help learners become more independent, autonomous, lifelong and strategic learners (Allwright, 1990; Little, 1991, as cited in Oxford, 1990). Therefore, providing strategy instruction should be an essential part of foreign language reading classrooms.

When teachers enter the classroom, they meet different learners coming from different backgrounds with different study habits and variable approaches to learning. These learners use different actions or behaviors which are referred to as learning styles and they help them learn.

Dunn & Griggs (1988) define learning styles as “the biologically and developmentally imposed set of characteristics that make the same teaching method wonderful for some and terrible for others” (as cited in Oxford: 2003: 2). Recent research indicates that language learning style, also known as general approach to language learning, has a major influence on language learning.

A given strategy is neither good nor bad; it is essentially neutral until the context of its use is thoroughly considered. There are some factors that make a strategy positive

and helpful for a learner. “A strategy is useful if the following conditions are present: (a) the strategy relates well to the L2 task at hand, (b) the strategy fits the particular student’s learning style preferences to one degree or another, and (c) the student employs the strategy effectively and links it with other relevant strategies. Strategies that fulfill these conditions “make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations” (Oxford, 1990: 8). This brings us to the conclusion that strategy instruction should be equipped with activities addressing students’ learning styles that will make instruction more effective and meaningful for each and every learner.

1.2. Statement of the Problem

Reading skill which requires the coordination and operation of attention, memory, perceptual processes, and comprehension processes is the primary way of getting information, either for study purposes or for pleasure in a foreign language; it also serves as a bridge to increase one’s command over the target language because being exposed to written texts in the target language leads to becoming familiar with different content information, vocabulary, idioms, syntactic structures, and the like. Therefore, reading increases overall competence in the target language.

Although reading plays a vital role in foreign language classrooms, most of the students generally have difficulty in comprehending the texts. Since comprehension is one of the six basic issues and one of the most significant factors in reading process, it deserves to get great amount of importance. In most EFL contexts, the difficulty of comprehension is underestimated. Kaplan (2002) claims that even one of the basic reading purposes, reading for general understanding, is not as easy to process as it seems. According to Kaplan, in most L2 reading instruction, reading for general understanding is the primary goal for reading. The main purpose in this reading is understanding main ideas and a subset of supporting ideas and information. Although it is often noted as “basic” and “general”, it is difficult to carry out fluently. Reading for general understanding, under normal processing rates, requires a very large recognition

of words, a high level of automaticity, a rapid reading speed for text-information integration and the ability to comprehend the overall text in a limited amount of time.

In foreign language classrooms, one of the most popular advice given by teachers to learners is to read more and more to be good at reading but this generally brings the fact that learners get more and more discouraged as they feel they cannot comprehend the texts even if they read a lot. That's mainly because learners do not approach reading in a strategic manner. Reading is not a matter of following the lines by eyes only. Without comprehension, gazing at a text can never serve any purpose. Certain strategies can help learners to become better readers. To that end, *language learning strategy instruction* seems to be a promising tool to help teachers increase their learners' comprehension of reading texts, which is a major problem in most EFL classrooms.

In strategy instruction individual differences must be taken into consideration because considerable individual differences such as gender, age, social status, motivation, attitude, aptitude, culture, and the like exist among individuals; so what works for one learner might not work for another. Of all these factors, one of the most significant that causes differences in learning performance is *the learning styles*. That is, the ways in which an individual characteristically acquires, retains, and retrieves information. As Felder & Henriques (1995) also put forward, although learning styles are vital in receiving information and learning, most of the time serious mismatches may occur between the learning styles of students in a class and the teaching style of the instructor. Certain unfortunate potential outcomes may come up as a result of such a mismatch just like unresponsive and hostile classes with bored and inattentive learners who get discouraged about the course and do poorly on tests (Felder & Henriques, 1995).

It may be the case that the failure of students in foreign language classrooms is not because they are bad or unsuccessful, but because teachers may not design input in ways that are in compatible with learners' preferred ways of receiving information. As Ehrman (2003: 318) also states, "as with any type of instruction,

strategy instruction is more effective when adjusted for students' learning styles". Therefore, students' diversity of learning styles and needs should systematically be taken into account in the presentation of strategy instruction.

At Abant İzzet Baysal University Preparatory School where the study takes place, learners do practice reading skill with the reading texts and exercises included in their textbooks and systematic reading strategy instruction is not given. On the other hand, reading is generally reported as one of the most difficult skills in language learning by preparatory school students of Abant İzzet Baysal University and they consistently ask for help to develop this skill.

1.3. Purpose of the Study

The purpose of this study is to devise effective instructional techniques in order to increase the reading comprehension rates of students at the preparatory school of Abant İzzet Baysal University. The students will be given strategy instruction throughout an entire level to help improve their reading comprehension ability. For that purpose, two cognitive learning strategies, namely, note-taking, and summarizing will be taught to learners. To help maximize the benefit of strategy instruction, at the beginning, students' learning styles will be identified and strategy instruction will be designed and given according to identified learning styles. The reading course that incorporated strategy instruction was designed using the 4MAT Model (McCarthy, 1980) which includes four basic quadrants, each representing a learning style: Diverger, Assimilator, Converger, and Accomodator. Both left and right hemispheric preferences are imposed on each of the four quadrants in this model, thereby forming an eight-step cycle. Instead of modeling learning behaviour as linear, Mccarthy conceives it as a spiraling circle and the teacher follows the circle to address four different learning types considering brain hemispheric preferences.

1.4. Research Questions

This study aimed to seek answers to the following questions:

1. What are the learning style preferences of the students?
2. Does reading strategies instruction based on students' identified learning styles increase students' comprehension of reading texts?
3. To what extent are differences seen between students who receive reading strategies instruction based on their identified learning styles and students who are taught reading without the inclusion of reading strategies instruction on the basis of the identification of learning styles?

1.5. Data Collection

In order to assess the participants' learning styles, the "Kolb Learning Style Inventory" (Version 3.1, 2005), which is a comprehensive model was used. Regarding language learning strategy instruction, Oxford's language learning strategies taxonomy (Oxford, 1990), which includes note-taking and summarizing as subcategories of the cognitive strategies, was taken as reference. For the design of the lessons in the light of learning styles, the 4MAT Model (McCarthy, 1980) which is based on Kolb's Learning Style Inventory and brain hemisphericity studies was used. The 4MAT model requires that instruction include four basic phases to address the needs of learners who fall into one of the four different learning styles which are Diverger, Assimilator, Converger, and Accomodator. In the 4MAT Model, a lesson plan is made up of four basic parts to form the learning cycle: *Integrating experience with the "self"*, *Concept Formulation*, *Practice and Personalization* and *Integrating Application and Experience*. Moreover, each quadrant in the system is made up of two parts, addressing both left and right brain dominances. The courses for reading strategy instruction will be designed according to this model.

To evaluate the effect of reading strategy instruction based on identified learning styles, this study included one experiment and one control group, and it was thus

designed as an experimental research study. The effects of reading strategy instruction were analyzed through a pretest- posttest design. In order to assess to what extent reading strategies instruction based on learning styles increased students' comprehension of reading texts in the experiment group, paired sample t-test design was used. On the other hand, the differences between the experiment and the control group were examined using independent sample t-test design.

1.6. Significance of the Study

This study was also undertaken to raise teachers' awareness concerning their own learning and teaching styles. Most teachers are known to have a tendency to teach in the way they were taught or in the way they prefer to learn. Yet, one of the main reasons that arouse conflicts in the teaching context is reported to be the mismatches between teachers' teaching styles and learners' learning styles. This mostly produces negative results not only for learners, but also for teachers. For this reason, it is vital for teachers to be aware of the general learning style profiles of their students and orchestrate the material in accordance with those learning preferences in order to create an optimal learning context.

Strategy instruction is documented to be more effective when adjusted for students' learning styles (Ehrman, Leaver and Oxford, 2003). This study was initiated to contribute to the field as an integrated study combining language learning strategy instruction with learning styles.

Unlike this study, the studies conducted with respect to the relationship between learning styles and language learning strategies generally include the ones that investigate either the relationship between these two terms or learner preferences of styles and strategies. Experimental studies aiming to give strategies based instruction are limited in number, and L2 learning strategy instruction has had mixed results, as noted by Dörnyei (1995) and Oxford (2001). One main reason for this might be that the students' diversity of learning styles and needs were not systematically taken into

consideration while strategy instruction was given.

1.7. Limitations of the Study

The first limitation of this study was that it was restricted to the 52 preparatory school students studying at the preparatory school of Abant İzzet Baysal University. However, the study can be applied to the other students studying at different foreign language learning environments.

Another limitation of the study could be the duration of strategy instruction which lasted for five weeks.

1.8. Definitions of Terms

Language Learning Strategies

“Learning strategies are specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations” (Oxford, 1990: 8)

Learning Styles

Learning styles are referred to as “the ways in which an individual characteristically acquires, retains, and retrieves information” (Felder&Henriques, 1995, p. 21). Dunn& Griggs (1988) define the term as “the biologically and developmentally imposed set of characteristics that make the same teaching method wonderful for some and terrible for others” (as cited in Cohen&Weaver, 2005: 8).

Convergent Learning Style

This group of learners wants to know how things work and learns through hands-on activities. The convergent learning style “prefers dealing with technical tasks and problems rather than social and interpersonal issues. The greatest strength of this

style lies in problem solving, decision making, and the practical application of ideas; these people are controlled in their expression of emotion” (Kolb, 1984: 77).

Divergent Learning Style

The divergent learning style needs personal involvement in the learning experience and learns through social interaction. “The greatest strength of this orientation lies in imaginative ability and awareness of meaning and values. These learners can view concrete situations from many perspectives and organize many relationships into a meaningful gestalt” (Kolb, 1984: 77).

Assimilative Learning Style

“The main strength of this orientation lies in inductive reasoning and analytic thinking. People with this learning style learns by thinking through ideas and abstract concepts, they are less focused on people” (Kolb, 1984: 78).

Accomodative Learning Style

Accomodative learners prefer a variety of activities and learn through self-discovery. “The greatest strength of this orientation lies in doing things, carrying out plans and tasks and getting involved in new experiences; people with this orientation tend to solve problems in an intuitive trial-and-error manner and rely on other people for information rather than on their own analytic ability” (Kolb, 1984: 78).

The 4MAT System

“The 4MAT System is an instructional model that provides a systematic approach to organizing and delivering instruction that addresses the learning styles and hemispheric differences of learners” (Wilkerson& White, 1988: 357).

CHAPTER II

2. LITERATURE REVIEW

In this chapter, first of all, language learning strategies will be defined and relevant literature will be presented. Next, learning styles will be defined and relevant literature concerning learning styles and second language reading will be discussed.

2.1. Language Learning Strategies

2.1.1. The definition and characteristics of language learning strategies

Language learning strategies (LLSs henceforth) are “specific behaviors or thought processes that students use to enhance their own L2 learning” (Oxford, 2003: 9). Different researchers have attempted to refer to the concept with different terms. For instance, Wesche (1997) and Plitzer and McGroarty (1985) preferred to use the term “learning behaviours” whereas Seliger (1984) used the term “tactics”. We further see Stern (1992) calling strategies “techniques” and Rubin (1975) and Larsen-Freeman; Long (1991); Oxford (2003) and Cohen & Weaver (2005) opting for the term “strategy”. Wenden (2002) prefers to use “learner strategies in language learning” (LSLL). In this study, “language learning strategies” will be used to define the concept.

The word strategy comes from the ancient Greek word *strategia* meaning “steps or actions taken for the purpose of winning a war; generalship or the art of war” (Oxford, 1999: 8). More specifically, the term involves “the optimal management of troops, ships, or aircraft in a planned campaign” (Oxford, 1999: 7). This military

meaning is not attributable to foreign/second language context. Instead, in the context of language learning, broadly speaking it refers to having the control over a process and being goal-directed or it means “a plan, step, or conscious action toward achievement of an objective” (Oxford, 1999: 8). Yet, Oxford considers the above given definitions inadequate and claims that the following would be a better and richer explanation: “language learning strategies are specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective and more transferrable to new situations” (Oxford, 1999: 8). On the other hand, Cohen (2001: 5) makes a similar definition of language learning strategies as; “strategies having the explicit goal of improving the learner’s knowledge and understanding of the L2, as well as strategies for using the language that has been learned or for getting around gaps in language proficiency”. As it is obvious from the way Oxford and Cohen define the term, language learning strategies are of great importance to researchers and practitioners in the field.

Even though the terminology used for language learning strategies is not uniform among the scholars in the field, there are a number of basic characteristics accepted by the majority. Oxford (1990) summarizes LLSs by listing twelve key features:

Language learning strategies,

- contribute to the main goal, communicative competence.
- allow learners to become more self-directed.
- expand the role of teachers.
- are problem oriented.
- are specific actions taken by the learner.
- involve many aspects of the learner, not just the cognitive.
- support learning both directly and indirectly.
- are not always observable.
- are often conscious.
- can be taught.
- are flexible.

- are influenced by a variety of factors.

(Oxford, 1990: 9)

2.1.2. Theoretical background of language learning strategies

Inevitable transition from methods

The recognition of the importance of learner as an active participant in the language learning context is the starting point of the emergence of the language learning strategy theory. The emerging importance of language learning strategies may be said to be a result of the disillusionment with following language teaching methods in language teaching. Over the years, the role of learner, the role of teacher, teaching techniques and principles have all changed in the effort to devise the best method which can work for all learners and learning contexts. Nunan (1991) notes his strong reservations about the value of methods as:

“Despite their diversity, all methods have one thing in common. They all assume that there is a single set of principles which will determine whether or not learning will take place. Thus, they all propose a single set of precepts for teacher and learner classroom behavior, and assert that if these principles are faithfully followed; they will result in learning for all. Unfortunately, little evidence has been forthcoming to support one approach rather than another, or to suggest that it is the method rather than some other variable which caused learning to occur” (as cited in Adamson, 2005: 616).

The impossibility of the desire to find the one-fits-all approach or the best method in language teaching pedagogy has recently been recognized, giving rise to the concept of “Post-method Era” in foreign language teaching. What is meant by “Post-method Era” is that around the world there are different language teaching contexts and each and every context has its own unique, specific properties, needs and problems. Trying to find one all-embracing method to solve all these problems or

meet the needs is totally a miracle. Therefore, it is preferable to know the specific teaching context well and try to decrease the negative factors as much as possible and increase the opportunities which help learners and their learning best. As the most important component of a teaching context is the learner, it is vital that the learner be the main focus in teaching, and reaching the learner is the main issue for learning to occur. This brings us to the point that there are considerable individual differences in language learning such as gender, age, social status, motivation, attitude, aptitude, culture, etc.; so what works for one learner might not work for another. Therefore, none of the methods and techniques has proved that they can work all the time, in all classes, with all students (Kumaravadivelu, 1994).

As Wenden (2002) outlines, with the recognition of the centrality of the language learner to the teaching and learning process, the terms “learner-centered”, “student-centered”, “learner development” and “learner autonomy” appeared as modifiers of instruction in 1970’s. The introduction of all these new terms into the foreign language education discourse directed the main focus to the fact that learners and learner acts are important, that learners are active participants in the learning context, and that learners’ being autonomous and life-long learners are vital in the learning process. This new perspective has considerably changed the methods, materials, and language learning tasks used in language classrooms. Learner-centered tasks which require active learner involvement both in the course of the activity and in self-assessment, creativity and self-direction have taken the dominant place of regular drill exercises and long teacher talks.

Learner-centered teaching also means that learners can take active roles in curricular decisions like choosing what to study and how, or in curricular design such as selecting the content for instruction. The needs-based model, for example, is one type of learner-centered curriculum which is based on the analysis of the communicative needs of specific groups of learners rather than the target language. Negotiated-curriculum is another approach to learner-centered curriculum design which advocates that learners should be involved in the decision making process concerning content, method, and evaluation of the curriculum. Another effect of learner centeredness is the studies

searching to understand learner characteristics that distinguish learners from one another or learner differences that affect the learning of a foreign language. In the 1980's and 1990's studies in connection with socio-affective and cognitive variables like attitudes, motivation, social distance, language aptitude, intelligence, communication strategies, perceptual learning styles and learning strategies were conducted to solve the complexity of what factors affect "the active and autonomous learner" in the learning process (Wenden, 2002).

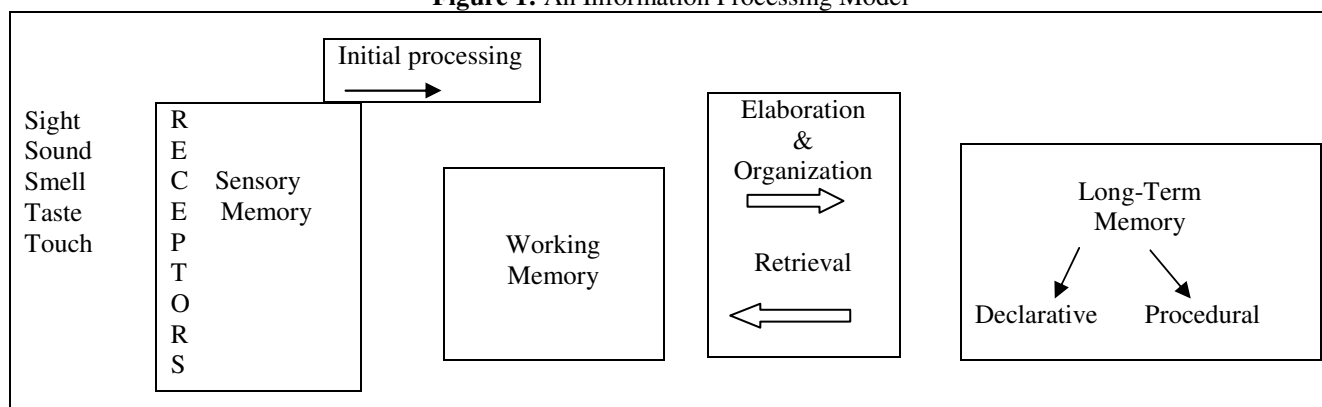
Origin of language learning strategies: A malleable factor to enhance learning

Language learning strategies are one of the learner-centered innovations that have shaped research and practice in the field of learner development starting from the 1970's. LLSs improve learning in order to complete pedagogical tasks by fostering learner's capacity to assume a more active, reflective, and self-directed role, which makes it process-oriented. Except for learning strategies, all the above listed factors like aptitude, motivation, intelligence or styles have been accepted as influential on the learning process but they all operate below consciousness level and are difficult to change. Yet, with the acceptance of language learning strategies as a research field and as one of the factors affecting success or failure, an accessible and changeable learner difference has been added to the list of learner differences (Wenden, 2002). As learners are considered making conscious attempts to influence their own learning, from the perspective of language learning strategy theory, language learning becomes a cognitive process resembling to other kinds of learning (Griffiths, 2004). Thus, LLSs are based theoretically on cognitive science, which accepts human cognition as the key to active processing of information.

As an outcome of the intellectual trends in North America, cognitive science caused the questioning of the behaviorist paradigm of learning in the 1960's and shifted the focus to the notion of an executive function that coordinates and regulates mental processes. As Cohen (2005: 5) very clearly puts it, "the cognitive theory approach was a departure from the behaviorist stimulus-response approach to learning.....the tendency was now directed toward a more reasoned, controlled learning of rules and

accepting that some rules were learnt or “acquired” automatically”. In addition, Wenden (2002) points out that some predominant SLA theories, especially the ones influenced by the Universal Grammar, viewed second language acquisition as an unconscious process which is similar to first language acquisition. Those theories ignored the conscious processes in SLA, thereby questioned the efficacy of language learning strategies.

In 1990's, based on cognitive theory, O' Malley and Chamot (1990) proposed an information processing theory of memory that explains the way second languages are learnt and the contribution of strategies to this process. In this model, language learning is likened to the learning of procedural knowledge or other complex cognitive skills (as cited in Wenden, 2002: p. 43). From the perspective of this theory, information comes through our sense receptors. At this time, selected items of information are attended to, identified and then sent to short-term memory. The information is stored in two different ways; either in short-term memory (currently referred to either sensory memory or working memory) which is defined as the active working memory, holding modest amount of information for a short period of time only or in long-term memory which is the storage place of information, and it can be represented as isolated elements or interconnected networks of information. In this paradigm new information is acquired through a four-stage encoding process that includes selection, acquisition, construction, and integration. In the selection stage, learners focus on specific information in the environment and transfer it to short-term memory. In the acquisition stage, learners actively transfer information from short-term memory to long-term memory for permanent storage. Construction is the third stage in which learners build connections between ideas in the short-term memory. At this point, information from long-term memory can be used to enrich learners' understanding or retention of the new ideas by providing schemata or connections for the organization of the new information. The final process is integration which serves to search prior information in long-term memory and transfer this knowledge to short-term memory. This complicated processing of information is demonstrated in Figure 1.

Figure 1: An Information Processing Model

(Wolfe, 2001: 77)

In this complex system, the mental operations that are responsible for encoding incoming information are referred to as processes whereas the changes that form as a result of these processes are called organizations of knowledge or knowledge structures. LLSs become operations at this point. They perform the function of facilitating the acquisition, storage, elaboration, retrieval or use of information (O'Malley&Chamot, 1990: 18; Wenden&Rubin, 1987).

Besides cognitive theory, research related to the features of good or successful language learners also contributed to the development of language learning strategies. Earlier studies regarding learners were studies investigating interlanguage (Corder, 1967; Selinker, 1972). Corder argued that language errors made by learners actually indicate the attempts to develop a language system; therefore, errors should be seen as indicators of improvement. Selinker in the seventies called this intermediate system "interlanguage" (IL) and again viewed learner errors as evidence of efforts to learn a new language. These views were significant in the sense that they reflect the attention on the learner and his/her attempts to learn a language. These led to a research thrust in the 1970's at discovering what type of deliberate actions (later called strategies) learners employ while learning a new language and how they employ these actions. Then, researchers like Rubin (1975), Stern (1975), Naiman *et al.* (1978) started to conduct studies on good, or successful, language learner, that is, "a learner who could approach the task of language learning competently and effectively" (Wenden, 2002: 36) and show the significance of shifting the attention to the learner in assisting him/her

to learn on his own (as cited in Griffiths, 2004). They were both motivated by learner-centered trends and also from studies which showed that even most improved teaching methods did not lead to better learning outcomes. All these studies had one common aim; findings from studies that try to explore the specifics of the good language learner would reveal the key to unlock the black box and the insights from what goes on in good learners' minds can guide teachers to help less successful ones. Therefore, it is clear that the primary educational goal of the early studies on learner strategies was the successful language learner and what these learners can teach us (Cohen, 2005).

Rubin (1975) in his well-known study, "*What the Good Language Learner Can Teach Us*", states the importance of three variables that help learners learn a second language in a successful way in spite of the teacher, the textbook, or the classroom situation. These are aptitude, motivation and opportunity. She also makes a list of seven features that good language learners possess, which she believes can be taught to poorer learners to enhance their learning process. Rubin (1975) claims that the good language learner; is a willing and accurate guesser, is comfortable with uncertainty and willing to try out guesses; he gathers and stores information in an efficient way and uses all the cues the setting offers and is able to narrow down the meaning. Moreover, the good language learner has a strong drive to communicate or to learn from communication. He is not inhibited and is willing to appear foolish if reasonable communication results, willing to make mistakes in order to learn and to communicate. In addition to focusing on communication, the good language learner attends to the form. He analyzes, categorizes and synthesizes, and tries to find schemes for classifying information. The good language learner also loves to practice. He is willing to repeat and monitors his own speech as well as the others'. He can learn from his mistakes. He not only attends to form but also to meaning. To illustrate, he knows that it is not sufficient to pay attention to grammar or to the surface form of speech. He attends to the context of the speech act, the relationship of the participants, rules of speaking, mood of the speech act and etc. (Rubin, 1975). In their pioneering research, Naiman *et al* (1978) found similar features that make a language learner good or successful. Naiman *et al* (1978) discovered that,

“good language learners are able to adapt learning styles to suit

themselves, are actively involved in the language learning process, are able to develop an awareness of language both as a system of rules and as a means of communication, are constantly working at expanding their language knowledge, develop the target language as a separate system which does not always have to be related to the first language, and are realistically aware of the demands of learning a language” (as cited in Griffiths, 2004: 12).

In recent years researchers have found that the list of features of the good language learner is too prescriptive and the success of a strategy for a given learner may depend on several other factors such as the nature of the task itself, the learning style preferences of learners, motivation, and learner’s level of language proficiency. On the other hand, it is accepted that information about the good language learner is highly significant in the sense that it can help us to a certain degree giving significant insights in the way of success of a learner (Cohen, 2005).

Having discovered that learner strategies are based on cognitive theory and strategies used by good language learners can be listed to a certain respect, in the 1980’s, researchers attempted to define and classify language learning strategies. However, as Oxford (1999) states, there is no one classification that is commonly agreed upon:

“It is important to remember that any current understanding of language learning strategies is necessarily in its infancy, and any existing system of strategies is only a proposal to be tested through practical classroom use and through research. At this stage in the short history of language learning strategy research, there is no complete agreement on exactly what strategies are; how many strategies exist; how they should be defined, demarcated, and categorized; and whether it is- or ever will be- possible to create a real, scientifically validated hierarchy of strategies... Classification conflicts are inevitable “ (Oxford, 1999: 17).

In short, it can be seen that researchers have made different classifications in

order to examine what language learning strategies are and how they can be categorized and conflicts seem to be inevitable at this attempt.

2.1.3. Taxonomies of Language Learning Strategies

Rubin's classification of language learning strategies

As there is a lack of commonly agreed upon taxonomy, in this section all well-known classifications will be introduced. Firstly, Rubin's (1981) classification will be followed to further the discussion. Rubin (1981) identifies three kinds of strategies which directly or indirectly contribute to language learning. Learning strategies which affect learning directly (including two subcategories, cognitive and metacognitive strategies), communication strategies and social strategies which affect the process indirectly constitutes these three kinds.

Strategies that affect learning directly

Rubin (1981) defines the first subcategory of strategies that affect learning directly, that is cognitive strategies. Cognitive strategies are steps or operations used in learning or problems solving which require direct analysis, processes or strategies through which an individual obtains knowledge or conceptual understanding. Cognitive strategies can be grouped into six types:

1. Clarification/Verification: learners use to verify or clarify their understanding of the new language,
2. Guessing/Inductive inferencing: learners use these strategies to derive explicit hypotheses about the linguistic form, semantic meaning or the speaker's intention out of the previously obtained linguistic or conceptual knowledge,
3. Deductive reasoning is a problem solving strategy in which the learner looks for and uses general rules in approaching the foreign or second language,
4. Practice refers to strategies that contribute to the storage and retrieval of language while focusing on accuracy of usage, e.g. repetition, rehearsal, experimentation, attention to detail.,
5. Memorization strategies serve to focus on the storage and retrieval of

language, e.g. mnemonic, key word techniques...

6. Monitoring refers to strategies in which the learner notices errors both linguistic and communicative.

The second subcategory Metacognitive learning strategies are used to supervise, control or self-direct language learning. They involve a variety of processes as planning, prioritizing, setting goals, and self-management.

Communication strategies

The second main category is communication strategies. These strategies help learners remain in the conversation. They focus on participating in a conversation and getting meaning, continuing to produce the target language despite limitations, e.g. miming, explicit indication of comprehension, approximating speaker's message.

Social strategies

The final category is made up of social strategies. Social strategies are those activities learners engage in and they afford them opportunities to be exposed to and practice their knowledge. They do not directly contribute to learning, but they put the student in an environment where practice is possible (Rubin& Wenden,). Table 1 is a chart of Rubin's taxonomy.

Table 1: Rubin's Classification of Language Learning Strategies

Generic strategy classification	Representative strategies	Definitions
<i>Learning Strategies</i>	A) Cognitive Strategies - Clarification/Verification - Guessing/Inductive Inferencing - Deductive Reasoning - Practice - Memorization - Monitoring	The steps or operations used in learning or problem-solving that require direct analysis, transformation, or synthesis of learning materials.
	B) Metacognitive Strategies	These strategies are used to oversee, regulate or self-direct language learning. They involve various processes as planning, prioritizing, setting goals, and self-management
<i>Communication Strategies</i>	-	They are less directly related to language learning since their focus is on the process of participating in a conversation and getting meaning across or clarifying what the speaker intended. Communication strategies are used by speakers when faced with some difficulty due to the fact that their communication ends outrun their communication means or when confronted with misunderstanding by a co-speaker
<i>Social Strategies</i>	-	Social strategies are those activities learners engage in which afford them opportunities to be exposed to and practise their knowledge. Although these strategies provide exposure to the target language, they contribute indirectly to learning since they do not lead directly to the obtaining, storing, retrieving, and using of language

(Rubin & Wenden, 1987: 23-27)

O'Malley and Chamot's classification of language learning strategies

Another classification comes from O'Malley and Chamot (1990) which is comprised of three distinct classes on the basis of the level or type of processing involved: metacognitive, cognitive and social/affective strategies.

Metacognitive strategies

The first class is Metacognitive Strategies which are higher order executive skills that may require planning for, monitoring, or evaluating the success of a

learning activity. These strategies are applicable to a variety of learning tasks. The subgroups of metacognitive strategies are: selective attention for special aspects of a learning task, planning the organization of written or spoken discourse, monitoring and reviewing attention to a task, monitoring comprehension or production while it is occurring, evaluating or checking comprehension after completion of a receptive language activity, or evaluating language activity after it has taken place.

Cognitive strategies

The second class includes Cognitive Strategies. They operate directly on upcoming information, manipulating it in ways that enhance learning. Cognitive strategies have three basic subgroups as rehearsal, organization and elaboration processes. Elaboration may also involve some other techniques like inferencing, summarizing, deduction, transfer and imagery. In application, cognitive strategies are generally limited to specific types of tasks.

Socio/affective strategies

Social/Affective Strategies represent a broad grouping that involves interaction with another person or control over affect. Similar to metacognitive strategies, they are applicable to a wide variety of tasks. Cooperation (working with others), questioning for clarification and self-talk are subgroups of this final category. O'Malley and Chamot's classification of LLSs is presented in Table 2 below.

Table 2: O'Malley & Chamot's Classification of Language Learning Strategies

Generic strategy classification	Representative strategies	Definitions
<i>Metacognitive strategies</i>	Selective attention	Focusing on special aspects of learning tasks, as in planning to listen for key words or phrases.
	Planning	Planning for the organization of either written or spoken discourse.
	Monitoring	Reviewing attention to a task, comprehension of information that should be remembered, or production while it is occurring.
	Evaluation	Checking comprehension after completion of a receptive language activity, or evaluating language production after it has taken place.
<i>Cognitive strategies</i>	Rehearsal	Repeating the names of items or objects to be remembered.
	Organization	Grouping and classifying words, terminology, or concepts according to their semantic or syntactic attributes.
	Inferencing	Using information in text to guess meanings of new linguistic items, predict outcomes, or complete missing parts.
	Summarizing	Intermittently synthesizing what one has heard to ensure the information has been retained.
	Deducing	Applying rules to the understanding of language.
	Imagery	Using visual images (either generated or actual) to understand and remember new verbal information.
<i>Social/affective strategies</i>	Transfer	Using known linguistic information to facilitate a new learning task
	Elaboration	Linking ideas contained in new information, or integrating new ideas with known information.
	Cooperation	Working with peers to solve a problem, pool information, check notes, or get feedback on a learning activity.
	Questioning for clarification	Eliciting from a teacher or peer additional explanation, rephrasing, or examples.
	Self talk	Using mental redirection of thinking to assure oneself that a learning activity will be successful or to reduce anxiety about a task.

(O'Malley & Chamot, 1990: 46)

Oxford's classification of language learning strategies

Among all the existing learning strategy taxonomies, Oxford (1990) provides the most comprehensive classification of language learning strategies developed so far. Actually, her classification is not something completely different from the previously discussed ones. On the contrary, Oxford's taxonomy overlaps with O'Malley's (1985) taxonomy to a great extent. For instance, the Cognitive Strategies category in O'Malley & Chamot's classification seems to cover both the Cognitive and Memory Strategies in Oxford's taxonomy. Moreover, while O'Malley & Chamot put socioaffective strategies in one category, Oxford classifies them as two separate

categories. On the other hand, a significant difference in Oxford's classification appears with the addition of the compensation strategies, which have not been included in any of the classification systems earlier.

Oxford's taxonomy consists of two major language learning strategy categories, Direct and Indirect Strategies. Direct strategies are those behaviors that directly involve the use of the target language and facilitate language learning. On the other hand, indirect strategies are those which enhance general management of learning. Oxford (1990) claims that direct strategies are like the performers in a stage play, whereas she compares the indirect strategies to the director of the same play. While the performer works with the language itself, he also works with the director who is responsible for the organization, guidance, checking, corrections, and encouragement of the performer like an internal guide. These two work together for the best possible outcome. Oxford (1990) explains her taxonomy in detail as follows:

The first major group, Direct Strategies requires mental processing of the language and is composed of three main subgroups: memory strategies, cognitive strategies and compensation strategies. Memory strategies reflect very simple principles like making associations, pairing different types of materials and arranging things in order. These arrangements or associations must be personally meaningful to the learner. These strategies enable learners to store verbal material and then retrieve it when needed. The first subgroup memory strategies are usually used to link the verbal with the visual, which is useful for four reasons:

1. The mind's capacity for storage of visual information exceeds its capacity for verbal material.
2. The most efficiently packaged chunks of information are transferred to long-term memory through visual images.
3. Visual images might be the most effective mean to aid the recall of verbal material.
4. Visual learning is preferred by a large proportion of learners.

(Oxford, 1990: 40)

The second subgroup, cognitive strategies, is used for manipulation or transformation of the target language by the learner, helps learners comprehend the new material. Cognitive strategies are not only used for mental processing of language to receive and send messages, they are also used for analyzing and reasoning. What is more, they are used for structuring input and output.

The last subgroup of direct strategies is compensation strategies. These strategies help learners use the target language for either comprehension or production in spite of the limitations in knowledge. To illustrate, when learners are confronted with unknown expressions, they make use of guessing strategies, which are also known as inferencing, or if learners do not know all the words in a new material, they make use of a variety of clues either linguistic or non-linguistic so as to guess the meaning. Compensation strategies are not only manipulated in the comprehension of the target language, but they are used in producing it. They enable learners to produce spoken or written expressions in the target language without complete knowledge of it.

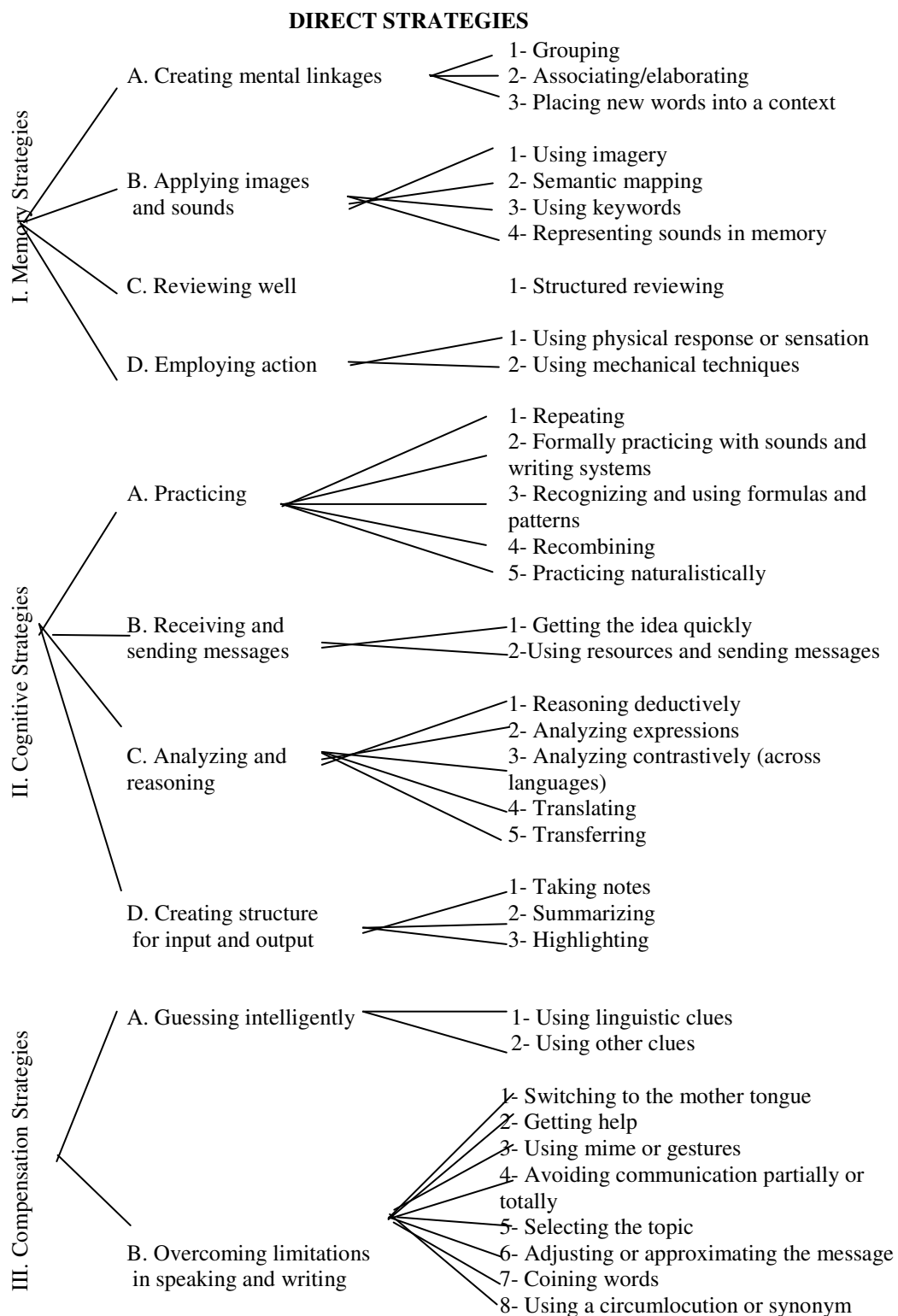
The second major group indirect strategies are necessary for general management of learning. Oxford (1990) defines this group as “indirect” because they support and manage language learning without directly involving the target language. Three main kinds of indirect strategies exist: metacognitive, affective and social strategies.

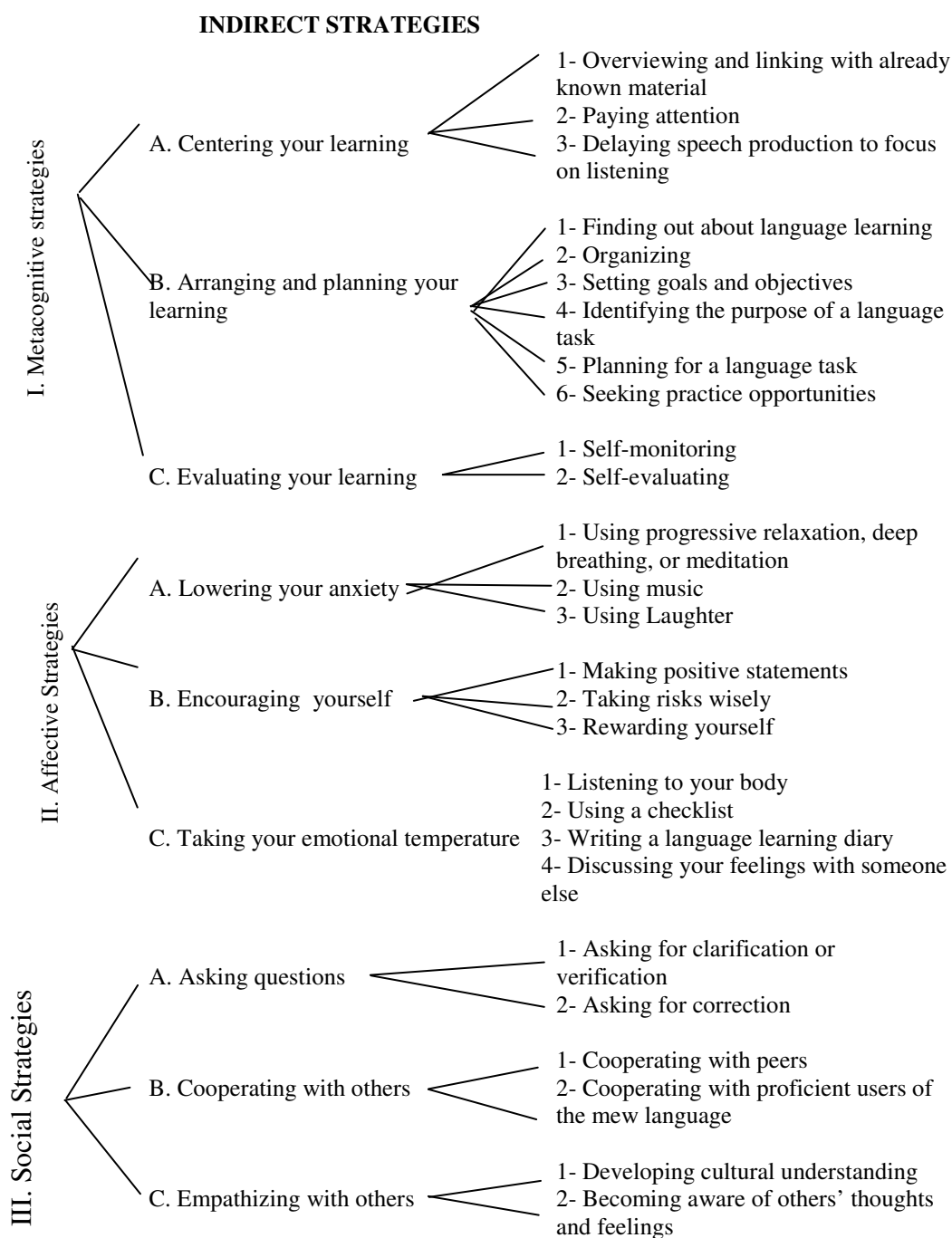
The first subgroup is metacognitive strategies. “Meta” which means “beyond”, “beside”, with “cognitive” refers to actions that go beyond cognitive devices and enable learners to coordinate their own learning process. Since the new learning environment provides too much “newness” like unfamiliar vocabulary, grammar rules different from L1, or social and cultural elements, learners may lose their focus in some cases or become frustrated with all these new items. Metacognitive strategies help learners regain their focus through providing guidance for learners.

Affective Strategies, the second subgroup, enable learners to control their

emotions and attitudes about learning. The term “affective” may mean “emotions”, “attitudes”, “motivation” or “values”. Concerning Oxford’s taxonomy, affective strategies are related with the emotional side of the learner since emotional state or the affective side of the learner is an important determiner of success or failure in the new language. Good language learners, as Oxford (1990: 140) also states, “are often those who know how to control their emotions and attitudes about learning”. The control over negative affective factors can be gained through the manipulation of affective strategies.

The final subgroup of indirect strategies is social strategies. The emergence of social strategies is based on the idea that language is basically a form of communication between and among people and language is a social behavior occurring between or among speakers. Therefore, these strategies enable language learners to learn with others by making use of strategies such as asking questions, cooperating with others, and empathizing with others. Figure 2 shows a summary of Oxford’s taxonomy.

Figure 2: Oxford's Classification of Language Learning Strategies



2.2. Language Learning Strategies and Learning Styles

Although language learning strategies have proved to be an effective way to improve foreign language learning, some factors such as the duration of the procedure, strategy awareness raising and strategy practice affect to what extent learners take

advantage of these strategies in the classroom. Among these factors, one of the most important considerations has been reported as learners' learning style preferences (Cohen&Weaver, 2005; Oxford, 1990; Griffith, 2004; Green&Oxford, 1995).

Starting from the 1980's, the investigation concerning language learning strategies issue has deepened. In 1980's, researchers tried to define and classify the terminology. In the 1990's, there was a shift from simply categorizing language learning strategies to experimenting them in the classroom with different kinds of activities. Meanwhile, most of the studies conducted in the area of language learning strategies and learning styles generally include the ones that investigate either the relationship between these two terms or learner preferences of styles and strategies. The 2000's became the decade when styles and strategies were combined and started to be thought of one entity as styles and strategies-based instruction. That's why, most language educators and researchers supported the idea that language learning strategies need to be viewed from the perspective of learning styles. In other words, the one-size-fits-all approach started to become out of fashion regarding language learning strategy instruction (Cohen&Weaver, 2005; Oxford, 1990).

Even though strategy instruction is documented to be more effective when adjusted for students' learning styles (Ehrman, Leaver and Oxford, 2003; Chamot, 2005; Oxford, 1990; Oxford, 2003), experimental studies aiming to give strategies based instruction based on learning styles are very limited in number. As noted by Chamot (2005), Dörnyei (1995), Oxford(1990) and Oxford (2001), even in some studies language learning strategy instruction has had mixed results. They concur that one main reason for this might be that learning styles of participants were not taken into consideration while the instruction was given. In this sense, this study would be a significant one because of being an experimental study aiming to give language learning strategies instruction in accordance with different learning style preferences.

2.3. Learning Styles

2.3.1. Definition of learning styles

Learner differences in language learning is a very complex issue in second language acquisition, and that's why investigation still continues to reach a conclusive result that will help create the most suitable learning atmosphere for each and every learner in a learning context. One of the most important components of this issue is the idea that learners do not learn in the same way. In contrast, the ways in which they characteristically acquire, retain, and retrieve information vary a lot, and this basically is referred to as *learning styles*. In other words, learning styles are “internally based characteristics, often not perceived or consciously used by learners, for the intake and comprehension of new information” (Reid, 1998: ix). Another definition comes from Dunn & Griggs, referring to the term as “the biologically and developmentally imposed set of characteristics that make the same teaching method wonderful for some and terrible for others” (as cited in Cohen & Weaver, 2005: 8).

2.3.2. Importance of learning styles in foreign language learning

The incorporation of learning styles into foreign language teaching is of great importance due to several reasons. First and foremost, the integration of learner styles makes teaching and learning a dialogue between the teacher and the learner, and within learners. With this view, learners are not considered “empty vessels” to be filled with information, but teaching turns into a dialogic and communal model where learners are actively engaged in a collective dialogue. Moreover, teacher, as the deliverer of information in this collective dialogue can get his message across the range of different learners by orchestrating the material, or the input in a multi-faceted way so that he can reach all (or at least most) of them. Apart from the ones who can make realistic self-reflections about their teaching and make adaptations accordingly, most teachers tend to teach in a way that is compatible with their own learning style, which most of the time, suits only one type of learner or few learners. If an effort to consider student learning styles is made, it is more likely that teaching will be more rewarding (Montgomery &

Groat, 1998).

2.3.3. Learning style dimensions

Learning style was first introduced as a term by Thelen (1954) while he was discussing group dynamics in the 1954's, it will not be wrong to say that the idea of individualized learning styles reemerged and started to become popular in the 1970's. Since then, different learning style dimensions have been identified. Table 3 provides a summary of the mostly recognized learning style classifications in the field of language teaching with their brief definitions.

Table 3: Overview of Some Learning Styles

<u>The Seven Multiple Intelligences</u> (Gardner) Verbal/Linguistic Musical Logical/Mathematical Spatial/Visual Bodily/Kinesthetic Interpersonal Intrapersonal	ability with and sensitivity to oral and written words sensitivity to rhythm, pitch, and melody ability to use numbers effectively and to reason well sensitivity to form, space, color, line, and shape ability to use the body to express ideas and feelings ability to understand another person's moods and intentions ability to understand oneself: strengths weaknesses
<u>Perceptual Learning Styles</u> (Reid) Visual Auditory Tactile Kinesthetic Group Individual	learns more effectively through: the eyes (seeing) the ear (hearing) touch (hands-on) complete body experience working with others working alone
<u>Field Independent and Field Dependent Learning Styles</u> (Witkin & Goodenough) Field Independent Field Dependent	learns more effectively sequentially, analyzing facts learns more effectively in context (holistically) and is sensitive to human relations
<u>Analytic and Global Learning Styles</u> (Kirby & Scmeck) Analytic Global	learns more effectively individually, sequentially, linearly learns more effectively through concrete experience and interaction with other people

<u>Reflective and Impulsive Learning Styles</u> (Kagan) Reflective Impulsive	 learns more effectively when given time to consider options learns more effectively when able to respond immediately
<u>Kolb Experiential Learning Model</u> (Kolb) Converger Diverger Assimilator Accommodator	 learns more effectively when able to: perceive abstractly and process actively perceive concretely and process reflectively perceive abstractly and process reflectively perceive concretely and process actively
<u>Myers-Briggs Type Indicator</u> (Myers & Briggs) <i>Extraversion-Introversion</i> Extraverted Introverted <i>Sensing-Perception</i> Sensing Intuition <i>Thinking-Feeling</i> Thinking Feeling <i>Judging-Perceiving</i> Judging Perceiving	 learns more effectively: through concrete experience, contacts with others in individual, independent learning situations from reports of observable facts from meaningful experiences from impersonal and logical circumstances from personalized circumstances by reflection, deduction, analysis, and processes that involve closure through negotiation, feeling, and inductive processes that postpone closure
<u>Right-and Left- Brained Learning Styles</u> Right-Brained Left-Brained	 learns more effectively through: visual, analytic, reflective, self-reliant learning auditory, global, impulsive, interactive learning

(Reid, 1995: xi)

Among all these dimensions which define what the term learning style is and how it can be classified, one classification stands out with one of the best known educational theories in higher education- *experiential learning theory* (Kolb,1984)

which incorporates the practical, educational and theoretical base regarding learning styles. In this study, Kolb's classification of learning styles was used in order to assess individualized learning styles of the learners.

2.3.4. Experiential learning theory

David A. Kolb is known to be one of the most significant educational theorists of the last quarter of the twentieth century whose main areas of expertise are individual and social change, and executive and professional education. In his thinking, he was highly influenced from John Piaget, Kurt Lewin, Carl Jung, and John Dewey, and says these four must stand as the foremost intellectual ancestors of experiential learning theory. Since his book Experiential Learning: Experience as the Source of Learning and Development (Kolb, 1984) which defines the theory and gives detailed information about its application in higher education, the American organizational psychologist David Kolb's ideas have greatly affected teachers and trainers, especially the ones working with learners 16 years old and older (Healey & Jenkins, 2000).

Kolb's 1984 Experiential Learning Theory (ELT) can basically be defined as a theory which sees education and learning as a lifelong process in which "ideas are not fixed and immutable elements of thought, but formed and re-formed through experience, in this perspective, learning is described as a process whereby concepts are derived from and continuously magnified by experience" (Adetunji, 2004: 41). For Kolb, to learn does include more than two main human functioning; cognition and perception. It involves the integrated functioning of the learner thinking, feeling, perceiving, and behaving, so it is a more holistic process. To understand the basics of the theory better, it would be useful to overview the six propositions of the theory.

1. Learning is best conceived as a process, not in terms of outcomes. To improve learning in higher education, the primary focus should be on engaging students in a process that best enhances their learning.
2. All learning is relearning. Learning is best facilitated by a process that draws out the students' beliefs and ideas about a topic so that they can be examined, tested, and integrated with new, more refined ideas.

3. Learning is a holistic process of adaptation to the world. Not just the result of cognition, learning involves the integrated functioning of the total person - thinking, feeling, perceiving, and behaving.
4. Learning requires the resolution of conflicts between dialectically opposed modes of adaptation to the world. Conflict, differences, and disagreement are what drive the learning process. In the process of learning, one is called upon to move back and forth between opposing modes of reflection and action and feeling and thinking.
5. Learning results from synergetic transactions between the person and the environment. In Piaget's terms, learning occurs through equilibration of the dialectic processes of assimilating new experiences into existing concepts and accommodating existing concepts to new experience.
6. Learning is the process of creating knowledge. Experiential Learning Theory proposes a constructivist theory of learning whereby social knowledge is created and recreated in the personal knowledge of the learner. This stands in contrast to the "transmission" model on which much current educational practice is based, where preexisting fixed ideas are transmitted to the learner (Kolb & Kolb, 2005: 194).

In this model, two dialectically related modes of perceiving new information and experience- *Concrete Experience (CE)* and *Abstract Conceptualization (AC)*- and two dialectically related modes of processing new information and experience- *Reflective Observation (RO)* and *Active Experimentation (AE)* exist. In order for learning to occur, there needs to be a cycle of four processes which starts with the learner's personal involvement in a specific experience by immersing himself/herself in the experience, using senses and feelings in a concrete way. These concrete experiences form the basis for observations and reflections. These reflections are then assimilated and distilled into abstract concepts. New implications for action can be drawn from these abstract concepts. After that, the implications are tested actively and serve as guides to create new experiences (Kolb & Kolb, 2005, p.194). All these stages make up the learning cycle or spiral where all four bases - *experiencing, reflecting, thinking, and acting*- are

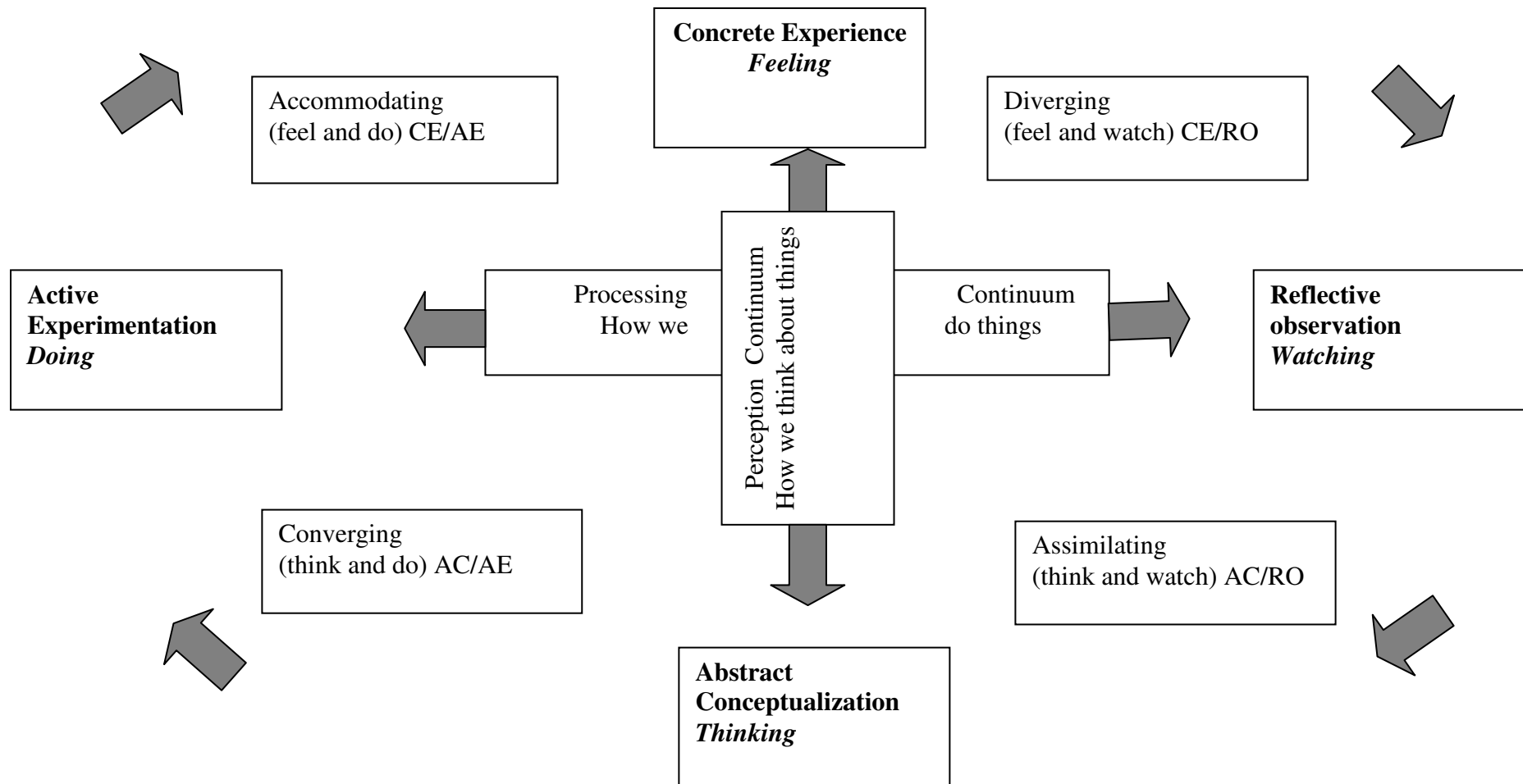
touched by the learner. Zull (2002) proposes that this learning spiral of experiential learning theory is very similar to the process of brain functioning:

“Concrete experiences come through the sensory cortex, reflective observation involves the integrative cortex at the back, creating new abstract concepts occurs in the frontal integrative cortex, and active testing involves the motor brain. In other words, the learning cycle arises from the structure of the brain” (as cited in Kolb & Kolb, 2005: 194).

In this powerful learning cycle, Kolb (1978) recognizes the importance of the uniqueness of an individual in the learning process. He believes that the learning process cannot be identical for every learner but rather some individual differences directly affect the learning process. This idea of individuality or uniqueness of individuals brings Kolb to the conclusion that educational theorists have to be interested in the application of general laws of behavior for each individual case in his/her own context. So as to describe general patterns of individuality in learning, Kolb (1981) created the Learning Style Inventory (LSI) (Adetunji, 2004).

The following figure introduces the cycle of learning in Kolb’s Experiential learning theory in combination with Kolb’s learning styles.

Figure 3: Kolb's Experiential Learning Theory and Learning Styles



Kolb's learning styles (1984)

Types of learning styles in Kolb's classification

As a result of both research and clinical observation of the Learning Style Inventory scores, Kolb (1984, 1999) came to the conclusion that there are four basic learning styles that are associated with different approaches to learning: diverging, assimilating, converging, and accommodating.

1. **Diverging Learning Style:** The dominant learning abilities of this style are *Concrete Experience* and *Reflective Observation*. The name of the style comes from the fact that “divergers” perform better in situations that call for generation of ideas and implications, such as brainstorming sessions. This group of people prefers to work in groups, and is imaginative and feeling-oriented. They can view concrete situations from many perspectives and adapt by observation rather than action. They also tend to develop broad cultural interests. In classroom, people with diverging style prefer to work in groups, listen with an open mind, and receive personalized feedback.
2. **Assimilating Learning Style:** An individual with an assimilating style has *Reflective Observation* and *Abstract Conceptualization* as dominant learning abilities. People with this learning style are best at understanding a wide range of information and putting it into logical forms. These people are interested in ideas and abstract concepts, not in people or application. That's why; they can be called “thinkers”. They are more interested in logical soundness of a theory than its practicality. People with this style generally prefer readings, lectures, and exploring analytical models.
3. **Converging Learning Style:** The strong learning abilities of this group are *Abstract Conceptualization* and *Active Experimentation*. These people are best at finding practical uses for ideas and theories. They can easily solve problems and make decisions based on finding solutions to questions and problems. “Convergers” like to deal with technical tasks and problems rather than social and interpersonal issues, generally by using hypothetical-deductive reasoning. The major strength of the approach lies in problem-solving, decision-making, and the practical application of ideas. In a formal learning context, learners with this style prefer to experiment with ideas,

simulations, laboratory assignments, and practical applications.

4. Accommodating Learning Style: “Accommodators” combine *Concrete Experience* and *Active Experimentation* as dominant learning abilities. They enjoy hands-on experience, carrying out plans and involving themselves in new and challenging experiences. Of all the four groups, accommodators are highest in risk-taking and most easily adapt to immediate, new circumstances. Those with an accommodative orientation tend to solve problems in an intuitive trial-and-error manner, relying heavily on people for information rather than their own analytic ability. In a learning context, these people will successfully work with others to do assignments, and to test out different approaches to completing a project (Kolb & Kolb, 2005).

The 4MAT model

Taking Kolb’s Experiential Learning Theory and Learning Styles as a theoretical base, Bernice McCarthy developed a system which consists of a circle divided into four quadrants, each representing a learning style: Diverger (Innovative), Assimilator (Analytic), Converger (Common Sense) and Accomodator (Dynamic learners). This system is called 4MAT. 4MAT is a process for delivering instruction in a way that appeals to all types of learners and engages, informs, and allows for practice and creative use of material learned within each lesson. The movement around the cycle [Diverger (Innovative), Assimilator (Analytic), Converger (Common Sense) and Accomodator (Dynamic learners)] suggests all learners learn in their natural preferences, but at the same time the 4Mat model encourages learners to develop skills in other three styles. That’s why, McCarthy states that “4MAT offers a way to accommodate, as well as challenge, all types of learners, by appealing to their accustomed learning styles while stretching them to function in less comfortable modes” (McCarthy, 1990: 31). The cycle is the same as the Kolb’ Experiential Learning Model but gives more insights concerning its application in the classroom.

To make an overview of the model, McCarthy reminds that actually as human beings, we all feel, reflect, think, and do while learning, but we linger at different places along the way of learning. What forms our learning style preferences and complex

patterns of individuality are these lingerings, which directly bias what we see and how we see it. While exploring these learning style connections, McCarthy also became interested in the research on right brain / left brain dominance and human behavior, which influenced her ideas about the system (Berman, 1992). The two hemispheres are known to differ in their mode of processing. The right brain processes information in a nonverbal, holistic, and gestalt manner whereas the right brain follows a linear, sequential and logical manner, and most importantly individuals differ in their preferences for processing information, some preferring right mode, some left mode and others an integration of both left and right (as cited in Wilkerson & White, 1988: 357-358).

The 4MAT system, therefore, has two major concerns inherently: people have some major learning styles and at the same time hemispheric (as right-mode& left-mode) processing preferences, and if multiple instructional strategies are designed and used in the light of these learning preferences, teaching and learning can be improved. In this respect the 4MAT is a significantly viable model which translates the research of learning styles and hemispheric differences into instructional strategies for classroom use, and applicable to any content area.

As stated earlier, the model is a four-quadrant one, with each quadrant representing one of the four major learning styles. With the integration of right and left hemispheric preferences on each of the four quadrants, an eight-step cycle of learning is formed, and what McCarthy claims is that if the teacher follows this cycle, the learning style and hemispheric preference of each and every individual will be addressed at least one-fourth of the teaching time. During the other quadrants of the cycle the learner is stretched to learn other ways to deal with problems and develop a broader repertoire of learning skills (Wilkerson & White, 1988). In other words, this full circle instruction will give learners the opportunity to shine 25% of the time and be challenged in the other 75%, and this is what we seek for in an optimal learning context.

The model aims to teach every type of learner in this sequence for each lesson/content and what the teacher needs to do is answer the question most relevant for each quadrant in the system: “Why?” = relevance of the material, “What?”= facts and

description of the material, “How?”= shows methods and procedures for how to apply the material, “What if?”= creative combination of the material in new learning contexts”.

When the learning cycle is followed, the learner firstly enters a right-brain structured activity which is designed to be a motivational one because the first step in the cycle is motivation. Here, the plan is to get the learner to actively engage in the created experience. In the left mode of the first quadrant, it is time to reflect on the experience, maybe in the form of small discussions or writing feelings/thoughts about the activity/content. This step is basically good for the first group of learners which Kolb calls “Divergers” and McCarthy names as “Innovative” Learners. This group of learners needs personal reasons for learning, and their preferred question is “WHY?”, as they need to understand the reason for learning; “these students need reasons of their own” as also mentioned by McCarthy (as cited in Gordon&Kilborn: 6). In terms of learning abilities, these learners start from Concrete Experience and move to Reflective Observation.

The second step in the cycle includes a right brain challenged activity first, to analyze the material in a more detailed way such as drawing a symbol, listing similarities and differences between the elements and so on. In the left brain challenged part, it is time for learners to receive expert knowledge. The concept or the theoretical information is taught through lectures, readings and demonstrations. This is the time for moving from the world of self to moving the world of experts. This step is especially important for the second type of learners (Assimilator, or Analytic Learners) who combine Reflective Observation and Abstract Conceptualization. This group of learners generally prefer accumulation of facts and information that can be analyzed and ask the question, “What?” The lecture format in traditional classrooms is very prevalent for this group. Apart from teaching the theory, teachers should encourage the students to analyze and elaborate information rather than doing this work for the learners. After the concept has been formulated, the learner is now ready to practice working with the concept itself, which forms the third quadrant in the system because without practical application, there is no real learning (Berman, 1982; Gordon & Kilborn).

In the third quadrant teachers are to find activities that include experimenting, doing, working with the theory, and applying the theory into practice. Here the left brain goal is to achieve a satisfactory degree of concept mastery. Teachers can do this through assigned practice, homework, test, oral/written problem solution activities and working in partners/groups. The activities should help learners grasp the answer for the “How?” questions because this group of learners, namely “Convergers or Common Sense Learners” want to see how things work, how ideas are tested or how things are used in real life. When learners achieve a satisfactory amount of mastery, it is time to challenge the right brain through simulations, problem solution activities, and etc. The main role of the teacher should be more like a facilitator rather than a lecturer or an instructor. Learners, generally in groups, try to establish the link between theory and practice at which point teacher is just a contributor to this experimentation (Berman, 1982; Gordon & Kilborn).

In the final step of the cycle the left brain use is achieved with the integration of activities where learners are asked to use what they have learnt so far for an unstructured experimentation. This step is more like free and unguided practice for learners. Teacher helps learners analyze their use of learning for meaning, relevance, and originality. Mistakes are corrected and the theory can be reviewed or summarized if necessary. The part that addresses right brain in this quadrant should consist of role-play, games, or demonstrations, and so on. Learning is practicing the information within a new experience which is shared with a larger community. Student work is displayed in class. With the help of all these activities, learners move from Active Experimentation to Concrete Experience. This step is beneficial for the fourth group of learners; “Accommodators or Dynamic Learners”, because they are the action oriented doers who like to implement what they have learnt in new contexts. As their main question is “What if?” and is addressed in this quadrant, independent learning situations should be created for those learners. In this way, they find out things for themselves and have the chance to use the newly learnt information in new, independent contexts. (Berman, 1982; Gordon & Kilborn). Figure 4 shows the processing of the 4MAT system.

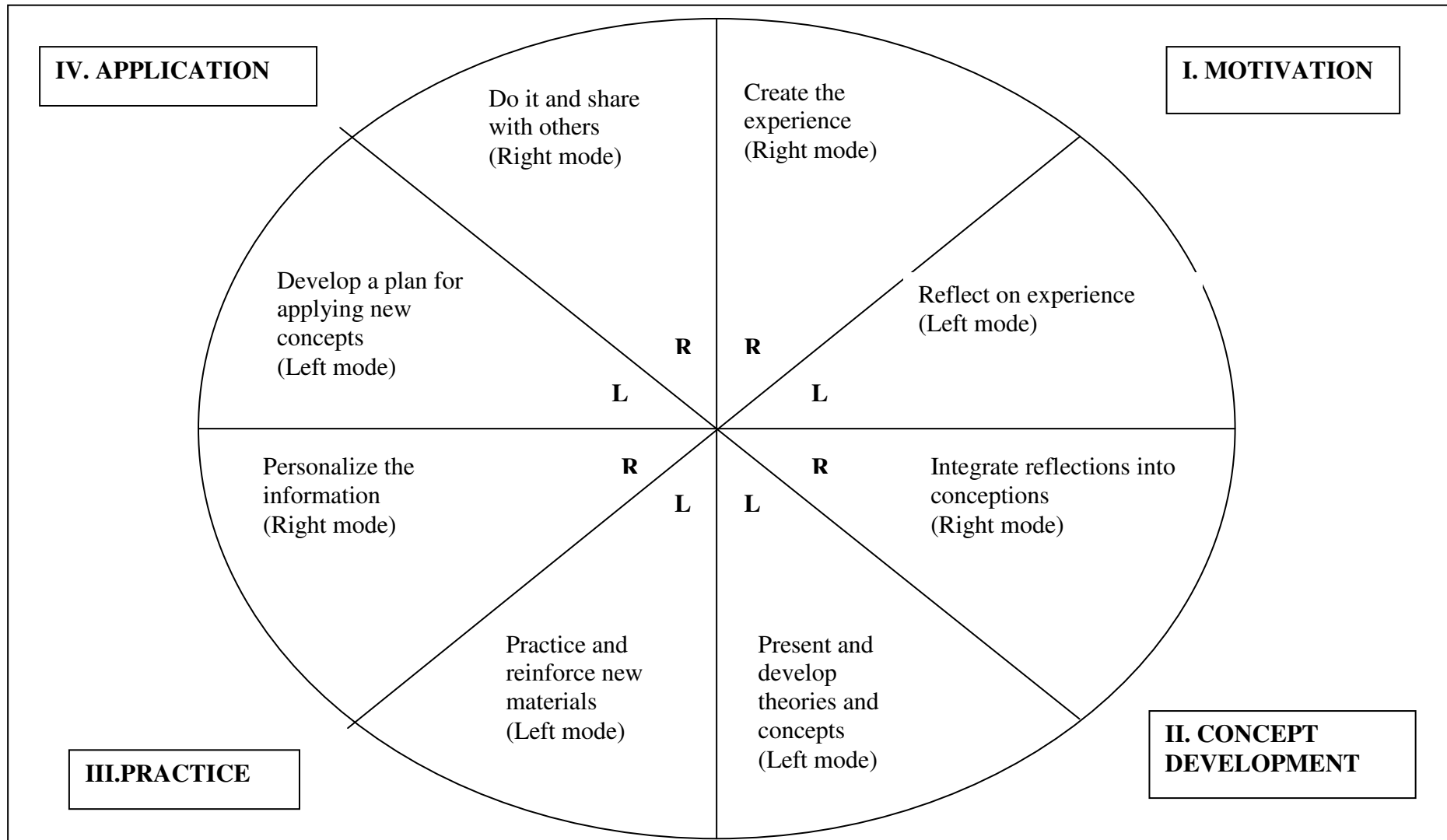


Figure 4: The 4MAT System (Hainer et al 1990: 9).

Below is McCarthy's overview of the basic characteristics of each learning type both in the form of a learner and a teacher.

Table 4: McCarthy's Overview of Learning Styles in the Form of Learner and Teacher Characteristics of the Four Learning Types (McCarthy, 1987)

Learning Style	Characteristics as Learners	Characteristics as Teachers
Diverger	Perceive information concretely, process reflectively, are imaginative, believe in their own experience, are insight thinkers, have high interest in people.	Have interest in facilitating personal growth, help people become more self-aware, encourage discussions, group work, feelings, and cooperation, and help students find meaningful goals. They may be fearful under pressure and may lack risk-taking.
Assimilator	Perceive abstractly, process reflectively, devise theories, need to know what experts think, love ideas, and are detail-oriented	Transmit knowledge, facts and details; use organized sequential thinking, demonstrate love of knowledge, but can have a dominating attitude that can discourage creativity.
Converger	Perceive abstractly, process actively, integrate theory and practice, are pragmatic, dislike fuzzy ideas, value strategic thinking, are skill oriented, like to experiment, and seek results and applications	Encourage productivity and competence, teach skills for adult life, and believe knowledge makes learners independent. They tend to be inflexible and may lack team skills.
Accommodator	Perceive concretely and process actively, learn by trial and error, are interested in self-discovery, are enthusiastic about new things, are adaptable and flexible, like change, are risk takers, people are important to them.	Enable student self-discovery, help people act on their own visions, believe curricula should be geared to learner interests, encourage experiential learning, and are energizing, stimulating, and novel.

2.4. Second Language Reading

2.4.1. General features of second language reading

Reading as defined by Kaplan (2002: 51) is "the ability to derive understanding from written text and L2 reading can best be understood as a combination of skills and abilities that individuals bring to bear as they begin to read". In order to define reading comprehensively, it would be better to follow six fundamental features of the process

identified by Grabe (2002). The first fundamental of reading is that it is comprehending; comprehension is of great importance because reading is only meaningful when the reader expects to understand what he is reading. Research sources have shown that reading comprehension is a function of both reader-based factors and text-based factors. Reader-based factors that play a significant role in text comprehension include background knowledge related to text topic, cognitive and metacognitive strategies, level of interest, and reading purpose. Text-based factors are most frequently considered in assessing text difficulty; they include factors such as vocabulary, syntax and text organization in a material (Knutson, 1997). Second, Grabe (2002) states that reading is rapid, that is, the reader needs to maintain the flow of information at a sufficient rate to make connections and inferences vital to comprehension. Rapid reading is only possible with the ability to recognize words automatically. The various bits of information being activated at any moment in working memory need to be active simultaneously if the information is to be integrated for understanding. The third feature of reading is that it is an interactive process. It is interactive in the sense that many skills and abilities are carried out at the same time with the focus of attention. The reader also makes use of textual information as well as background information, especially for the higher level of comprehension processes such as finding main ideas in a text, making inferences, or making summaries and the like. Fourth, reading is flexible and strategic as readers need to employ a range of strategies to read efficiently and assess whether they are achieving their purposes for reading. If not, they need to adapt other processing activities, and what makes a reader good is this ability of adapting strategies. These strategies include adjusting the reading speed, skimming ahead, considering titles and headings, analyzing text structure information and so on. Fifth, reading is a gradual process. It develops gradually; the reader does not become fluent suddenly. Rather, reading is the product of long-term effort and gradual improvement. Giving strategy instruction is one way to shorten this period. As with strategy instruction, the readers not only become more aware of the process but also turn out to be strategic learners. They learn where to attend more, how to find the gist and important details, how ideas are organized in a text, or see the relationship of ideas more clearly. Finally, reading is a purposeful linguistic process. Fundamentally, linguistic process helps readers derive new meaning and understand when they interact with the text information. That's why, reading is a

linguistic process. At the same time, it is purposeful since readers have a purpose for reading, whether it is for information, pleasure, research, and so on, the reader reads for a purpose (Kaplan, 2002).

Different classifications of purposes of reading can be seen in the literature. According to Knutson (1997), the broadest distinction made in defining reading is “academic reading” and “non-academic reading”. Non-academic reading is also called real-world reading. She also terms this distinction as “reading for information” or “reading for pleasure”.

Kaplan (2002) makes another distinction as reading for information, reading to learn, reading to critique and evaluate, and reading for basic comprehension. In reading to find information, the reader most of the time scans for a specific information or detail. Reading to learn, on the other hand, require reading for main ideas but also includes awareness of many of the details of the text and a strong organizing frame in which to relate various meanings of the text. In reading to critique and evaluate, reflections and elaborate connections to prior knowledge should be made and an integration with prior knowledge, including the reader’s attitudes, emotions, motivation for reading, and level of topic-specific background knowledge are necessary. Reading rate is likely to be slower for this purpose. Kaplan (2002) states that the most common and basic reading purpose is reading for general understanding. In most L2 reading instruction, it is the primary goal for reading. The main purpose in this reading is to understand main ideas and a subset of supporting ideas and information. However, it is not as easy as it seems to read for general understanding. Reading for information, under normal processing rates, requires a very large recognition of words, a high level of automaticity, a rapid reading speed for text-information integration and the ability to comprehend the overall text in a limited amount of time.

Another classification comes from Blanton, Wood and Moorman (1990). They classify reading into two as “reading for information” and “reading for pleasure”, which is similar to Knutson’s (1997) classification. However, they group reading for information into five categories as to update knowledge, to conform/disconform

predictions, to learn about the structure of the text, to apply a strategy and see how it works and to apply information obtained from text.

In addition to all these features that help to define reading in general, it is important to note that being a fluent reader is another significant consideration. A fluent reader is the one who reads and understands what he or she is reading quickly and with a minimum effort. Being a fluent reader is not considered to be difficult when first language is considered, yet, in second language reading it seems to be a harder task. Some cognitive processes are employed to manage fluent reading. Kaplan (2002) states that fluent reading requires two basic types of cognitive processing: “lower-level processing” and “higher-level processing”. Within lower level processing, readers must be rapid and automatic word recognizers, they must be able to pull out and use basic structural information, and they must begin to assemble clause-level meaning units. Within higher-level processing, readers must be able to assemble clause-level information into a text model of their understanding. They also need to build an interpretation of the text that conforms with their goals, attitudes and background knowledge. They also have to make appropriate inferences and to determine whether they are staying on task and achieving their reading purpose. These cognitive processes are termed as “interactive approaches” to reading by Grabe (1991: 383). He says,

“the term interactive approaches can refer to two different conceptions. First, it can refer to the general interaction which takes place between the reader and the text. Second, the term refers to the interaction of many component skills potentially in simultaneous operation; the interaction of these cognitive skills leads to fluent reading comprehension”.

Grabe (1991: 383) further reports, “simply stated, reading involves both an array of lower-level rapid, automatic identification skills and an array of higher-level comprehension/interpretation skills”.

2.4.2. Components of reading in a second language

Most of the current information we have about L2 reading is based on research

on first language learners as reading research in the first language has a longer history. What first language research has to say about the nature of the fluent reading process and the development of reading abilities has mainly given insight to second language reading researchers. However, the information we get from first language reading research helps to understand the second language reading process to a certain extent only, since reading in a foreign language is different from L1 reading. Reading in a foreign language is influenced by factors which are normally not considered in L1 reading research. Two important factors that affect L2 reading are L2 acquisition and training differences and language processing differences, which refer to the fact that second language students begin the L2 reading process with very different knowledge from L1 readers. In terms of language processing differences, transfer effects can cause difficulties for L2 readers. These include word order variation, relative clause formation, complex noun phrase structures and other complex structural differences between the two languages. In that sense, first language readers have superiority over second language readers in that they have already had an ample amount of vocabulary and syntactic knowledge about their native language. On the other hand, second language readers can also be considered as advantageous since they have a well-developed conceptual sense of the world and factual knowledge about the world and can make elaborate logical inferences from the text due to their age. In the light of these differences, findings from research with first language students cannot always be directly applied to L2 contexts. As ESL learners are different from L1 students, research on second language students is essential (Grabe, 1991). The following are the current research themes in second language reading.

1. Schema Theory:

Schema theory is the notion for describing the importance of prior or background knowledge in improving reading comprehension. Carrell and Eisterhold's research on the usefulness of schema theory (as cited in Grabe, 1991: 390) shows that activating content information plays a major role in students' comprehension and recall of information from a text. Carrell (1987) and Barnett (1989) have also investigated the importance of formal schemata, that is, structures of knowledge about language and textual organization and has found this to be a significant independent contributor to

reading ability (as cited in Grabe, 1991: 391). Carrell (1985) demonstrated that training students to recognize the organizational structure of texts improved students' abilities to recall information. Another research on schema theory by Hudson has argued that a high degree of background knowledge can even overcome linguistic deficiencies (as cited in Grabe, 1991: 391).

Eskey's (2005) definition of schema theory is different from the previous terminology regarding what schema theory is. He states that the theory basically "accounts for the way in which human beings store and organize information in networks of related notions called schemata". When considered from this perspective, schema theory is more than background information. How information is represented and how that representation facilitates the use of information in various ways is also significant in second language reading because common knowledge and values may vary across culture groups. In sum, schema theory has provided a rationale for both pre-reading activities and comprehension strategy training. For classroom implications, it is highly important to activate learners' background knowledge or give certain amount of information both on the content and structure of the text to create or form related schemata.

2. "Holding in the Bottom" and Automaticity:

As a reaction to the emphasis on top-down models of reading in a second language, the importance of lower-level processes in reading has been a reconsideration. Eskey (1988), McLaughlin (1990), and Segalowitz (1991) have all stressed the importance of automatic lower-level processing in second language contexts. Grabe (1991) states that "holding in the bottom" actually refers to being efficient in bottom-up processing. As for Grabe (1991: 390), "less proficient readers often appear to be word-bound" and this phenomenon is often taken as evidence that students are "stuck" on words. They cannot recognize the words rapidly and accurately. They consciously attend to the form or unfamiliar vocabulary. Therefore, they cannot make guesses about upcoming information or miss the general gist of the text.

The recognition of syntactic and vocabulary knowledge is another critical

component of reading comprehension as they affect automatic lower-level processing. The recognition of syntactic and vocabulary knowledge plays a critical role in second language reading comprehension because comprehension processes that are often used in L1 reading cannot be used as effectively in L2 reading. In this sense, reading, primarily as a linguistic process, requires automaticity skills be developed, especially in second language reading. Nagy and Herman (1987) claim that one effective way to improve automaticity is the incidental contact with language through extensive reading (as cited in Grabe, 1991: 391). Extensive reading is especially reported as a useful way to develop automaticity if it is in the form of pleasure reading.

3. Reading and Vocabulary Acquisition:

Vocabulary is reported as an important predictor of reading ability. The core vocabulary argument is important as the 2,000 most frequent vocabulary items, known as core vocabulary, account for 80 % of all words in a text. Having a sufficient amount of vocabulary is essential for fluent L2 reading. However, for learners in academic contexts, knowing more words than the core words is necessary to make improvement and comprehend the academic texts (Grabe, 1991).

4. Reading-Writing Relations:

In the 1980's, many reading and writing researchers came to the conclusion that reading and writing form important relations with each other; as skills, as cognitive processes, and as ways of learning because they are likely to influence each other reciprocally (Flood & Lapp, 1987; Kucer, 1987). Stotsky (1983) noted that better writers were better readers, better writers read more, better readers wrote more syntactically mature prose and reading experiences improved writing more than grammar instruction or further writing exercises (as cited in: Grabe, 1991: 394). Therefore, Tierney *et al* (1989) claim that reading and writing can be taught together in advanced academic preparation (as cited in Grabe, 1991: 395).

5. Comprehension Strategy Instruction:

Research on comprehension strategies took on greater importance in the 1980's (Grabe, 1991). Since then research studies have been conducted in language strategy

instruction and on proficient and less proficient learners. In the field of second language reading, strategy training has been found to help learners comprehend texts better “providing them with a procedure for successfully extracting, remembering, and retrieving information from written or verbally delayed material” and the results of many studies show that better readers are better strategy users (as cited in Ben-David, 2002, p. 1). Therefore, strategy training has been reported to be effective in improving reading comprehension scores of learners (Oxford, 1990; Grabe, 1991).

No matter how effective strategy instruction is, it has been reported that certain factors affect the success of strategy instruction. The duration of the instruction, clarity of training procedures, and student responsibility are effective considerations in strategy training (Grabe, 1991). Thus, in order for strategy instruction to be effective and long-term, an intensive and comprehensive strategy instruction is essential (Ben-David, 2002).

2.4.3. Graphic organizers

The use of graphic organizers, basically defined as visual representations of how ideas are related to each other, has received much attention, especially in reading comprehension (Ben-David, 2002). These organizers are used for the purposes of organizing information in a manner that makes it easier to understand and learn. Thus, they form an important outline for comprehension strategies such as note-taking and summarizing. As also reported in Katayama & Robinson’s (2000) study, “the most effective kinds of notes that have emerged from the research literature have used spatial, rather than linear notes, and, in several recent studies, researchers have examined the instructional advantage of providing graphic organizers rather than outlines to students” (as cited in Ben-David, 2002, p. 23). According to Wolfe (2002), humans are intensely visual animals and the visual components of a memory are so robust. Brain-based studies indicate that “each of us has the ability to process kinesthetic and auditory information, but we take in more information visually than through any of the other senses”.

In many studies, comprehending and retrieving information from expository texts has been stated to be one of the most challenging tasks encountered by learners. That's why; it should not be a surprise that graphic organizers are proved to be very powerful aids in improving learners' comprehension of reading texts (Ben-David, 2002; Culbert et. al., 1998). The power of graphic organizers lies in its relationship with memory enhancement. As noted by Caine and Caine (1997),

“memory plays an important part in the teaching/learning process. Many of us associate the word memory with the recall of specific dates or facts or lists of information and sets of instructions, requiring memorization and effort. However, memory goes beyond the one-dimensional aspect of learning, and rather, focuses on attending, learning, linking, remembering, and using the inordinate amount of pieces of knowledge and skills we encounter constantly” (as cited in Ben-David, 2002, p. 4).

Graphic organizers, through active learning, enhance memory by representing abstract or implicit information, showing relationships, helping organization of ideas, linking new information with prior knowledge, and assisting in the storage and retrieval of information. Brain-based studies also support the importance of these organizers concerning memory. Organization is vital in the recoding and comprehension process of factual information because human mind is known to store new information in an organized pattern so as to assimilate it more easily. Wolfe (2001) claims that with the help these visual devices, learners can see connections between aspects of information that may not be clear in a linear form and the structure of these frameworks resembles the structure used by the brain to organize information”.

History of graphic organizers

The history of graphic organizers goes back to the 1960's with David Ausubel's advanced organizers. Ausubel (1969) defined “organizer” in his glossary as follows:

“Introductory material presented in advance of and at a higher level of generality, inclusiveness, and abstraction than the learning task itself;

designed to promote subsumptive learning by providing ideational scaffolding or anchorage for the learning task and/or by increasing the discriminability between the new ideas to be learned and related ideas in cognitive structure” (as cited in Culbert *et. al.*, 1998, p. 1-2).

A graphic form of advanced organizers was developed by Barron (1969) and Earle (1970) called “structured overview”. This form was more like a concept graph designed in a hierarchical organization to reflect the relationships in a text and seemed simpler than advanced organizers. At first both advanced organizers and structured overviews were used as pre-reading strategies; however, then they started to be used as while and post- reading strategies as well, taking the name “graphic organizers” in the 1980’s in the form of various geometric shapes or illustrations. The organizers, which require learners to analyze and synthesize information, can vary a lot in shape such as the ones showing Cause-Effect, Comparison-Contrast relationships, Tree diagrams, Venn diagrams, Concept maps, T-charts, Flow charts, Process charts, and so on. According to the research investigating the effects of graphic organizer use, an important factor for this strategy to be helpful for learners is that learners need to be instructed in their correct use. Studies (examples) have shown that simply giving the organizer frame and expecting learners to complete it correctly does not lead to positive results; instruction is essential for the effective use of the organizer (Culbert *et. al.*, 1998).

CHAPTER III

3. METHODOLOGY

This chapter first focuses on the overall design of the study. Then it presents the research questions and information about the participants. After that, the data collection instruments along with the data collection procedures are explained. Finally, information with respect to the analysis of data is provided.

3.1. Design of the Study

This is an experimental study conducted for the purpose of investigating the effect of reading strategies instruction based on students' identified learning styles on participants' reading comprehension. This study aims at identifying preferred learning styles of B1- Level preparatory school students studying English at the Preparatory School of Dilmer at Abant İzzet Baysal University, and, based on their identified styles, giving them reading strategy instruction in order to help increase their comprehension of second language reading texts.

In this study quantitative data regarding the identification of learning styles was collected through a Learning Style Inventory (2005, Version 3.1) developed by David Kolb. Reading strategy instruction included two cognitive language learning strategies, namely note-taking and summarizing. In order to evaluate the effect of reading strategy instruction on the comprehension level of learners two pre-tests and post-tests prepared by the researcher were used. One of the tests were prepared to evaluate the effect of note-taking strategy instruction and the second test was designed for summarizing strategy. For the analysis of the data, paired sample t-test and independent sample t-test

techniques were used.

3.2. Research Questions

This study was designed to answer the following three questions:

1. What are the learning style preferences of the students?
2. Does reading strategies instruction based on students' identified learning styles increase students' comprehension of reading texts?
3. To what extent are differences seen between students who receive reading strategies instruction based on their identified learning styles and students who are taught reading without the inclusion of reading strategies instruction on the basis of the identification of learning styles?

3.3. Participants

The participants in this study were B1-Level students studying at the Preparatory School of Dilmer at Abant İzzet Baysal University. There were a total of 393 B1-Level students in 15 classes. Learners' ages ranged between 17 and 20. The proportion of male and female students in the classes was almost equal. The classes were divided into two groups. Students in 10 of these classes were receiving preparatory school education as compulsory to go on with their majors. The remaining 5 groups were at the preparatory school because they voluntarily wanted to receive foreign language education. Two classes from these voluntary groups were chosen as experiment and control groups. The experiment group was the researcher's own class and the control group was chosen randomly out of the remaining four groups. In each class there were 26 students. In the experiment group the number of female students was 18 and that of males was 8. The control group had 16 female students and 10 male students. The students had been studying English for the last ten weeks.

3.4. Data Collection Instruments

3.4.1. Kolb's learning style inventory

In this study Kolb's Learning Style Inventory was used with Professor David Kolb's written permission for the purpose of collecting quantitative data concerning learning style preferences of the participants. This inventory was created by David Kolb first in 1969 as an experimental educational exercise designed to help learners grasp the process of experiential learning and their individual style of learning from experience. Items for the inventory were selected from a long list of words and phrases for each learning mode by a panel of four behavioral scientists familiar with experiential learning theory. After this first inventory, Kolb published versions of the inventory making minor changes with respect to the reliability coefficients and some other concerns. The latest version, which is Version 3.1, was created in 2005, and it was used in this study. The final format of the instrument, which is a 12 item self-description questionnaire, consists of three parts: the Learning Style Inventory (the test itself), the Cycle of Learning (the assessment tool for items), and the Learning Style Type Grid (the table indicating four learning styles based on the numerical data). The Learning Style Inventory describes the way people learn and how people deal with ideas and day-to-day situations in their lives. In each item, the respondent is to rank four words in a way that best describes his/her learning style for the specific learning context described, giving them numbers from 4 to 1. Number 4 describes the most appropriate choice, 3 less appropriate, 2 less appropriate and 1 the least appropriate option.

The development of this instrument holds four design objectives. Firstly, the test was constructed in such a way that participants would respond to it in the same way they would react in a learning situation. That's why, in the opening part of the inventory respondents are asked to try to recall some recent situations where they had to learn something new, perhaps in their jobs or at school. By doing so results would allow comparisons within individuals on their emphasis on the four learning modes (Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation). Secondly, a self-description format was chosen for the inventory

since self-image descriptions might be more powerful determinants of behavioral choices and decisions. Thirdly, validity was a concern in the development of this test. It was aimed that the measures of learning styles would predict behavior in a way that was consistent with the theory of experiential learning. The final consideration was that the test should be practical being brief and straightforward so that it could be used in discussing the learning process of the respondents and giving them feedback (Adetunji, 2004; Kolb & Kolb, 2005).

In this study the Turkish translation of the questionnaire (Version 3.1- 2005) was used. The translation was done by the researcher and it was proofread by two colleagues and it was piloted on 25 students before it was administered to the participants of this study with an attempt to decide on timing and to see whether students had any concerns about understanding the items or differentiating between the options.

3.4.2. Tests

Two pre-tests were used in this study in order to indicate learners' knowledge level of the note-taking strategy and summarizing strategy before the instruction was given. These pre-tests were also used as post-tests after the instruction was completed. Before strategy instruction on each strategy, a pre-test was given to test the participants' knowledge on the concept. Following each strategy instruction, the same test was given again, this time as a post-test to see the difference between the effects of strategy training.

Pre-test and post-test for note-taking strategy

The first reading test consists of three parts and one and a half hour was allocated for this test as this amount of time would be enough to answer the questions in the test. In the first part, there is a one-paragraph long reading test about "The Layers of the Earth" and the participants were expected to complete a note-taking chart. Some of the parts in the chart were already completed so as to make sure that all learners could

understand what was expected of them. The second text was about how a balanced diet should be like. This time the text was six times longer and much more complex than the text in the first part. Again the participants were to complete a chart by taking their own notes of the text. These two texts were basically testing general note-taking information which would be the focus of instruction of the first week. After learners got a general idea about what note-taking was, how it was done, how important it was in students' academic life, in the following two weeks they were given information about note-taking, using graphic organizers. Because of this, the last part of the text included three separate paragraphs, each having different organization structures such as cause-effect, process, and argumentative, and what the participants were supposed to do was first matching these texts with relevant graphic organizers and then completing these organizers with relevant notes taken from the texts. In this first test participants were not allowed to use dictionaries as the texts were all adapted to their level and some important key words were explained in their Turkish equivalents.

Pre-test and post-test for summarizing strategy

The test for assessing summarizing strategy consisted of one text about the hemispheric differences between boys and girls. After reading the text, the students were expected to write a summary of the original text by deleting the unimportant information. In this text, participants were permitted to use their dictionaries for unknown words since the text included some technical terms such as “hemisphere”, “verbal”, and “processing language”. The time given for the completion of the test was 30 minutes. When the complexity of the text was considered this amount of time was enough to fulfill the task. What was expected from the participants was writing a shorter (approximately one third of the original text) summary paragraph by using their own words except for using some key terms.

3.5. Instruction Procedure

Strategy instruction was given for 5 weeks. The first three weeks were allocated

for note-taking strategy instruction and the remaining two weeks were allotted for summary strategy instruction. The first three-week period was allotted for note-taking strategy as it also included activities with graphic organizer and two-week period was considered sufficient for summarizing strategy instruction. In the first week of note-taking strategy instruction, information with respect to general features of note-taking as a reading strategy was given to the participants. In the first course of the instruction, they were shown a PowerPoint presentation concerning how note-taking is relevant to their daily lives and what the basics of this strategy were. Afterwards, through small talks between students and classroom discussions, note-taking as a reading strategy was taught to participants. Following this concept teaching session, a one-paragraph long reading text about “Grammar” was shared with participants. They were asked to skim the text and answer the comprehension questions that followed. Meanwhile sample notes about the text taken by the researcher were put on the board so the participants could see a model of effective note-taking. After a discussion about the notes on the board, comprehension questions were easily answered by the participants. In the accommodation stage of the instruction, participants were given extensive readings regarding a writing activity in their course book and were asked to read the texts and take notes under the guidance of the researcher. For the next week, they were expected to prepare a poster presentation in their groups using the notes they had taken.

The second week started with poster presentations prepared by the participants and their checking by the researcher. As the participants grasped what note-taking was in general, they were ready to learn about the graphic organizers and taking notes using them. Therefore, the second presentation was about what graphic organizers were, how they were used, how influential they were in note-taking, comprehending, and recalling. Graphic organizers were especially used in this study as they proved to be good aids while taking notes and for enhancing reading comprehension. As the concept development was completed, a text about a traditional dish was read as an extension of the reading activity in participants’ course books and a relevant graphic organizer (process chart) was distributed to the learners and it was completed under the guidance, modeling, and teaching of the researcher. For the next lesson, the participants were asked to write a similar recipe about a popular dish of Turkey using the same organizer

and present it to their classmates. For two weeks, sample reading texts on different topics with various organizing structures were analyzed in the class and apposite organizers were used to take notes on. At the end of this three-week period of note-taking strategy instruction, the post-test was administered to see the differences between pre- and post-strategy instruction.

The fourth and fifth weeks were allocated for summarizing strategy instruction. Before strategy instruction, a pre-test was given to the experiment and control group. The instruction given to the experiment group started with a poster presentation showing the importance of summarizing in learners' academic life and giving information about important features of summarizing. Meanwhile classroom discussion was held and learners shared their ideas about the strategy. They made comments on the good and bad summary examples brought to the class by the researcher and they exchanged their ideas about writing good summaries. In the following courses, various exercises such as finding the main idea(s) in a text, finding the best title for a text, deleting unimportant information in a text, writing a shorter version of a long and complicated sentence, and making summaries of different texts were done in the class. At the end of the instruction, the post-test was administered to the experiment and the control group.

CHAPTER IV

4. RESULTS

In this chapter, statistical analyses applied to find the answers of research questions will be reported.

4.1. The Analysis of Results

4.1.1. The analysis of Kolb's learning style inventory results

The first research question was as follows:

“What are the learning style preferences of the students?”

The 12 item Kolb Learning Style Inventory was used to assess the participants' learning style preferences, namely, diverging, assimilating, converging, and accommodating. After the students gave their answers to the items in the inventory, their responses were analyzed based on The Cycle of Learning, which is the assessment tool of the inventory. Following the analysis of the scores, learning styles of the learners were found out depending on the Learning-Style Type Grid. This document indicates the preferred learning style with the percentiles and numerical data obtained from the Cycle of Learning. According to the results of the inventory all four learning types were existent in the classroom. The results of the inventory showed that the learning style of a large majority in the class was assimilating with a number of 17. The second most preferred style was accommodating with 4 students whereas there were 2 converging style learners and just 1 diverging style learner. Although a large number of the class falls in the same category, thanks to the 4Mat system, the instruction was given

addressing all four learning types.

4.1.2. The analysis of the pre-test and post-test results

The second research question was as follows:

“Does reading strategies instruction based on students’ identified learning styles increase students’ comprehension of reading texts?”

In this part, statistical information concerning the pre-test and post-test results will be reported in the following tables. The definitions of the terminology used in these tables are as follows:

“ N ” stands for the number of participants.

“ $\bar{X}$ ” refers to the mean which is the average of the scores in the population. It equals the sum of the scores divided by the number of scores.

“ S ” refers to standard deviation. It is one of several indices of variability that statisticians use to characterize the dispersion among the measures in a given population.

“ df ” stands for degrees of freedom. This term is used to describe the number of values in the final calculation of a statistic that are free to vary.

“ t ” can be defined as a measure on a random sample (or a pair of samples) in which a mean (or pair of means) appears in the numerator and an estimate of the numerator’s standard deviation appears in the denominator.

“ p ” refers to statistical significance. A finding (for example the observed difference between the means of two random samples) is described as statistically significant, when it can be demonstrated that the probability of obtaining such a difference by

chance only, is relatively low. In Psychology, and in many other domains, it is customary to describe one's finding as statistically significant, when the obtained result is among those that (theoretically) would occur no more than 5 out of 100 times when the only factors operating are the chance variations that occur whenever random samples are drawn (<http://www.animatedsoftware.com/statglos/statglos.htm>, retrieved on 30.06.2011).

In order to assess whether reading strategies instruction based on students' identified learning styles increased participants' comprehension of reading texts, paired samples t-test technique was used. In the experiment group, there were 26 students in note-taking strategy test. According to the results of the analysis, it was found that there was statistically significant difference between the pre-test and the post-test means [$t(25) = -13.719$, $p < 0.05$]. For the note-taking strategy test, the mean of participants' pre-test results was 37.53 and the mean of post-test results was 66.92, so it can be concluded that note-taking strategy instruction proved to be effective in increasing participants' comprehension of reading texts (Table 5).

Table 5: Paired Samples t-test for Note-taking Strategy Test of the Experiment Group

Experiment group		N	$\bar{X}$	S	df	t	p
note-taking strategy test	Pretest	26	37.53	11.37	25	-13.719	.000
	posttest	26	66.92	16.21			

($p < 0.5$)

On the other hand, the number of students in the experiment group who took the test assessing summarizing strategy was 24. The analysis results indicated that there was statistically significant difference between the pre-test and post-test means [$t(23) = -12.362$, $p < 0.05$]. As can be seen in Table 6, concerning the summarizing strategy test, the mean of participants' pre-test results was 2.79 and that of the post-test was 7.54, which shows that summarizing strategy instruction increased participants' comprehension of reading texts.

Table 6: Paired Samples t-test for Summarizing Strategy Test of the Experiment Group

Experiment group summarizing strategy test		N	$\bar{X}$	S	df	t	p
	Pretest	24	2.79	1.76	23	-12.362	.000
	posttest	24	7.54	2.08			

(p < 0.5)

26 students took note-taking strategy test in the control group. The analysis results for note-taking strategy test of the control group indicated that there was no statistically significant difference between the pre-test and post-test means of the participants in the control group [$t(25) = -1.617$, $p > 0.05$]. In the control group, the mean value was 40.07 for the pre-test and the post-test mean was 42.73. Table 7 shows these results.

Table 7: Paired Samples t-test for Note-taking Strategy Test of the Control Group

Control group note-taking strategy instruction		N	$\bar{X}$	S	df	t	p
	Pretest	26	40.07	13.35	25	-1.617	.118
	posttest	26	42.73	11.22			

(p < 0.5)

The number of students in summarizing strategy test in the control group was 24. The analysis results for summarizing strategy test of the control group revealed that there was no statistically significant difference between the pre-test and post-test means of the participants in the control group [$t(23) = -1.436$, $p > 0.05$]. In the control group, the mean value was 3.27 for the pre-test and the post-test mean was 3.45. Table 8 shows these results.

Table 8: Paired Samples t-test for Summarizing Strategy Test of the Control Group

Control group summarizing strategy instruction		N	$\bar{X}$	S	df	t	p
	Pretest	24	3.27	2.15	23	-1.436	.164
	posttest	24	3.45	2.15			

(p < 0.5)

The third research question was as follows:

“To what extent are differences seen between students who receive reading strategy instruction based on their identified learning styles and students who are taught reading without the inclusion of reading strategy instruction on the basis of the identification of learning styles?”

Before teaching note-taking and summarizing strategies based on students' learning styles, it was important to see that students in the control group and experiment group had the same reading comprehension level. To prove that participants in both groups had the same level of proficiency in reading comprehension, pretests were conducted for note-taking strategy and summarizing strategy. Independent samples t-test was conducted to analyze the pretest results of participants both for control group and experiment group. For note taking strategy t value was found .738, and for summarizing strategy it was .843 at $p < 0,05$. As can be seen in Table 9 and 10, according to analysis, there was no statistically significant difference between the participants in the control group and experiment group before reading strategy instruction was given.

Table 9: Independent Samples t-test for Note-taking Strategy Pre-test of the Experiment and Control Group

Note-taking Strategy pretest		N	$\bar{X}$	S	df	t	p
	control	26	40.07	13.35	50	.738	.464
	experiment	26	37.53	11.37			

(p < 0.5)

Table 10: Independent Samples t-test for Summarizing Strategy Pre-test of the Experiment and Control Group

Summarizing strategy pretest		N	$\bar{X}$	S	df	t	P
	Control	24	3.27	2.15	46	.843	.404
	experiment	24	2.79	1.76			

($p < 0.5$)

To analyze to what extent differences are seen between students who receive reading strategy instruction based on their identified learning styles and students who are taught reading without the inclusion of reading strategy instruction on the basis of the identification of learning styles, an independent samples t-test was conducted. Only participants in the experiment group took reading strategy instruction in between the pre-test and post-test. Table 11 indicates the results of the statistical analysis conducted to identify the differences between the experiment and control group. According to the analysis results, there was statistically significant difference between the reading comprehension level of two groups in the note-taking strategy test [$t(50) = -6.256$, $p < 0.05$]. For the note-taking strategy, the post-test mean for the control group was 42.73 while it was 66.62 for the experiment group.

Table 11: Independent Samples t-test for Note-taking Strategy Post-test of the Experiment and Control Group

Note-taking strategy post-test		N	$\bar{X}$	S	df	t	P
	Control	26	42.73	11.22	50	-6.256	.000
	experiment	26	66.92	16.21			

($p < 0.5$)

For the summarizing strategy test, the number of participants in both groups was 24. The analysis of the summarizing strategy test results also showed statistically significant difference between the experiment and the control group [$t(46) = -6.677$, $p < 0.05$]. Post-test mean of the summarizing strategy was 3.45 for the control group and 7.54 for the experiment group. As can be seen in Table 12, these results revealed that reading strategy instruction on the basis of the identification of learning styles was effective in terms of increasing comprehension of reading texts of the participants.

Table 12: Independent Samples t-test for Summarizing Strategy Post-test of the Experiment and Control Group

Summarizing strategy post-test		N	$\bar{X}$	S	df	t	p
	Control	24	3.45	2.15	46	-6.677	.000
	experiment	24	7.54	2.08			

($p < 0.5$)

CHAPTER V

5. CONCLUSION

5.1. Summary of the Study

This was an experimental study which aimed to identify the effect of reading strategy instruction based on learning styles on reading comprehension of preparatory school students at the preparatory school of Abant İzzet Baysal University. Reading strategy instruction included two cognitive language learning strategies, namely note-taking and summarizing and participants' learning styles were taken into consideration during training procedure. That's why, courses were designed according to the 4MAT Model based on Kolb's Learning Styles.

Two kinds of instruments were used for data collection. First of all, Kolb's Learning Style Inventory Version 3.1(2005) was used in order to identify learning style preferences of participants. Secondly, two tests which consisted of questions assessing note-taking and summarizing strategies knowledge of participants were used. These tests were administered as pre-tests before strategy instruction took place. After participants in the experiment group were given strategy instruction, students in the control and experiment group took the same tests again so that differences before and after the instruction could be figured out.

5.2. Results

This study was designed to answer the following three questions:

1. What are the learning style preferences of the students?
2. Does reading strategies instruction based on students' identified learning styles increase students' comprehension of reading texts?
3. To what extent are differences seen between students who receive reading strategies instruction based on their identified learning styles and students who are taught reading without the inclusion of reading strategies instruction on the basis of the identification of learning styles?

In order to answer the first question, participants were asked to answer Kolb's 12-item Learning Style Inventory (Version 3.1, 2005). Their answers revealed their preferred learning tendencies and this was significant for the design of the strategy instruction. The results of the inventory indicated that the learning style preferences of 17 participants were assimilating. The second most preferred style was accommodating with 4 students whereas there were 2 converging style learners and just 1 diverging style learner. Even though a large number of the participants tend to learn in the same way, the instruction was given addressing all four learning types.

To answer the second research question and the third research question, note-taking and summarizing strategy tests were administered. In order to see whether reading strategies instruction based on learning styles increased students' comprehension of reading texts, a paired samples t-test was used. The results of the statistical analysis revealed that there was a statistically significant difference between the pre-test and post-test results of the experiment group, which showed that the instruction was effective in increasing comprehension level of participants, but for the control group there was not statistically significant difference

So as to see the differences between the experiment and the control groups, independent samples t-test technique was used and the statistical analysis showed that although the results of the experiment and the control group pre-tests were almost similar in the two tests, there was a statistically significant difference between the post-tests of the experiment and the control groups [Note-taking strategy test: ($t(50) = -6.256, p < 0.05$), Summarizing strategy test: ($t(46) = -6.677, p < 0.05$)]. For note-

taking strategy pre-test, the mean of the control group was 40.07 and the mean of the experiment group was 37.53. On the other hand, the post-test mean for the same test was 42.73 for the control group and 66.92 for the experiment group. When summarizing strategy test results were analyzed, it can be seen that the mean value for the control group was 3.27 for the pre-test and 3.45 for the post-test whereas the mean value for the experiment group was 2.79 for the pre-test and 7.54 for the post-test. Concerning the results of the statistical analysis, it can be concluded that the reading strategies instruction based on learners' identified learning styles was effective in increasing comprehension level of participants and there were significant differences between the test results of the experiment and the control groups.

5.3. Implications for Teaching

The findings of this study showed that reading strategies instruction based on learning styles is effective in increasing reading comprehension of learners. This conclusion has some implications for teachers and administrators.

1. First of all, besides being a teacher in the classroom, teachers should also take the responsibility of being a researcher so as to be aware of their students' learning styles and cater the needs of their students. It is important that every learner has the chance to be taught in accordance with his/her style but at the same time they should be given the opportunity to stretch their learning preferences and improve themselves to learn in other ways as well. This is only possible in classroom where teachers design their courses by addressing variable learning styles.
2. It is also important that every teacher has a teaching style just like every learner has a learning style but the important thing is that teachers should adopt their teaching styles so as to address all learners with different learning styles in a classroom. In this sense, teachers should be aware of their own teaching styles so that they can make objective reflections in terms of their teaching practices. Stebbins (1995: 116) offers that 'teachers' identification of

their own style preferences may facilitate student learning by more closely matching student preferences with teacher practices and teacher identification of student learning-style preferences can guide the selection of appropriate instructional methods and materials to maximize student learning.

3. On the other hand, teachers should spend time and effort to be equipped with information concerning language learning strategies and they should design courses to teach and practice these strategies since language learning strategies is an important component for training effective and independent learners. O'Malley & Chamot (1990) reports that the literature on learning strategies in second language acquisition emerged from a concern for identifying the characteristics of effective learners and research efforts concentrating on the "good language learner" showed that certain strategies do contribute to language learning. When learners are equipped with different language learning strategies, they not only learn special thoughts or behaviors that can help them comprehend, learn, and retain new information but they are also given the chance to deal with difficult academic tasks themselves.
4. The administrators can also take the responsibility of helping teachers to apply this research in their classrooms. They can help teachers design courses in the light of learning styles and incorporate strategies instruction into their curriculum. In order for this research to be used in classrooms, certain adaptations can be made with an attempt to develop lesson plans and syllabi including language learning strategies instruction and learning styles in different learning contexts.

5.4. Implications for Further Research

This study has some implications for further research:

1. The further research on the effect of reading strategies instruction based on learning styles might be longer in terms of training procedure. In this study, instruction procedure lasted for five weeks. If this period is longer, strategy instruction can be more effective.

2. The number of participants in this study was 52. The results of the study will be better if the same study is conducted with a large number of participants.
3. The participants in this study were preparatory school students at Abant İzzet Baysal University. The same study can be conducted in different language learning contexts.

BIBLIOGRAPHY

- About Learning- Featuring Bernice McCarthy's 4MAT SYSTEM. (Bernice McCarthy's Home Page). <http://www.aboutlearning.com/>.
- Adetunji, Ponle Gideon. (2004). An evaluation of David Kolb's theory of learning styles. *Ilorin Journal of Education*, 23, 39-47.
- Allingtoni Richard L. (1987). Are good and poor readers taught differently? Is that why poor readers are poor readers? *American Educational Research Association*, 1-19.
- Alyousef, Hesham Suleiman. (2005). Teaching reading comprehension to esl/efl learners. *The Reading Matrix*, 5(2), 143-154.
- Anderson, Neil J. (1991). Individual differences in strategy use in second language reading and testing. *The Modern Language Journal*, 75(4), 460-472.
- Baker, William., Boonkit, Kamonpan. (2004). Learning strategies in reading and writing: eap contexts. *Regional Language Centre Journal*, 35, 299-328.
- Ben-David, Renee. (2002). Enhancing comprehension through graphic organizers. *Kean University*. 2-47.
- Berman, Bennett H. (1982). The 4Mat system: exploring relationships between left/right brain dominance, learning styles and implications for training. *NSPI Journal*, 9-12.
- Blanten, William E.; Moorman, Gary B.; Wood, Karen D. (1990). The Role of Purpose in Reading Instruction. *The Reading Teacher*. 486-492.

- Cao, Zhi-hong. (2007). The effects of learning strategies on reading comprehension. *Sino-US English Teaching*, 4(40), 15-18.
- Carrell, Patricia L., Eisterhold, Joan C. (1983). Schema theory and esl reading pedagogy. *TESOL Quarterly*, 17(4), 553-573.
- Chamot, Anna Uhl. (2005). Language learning strategy instruction: current issues and research. *Annual Review of Applied Linguistics*, 25, 112-130.
- Cohen, Andrew D. (2003). The learner's side of foreign language learning: Where do styles, strategies, and tasks meet?. *IRAL*, 41, 279-291.
- Culbert, Elizabeth., Flood, Michelle., Windler, Rachel., Work, Debra. (1998). A qualitative investigation of the use of graphic organizers. *Eric Digest*, ED418 381.1-13.
- Ehrman, Madeline E., Leaver, Betty Lou., Oxford, Rebecca L. (2003). A brief overview of individual differences in second language learning. *Elsevier Ltd.*, 31, 313-330.
- Eskey, David E.(2005). Reading in a Second Language. *Handbook of Research in Second Language Reading*. Hinkel, Eli (Edt), (p. 563-597) New Jersey: Lawrence Erlbaum Associates, Inc., Publishers.
- Felder, Richard M., Henriques, Eunice R. (1995). Learning and teaching styles in foreign and second language education. *Foreign Language Annals*, 28(1), 21-31.
- Ghani, Mamuna. (2003). Language learning strategies employed by L2 learners. *Journal of Research (Faculty of Languages and Islamic Studies)*, 4, 31-36.
- Gordon, Chris., Kilborn, Judith. Teaching around the circle: from learning styles to computers to pedagogy. *St. Cloud State University*, 1-30.

- Grabe, William. (1991). Current developments in second language reading research. *TESOL Quarterly*, 25(3), 375-405.
- Grabe, William. (2002). Reading in a Second Language. *The Oxford Handbook of Applied Linguistics*. Kaplan, Robert B. (Edt), (p. 47-59) New York, NY: Oxford University Press.
- Grabe, William. (2004). Research on Teaching Reading. *Annual Review of Applied Linguistics*, 24, 44-69. Cambridge University Press.
- Grabe, William. Dilemmas for the Development of Second Language Reading Abilities *Methodology in Language Teaching*. An Anthology of Current Practice. Richards, Jack C. ; Renandya, Willy A. (Edt), (p. 276-286).
- Green, John M., Oxford, Rebecca. (1995). A closer look at learning strategies, 12 proficiency, and gender. *TESOL Quarterly*, 29(2), 261-297.
- Griffths, Carol. (2004). Language learning strategies: theory and research. *School of Foundations Studies*, No.1, 1-25.
- Hainer, Emma Violand., Fagan, Barbara., Bratt, Theresa., Baker, Laurie., Arnold, Nancy. (1990). Integrating learning styles and skills in the esl classroom: an approach to lesson planning. *NCBE Program Information Guide Series*, No. 2, 1-32.
- Healey, Mick., Jenkins, Alan. (2000). Kolb's experiential learning theory and its application in geography in higher education. *Journal of Geography*, 99: 5, 185-195.
- Healey, Mick., Jenkins, Alan. (2000). Kolb's experiential learning theory and its application in geography in higher education. *Journal of Geography*, 99: 5, 185-195.

<http://daretodifferentiate.wikispaces.com/file/view/4MAT.pdf> (retrieved on 25.08.2010).

<http://www.animatedsoftware.com/statglos/statglos.htm> (retrieved on 30.06.2011).

<http://www.lifecircles-inc.com/Learningtheories/constructivism/kolb.html> (retrieved on 07.04.2010).

<http://www.pvc.maricopa.edu/lsc/staff/NewTutorL1A4MAT.ppt#260,5,4MAT>
Conceptual Foundation (retrieved on 13.06.1981).

Janzen, Joy. Teaching Strategic Reading. *Methodology in Language Teaching. An Anthology of Current Practice*. Richards, Jack C.; Renandya, Willy A. (Edt), (p. 287-294).

Kern, Richard G. (1989). Second language reading strategy instruction: its effects on comprehension and word inference ability. *The Modern Language Journal*, 73(2), 135-149.

Knutson, Elizabeth M. (1997). Reading with a Purpose: Communicative Reading Tasks for the Foreign Language Classroom. *Foreign Language Annals*, 30, N.1, 50-57.

Kolb, A., Kolb, D. (2005). The Kolb learning style inventory- version 3.1 2005 technical specifications. *Experience Based Learning Systems*, 9, 1-71.

Kolb, Alice Y., Kolb, David A. (2005). Learning styles and learning spaces: enhancing experiential learning in higher education. *Academy of Management Learning & Education*, Vol. 4, No. 2, 193-212.

Kumaravadivelu, B. (1994). The postmethod condition: emerging strategies for second/foreign language teaching. *Tesol Quarterly*, Vol. 28, No. 1, 27-47.

- Learning styles in the ESL/EFL classroom. (pp. 108-117). New York: Heinle and Heinle Publishers.
- Macaro, Ernesto. (2006). Strategies for language learning and for language use: revising the theoretical framework. *TESOL Quarterly*, 90(3), 320-337.
- Marefat, Hamideh. (2003). The impact of teaching direct learning strategies on the retention of vocabulary by efl learners. *The Reading Matrix*, 3(2), 47-62.
- McCarthy, Bernice. (1990). Using the 4Mat system to bring learning styles to schools. *Educational Leadership*. 31-37.
- Montgomery, Susan M., Groat, Linda N. (1998). Student learning styles and their implications for teaching. *The Center For Research On Learning And Teaching, The University of Michigan*, 10, 1-8.
- O'Malley, M., Chamot, Anna U., Stewner-Manzanares, G., Pusso, Rocco P., Küpper, L. (1985). Learning strategy applications with students of English as a second language. *TESOL Quarterly*, 19(3), 557-584.
- Oxford, Rebecca L. (1990). Language Learning Strategies and Beyond: A Look at Strategies in the Context of Styles. *Shifting the Instructional Focus to the Learner*. 35-55.
- Oxford, Rebecca L. (2003). Learning Styles and Strategies: An Overview. *GALA*, 23, 1 25.
- Oxford, Rebecca., Crookall, David. (1989). Research on language learning strategies: methods, findings, and instructional issues. *The Modern Language Journal*, 73(4), 404-419.

- Oxford, Rebecca. (1986). Second language learning strategies: current research and implications for practice. *California University, Center for Language Education and Research*, TR3, 3-48.
- Peker, Murat., Mirasyedioğlu, Şeref., Yalın, İbrahim. (2003). Öğrenme stillerine dayalı öğretimde 4Mat öğretim modeli. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, 1(13), 1-14.
- Reid, Joy M. (1987) The learning style preferences of esl students. *TESOL Quarterly*, 21(1), 87-111.
- Reid, Joy M. (1998). *Understanding Learning Styles in the Second Language Classroom*. USA: Prentice Hall Regents.
- Sadler-Smith, Eugene. (1997). Learning style: frameworks and instruments. *Educational Psychology*, 17(1), 51-63.
- Sadler-Smith, Eugene., Smith, Peter J. (2004). Strategies for accommodating individuals' styles and preferences in flexible learning programmes. *British Journal of Educational Technology*, 35(4), 395-412.
- Shih, May. (1992). Beyond comprehension exercises in the esl academic reading class. *TESOL Quarterly*, 26(2), 289-318.
- Stebbins, C. (1995). Culture-specific perceptual-learning-style preferences of postsecondary students of English as a second language. In J. M. Reid (Ed.)
- Svinicki, Marilla D. , Dixon, Nancy M. (1987). The Kolb model modified for classroom activities. *College Teaching*, 35(4), 141-146.

Wilkerson, Rhonda M., White, Kinnard P. (1988). Effects of the 4Mat system of instruction on students' achievement, retention, and attitudes. *The Elementary School Journal*, 88(4), 357-368.

Wolfe, Patricia (2001). *Brain Matters: Translating Research into Classroom Practice*. Alexandria: ASCD Press.

APPENDICES

APPENDIX A

Reading activity for Note-taking Strategy and Concept Map

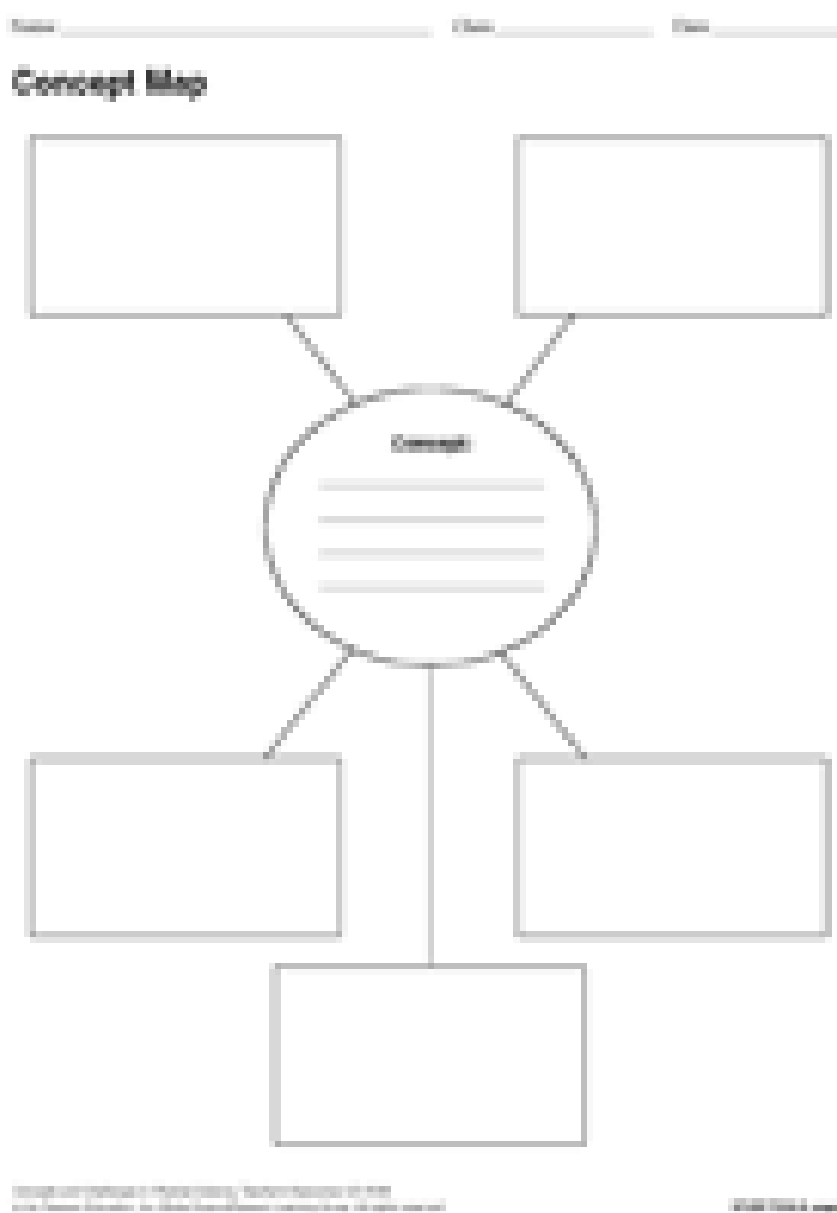
Read the text and answer the questions accordingly.

Grammar

The way language experts are using the word grammar differs in another way from its most common meaning. People generally tend to think grammar as the rules of a language like “Present Simple” for general activities and daily routines or “Simple Past Tense” for actions that happened at a definite time in the past. However, in the sense of language experts, the word grammar includes everything speakers know about their language - the sound system, called phonology such as the pronunciation of “ship vs. sheep”, the system of meanings, called semantics like the meaning of the idiom “It’s raining cats and dogs” (Actually no cats or dogs fall from the clouds but it is raining a lot), the rules of word formation, called morphology as in “possible- impossible/ success- successful”, and the rules of sentence formation, called syntax like “I eat an apple everyday (S+V+O)”. It also of course includes the vocabulary that the speakers of a language use- the lexicon (animal- noun / eat-verb/ badly-adverb / good-adjective). In short, most of us think of the grammar of a language as referring only to the syntactic rules. This is what most students also mean when they talk about their class in “English Grammar”. In fact, it is more than that according to the linguists.

Questions:

1. What is the main idea of the passage?
2. How many definitions of grammar are there?
3. Who makes these definitions?
4. What are the subcategories of grammar?

CONCEPT MAP

APPENDIX B

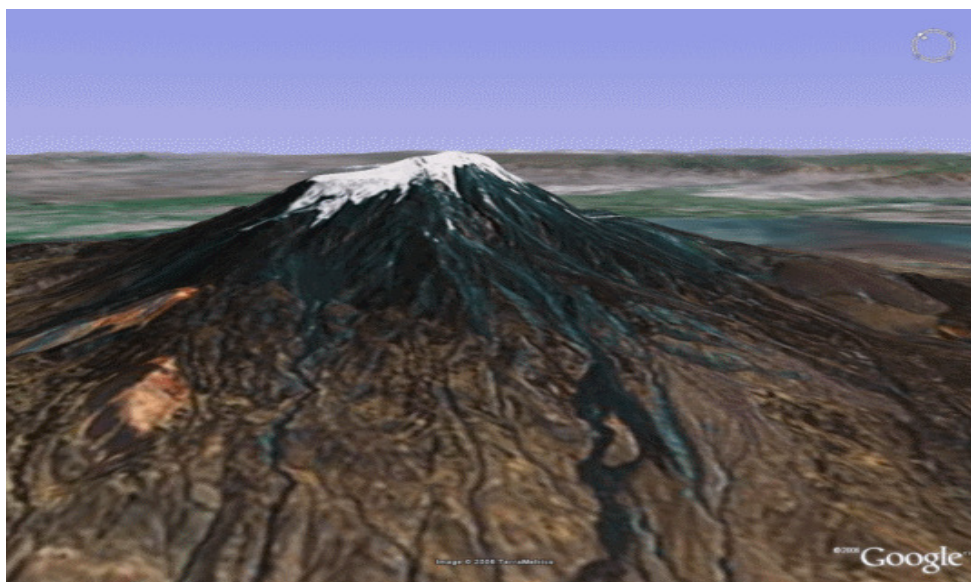
Reading Activity for Note-taking Strategy

The most / est of TURKEY

The Highest Mountain of Turkey

Best known for its sunny climate and sandy Mediterranean beaches, Turkey isn't often associated with mountain climbing. However, Turkey has several mountains which are great for mountain climbing. One of them is the highest mountain of Turkey, Mount Ağrı.

Mountain climbing at Mount Ağrı in Turkey



Mount Ağrı is very popular with mountain climbers in Turkey. It is situated in the South East of Turkey and borders Armenia and Iran. Standing at an altitude of 5137m., this is the highest mountain in Turkey making it a particular challenge to mountain climbing enthusiasts. The best time of year for climbing this mountain is during the summer months when the weather is sunny and pleasant, although the peak is full of snow all year. Like other mountain climbing spots in Turkey, there are several local guides willing to take you up the mountain and it is inadvisable to climb this mountain alone. People wishing to climb this mountain in Turkey during the winter months should expect harshly cold weather conditions including heavy snowfall.

The Longest River of Turkey

Kizilirmak



Kizilirmak, meaning Red river in Turkish, is 1,355 km long and is the longest river of Turkey which rises and ends within the country. The river is born from Kizildag mountains in the northeast of Central Anatolia, passes from Sivas, Kayseri, Nevsehir, Kirsehir, Kirikkale, Ankara, Çankiri, Çorum and Samsun provinces, reaching the Black Sea at Bafra. Some of the dams built on Kizilirmak are; Kesikköprü, Hirfanli, Kapulukaya, Altinkaya and Derbent. It is a source of hydroelectric power and is not used for transportation.

The Longest Bridge of Turkey



Bosphorus

The Bosphorus Bridge links two continents - Asia and Europe, and this makes it quite unique. The bridge is located between Ortaköy (on the European side) and Beylerbeyi (on the Asian side). At the time of its completion it was one of the longest suspension bridges in the world. It is quite a great feeling driving over the bridge and leaving the one continent only to enter the other a few minutes later.

Even though it is a toll bridge, people do not have to pay any fees during festivals, or bayrams such as Ramadan. The construction of the bridge took 3 years and the cost was 22 million US Dollars.

The Bosphorus Bridge was officially opened in 1973 during the 50th anniversary celebrations of the foundation of the Republic.

The bridge is 1560 m long. It has a width of 33.40 m and an altitude of 64 m. The bridge plays an enormous role in Istanbul traffic. It has three lanes, i.e. roads, at each direction and about 91,000 vehicles cross the bridge daily. It is the 4th of the longest bridges in Europe and the 7th in the world. Before the construction of the bridge, the only way of transport between the two continents was the ferry, and people still use it

very much, especially to escape from the heavy traffic on the bridge. However, a drive across the bridge is recommended for the scenic views of the city over the Bosphorus.

The tallest building of Turkey

Diamond of Istanbul



Diamond of Istanbul is the tallest building of Istanbul and Turkey. It is currently being built in the city's Maslak business district. It is also the country's first steel skyscraper. When completed in 2010, it will rise 53 floors and reach the height of 270 meters.

The design of Diamond of Istanbul, by Dome Architecture of Istanbul, consists of three main parts: tower, shopping mall and car park. A five star deluxe hotel, A-class offices and residences are located in the tower section. The section is rising on a horizontal shopping mall. The green inner gardens that will work like special places are designed to unite people and through that way to bring a solution to the main problem of the metropolitan people; feeling the nature.

The panoramic restaurant on the top-most floor will offer a breathtaking view of Bosphorus from the beginning till the end. The building will generate its own energy by using cogeneration technology.

The Best-known Natural Feature of Turkey

Cappadocia



Almost every traveler says it is a fantastic natural feature, and it really is! And it is one of the best! Cappadocia is not so far away from Ankara, just 4-5 hours by bus. It is located in Nevşehir. On the way you see a big salt lake, the Tuz Gölü.

The interesting thing about Cappadocia is its special rocks and the cave homes, which are called "fairy chimneys". Also, there are "underground cities". Yet, Cappadocia is not really about the fairy chimneys or about the underground cities. It is greater than the sum of its parts, a combination of natural beauty and human construction that makes you amazed.

The reason for the special landscape is that the stone in this area is very soft. It is of volcanic origin. People have built cave homes in this area since long before Christ and natural forces have helped people to do this. You can see many valleys in different shades of beige, rose, and honey in the countryside of wine yards and melon fields.

The more you travel, the more you decide that places that are famous and well-touristed are often that way for a reason. Cappadocia very much fits into that pattern. Moreover, Cappadocia, like much of Turkey, is a pleasurable travel destination, with silent villages, friendly locals and gorgeous hotels and restaurants.

The City with the most Historic Sites

Istanbul



Istanbul, with its unique position that connects Asia and Europe, is one of the most important cities on earth. What makes Istanbul special, and surrounds it with an extraordinary beauty compared to other cities, is the land-sea harmony along the Bosphorus. But of course there is more than that. Istanbul has a rich historical past since it became a bridge between different cultures, societies and even civilizations. It is also a backdoor opening through Ottoman and Byzantine Empires. Being unimpressed by the historical tissue of Istanbul is almost impossible. Every year, millions of tourists visit Istanbul because of its historical importance. Here are five historical places which impress visitors every year.

1. Topkapi Palace



Its construction started in 1459 by the order of Ottoman Sultan Mehmed II. Mehmet II is one of the important sultans of Ottoman Empire since he was the conqueror of Istanbul. Topkapi Palace was the home and official residence of Ottoman Emperors from 1465 to 1863. The historical tissue of Topkapi Palace damaged because of big earthquakes and fires. Currently, Topkapi Palace is a museum. It is under administration of Ministry of Culture and Tourism. When you visit Topkapi Palace Museum, you can see a large collection of Ottoman art and architecture, Ottoman miniatures, weapons, and a display of Ottoman treasure and jewelry.

2. Dolmabahce Palace



It is located at the European side of Istanbul. After 1853, it was used as the official residence of Ottoman Emperors. It was also the administrative center of Ottoman Empire from 1853 to 1922. Dolmabahce palace is the first European style palace in Ottoman Empire history. It was built by Ottoman Sultan Abdulmecid II between 1842 and 1853. Mustafa Kemal Ataturk, founder and the first president of Turkey Republic, spent his last years in this palace. Ataturk died in November 10, 1938 in Dolmabahce Palace.

3. Yildiz Palace



It was built in 1880 and used by the Ottoman Sultan Abdulhamid II. Inside Yildiz Palace, there are apartments, pavilions (villas), theatre, opera house, museum and a porcelain factory.

4. Beylerbeyi Palace



Unlike Dolmabahce, Topkapi and Yildiz palaces, Beylerbeyi Palace is located at the Asian side of Istanbul. It was built between 1861 and 1865 by the order of Ottoman Sultan Abdulaziz. It was designed in baroque style. It was mainly used as a place to entertain visiting heads of state. Sultan Abdulhamid II spent his last years of captivity, being in prison, in Beylerbeyi palace. He died in Beylerbeyi Palace in 1918.

5. Ciragan Palace



It is located between Besiktas and Ortakoy at the European side of Istanbul. It was built between 1863 and 1867 by the order of Ottoman Sultan Abdulaziz. It was designed by famous Armenian architect Nigogayos Balyan and constructed by his sons Hagop and Sarkis Balyan. In 1910, it was destroyed by a great fire. However, the ruined palace was restored in 1991. It was designed in Baroque style during restoration. Currently, it is used as a five-star hotel.

APPENDIX C

Reading Activity for Note-taking Strategy and Process Chart

Sharon's Blog

Easy Recipes



Yeah, it's Vegan, it's Gorgeous and it's Easy to cook; do you wonder what it is?

Fa-la-felllll

Have you ever eaten hot and crispy falafel balls inside a pocket pita? Was it crunchy and a little spicy?

Did it make you wonder what they are made from? Are they healthy? And what is their origin?

In contrary to many other street foods, falafel is actually considered a healthy food.

Falafels are fried small balls, and they are usually made of chickpeas. They contain important nutrients **such as** protein, potassium and magnesium. And when deep fried, it includes relatively little fat.

Falafel is a very popular food in many Middle East countries **like** Lebanon, Egypt, and Israel. They all have their own version of how to make Falafel and how to eat it.

Several nations claim credit for its origin. The generally accepted view about the origin of Falafel is that people in Egypt first cooked falafel, and then it has become a dish eaten throughout the Middle East. As a main dish, it is served as a sandwich, stuffed in pita bread with lettuce, tomatoes, and tahini. As an appetizer, it is served on a salad, or

with hummus and tahini.

Falafel is a favorite food among vegetarians since it does not include any meat. These little balls of chickpeas are now found around the world as a replacement for meat and as a form of street food. Especially, in Middle East, you can see vendors sell it on the street corners because it is very popular in the Middle East as a fast food. **For example**, in Egypt, McDonald's has their version of a falafel sandwich. Can you guess the name? McFalafel, of course.

If you wonder how this popular food is made, here is a practical recipe for you to prepare delicious falafels....

Prep Time: 15 minutes

Cook Time: 45 minutes

Total Time: 60 minutes

Ingredients:

- 1 cup of dried chickpeas
- 1 large onion, chopped
- 2 cloves of garlic, chopped
- 3 tablespoons of fresh parsley, chopped
- 1 teaspoon of coriander
- 1 teaspoon of cumin
- 2 tablespoons of flour
- Salt
- Pepper
- Oil for frying

Preparation:

The first step of making falafel is placing chickpeas in a bowl and covering them with cold water. You should allow peas to soak overnight. This makes it easy to cook the beans. Yet, omit this step if you are using canned beans. Instead of chickpeas, chickpea flour can also be used (it is widely available in Asian shops) but personally, I prefer falafel made from whole chickpeas rather than chickpea flour. The taste is superior and the texture is more interesting.

Next, drain chickpeas, and place them in pan with fresh water, and bring to a boil. Allow to boil for 5 minutes and let simmer on low for about an hour. When you decide that chickpeas are soft enough, drain them and allow to cool for 15 minutes.

In the next step, you should combine chickpeas, garlic, onion, coriander, cumin, salt and pepper (to taste) in medium bowl and add flour. If you find your falafel is falling apart, by all means use more flour, but add a little at time.

After that, form the mixture into small balls, about the size of a ping pong ball. Slightly flatten. They are best no more than about 1 cm thick - otherwise they take too long to cook inside.

Finally, fry the falafel balls in 2 inches of oil at 350 degrees until they become crispy and turn a golden brown color. This process will take about five minutes.

Serving Suggestion

Serve your falafel balls hot. Good appetite!!!

Falafel can be served as an appetizer with hummus and tahini, or as a main course, you can stuff pita bread with falafel, lettuce, tomatoes, tahini, salt and pepper. As an alternative, falafel can be formed into patties and served like a burger.

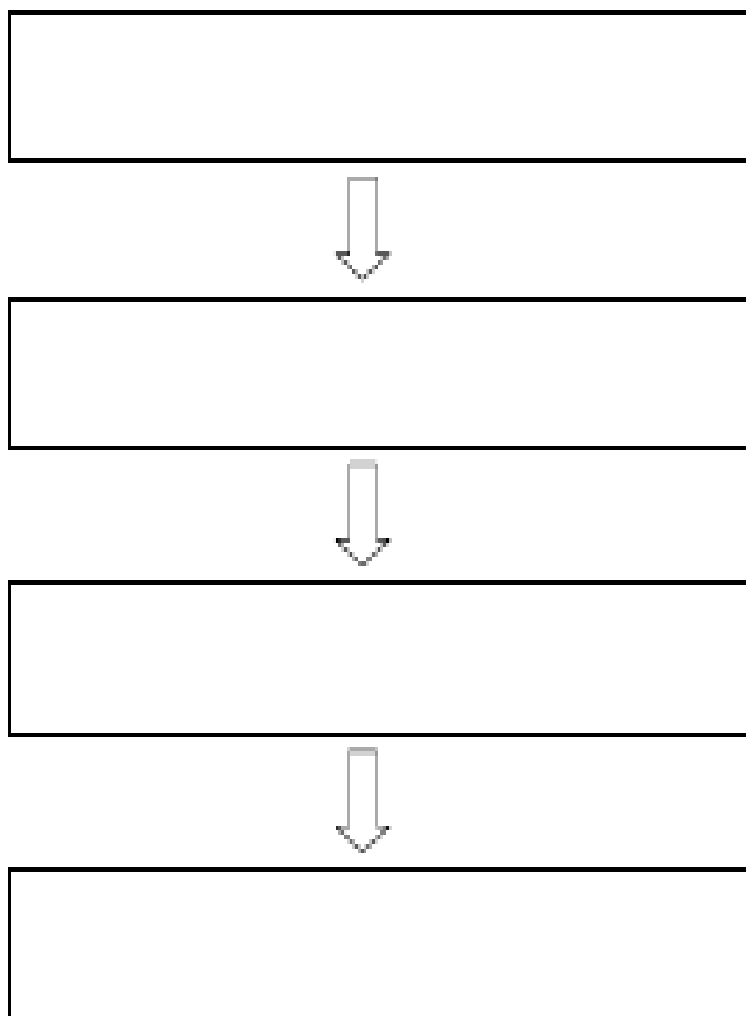
Questions:

1. Who's the owner of Falafel?
2. Why is it popular among vegetarians?
3. Although it is a street food, why is it considered healthy?
4. How many basic steps are there in the process of preparing Falafel? What are they?

PROCESS CHART

Chain of Events Graphic Organizer

Purpose: Use this graph to organize steps in a process, to trace plot development, or to record the stages of an event.



APPENDIX D

Reading Activity for Note-taking Strategy and Concept Map



Want to have a Good Memory?

Many people complain that their memory is bad, especially as they get older. Phone numbers, names, facts we have studied recently- life is easier if we can remember them all without much effort when we need. For example, right before a difficult exam, don't you want to be more **certain** (sure) of the information in your book? Or before an important meeting, isn't it nice to know all important details and take attention of your manager? Is there a way to **improve** (make better) our memory? If so how can we improve this fantastic machine?

Many people think that repeating things is the best way to remember them. While this undoubtedly helps short-term memory, psychologists are not sure about its effects on long-term memory. They say it does not help you remember things for a long time. However, there's a more helpful technique to increase the limit of our short-term memories: "chunking information". A "**chunk**" is any meaningful unit of information. Look at the following numbers for about 10 seconds for example, how many of them can you remember?

1492178919931848

But look at them in "chunks", and it becomes much easier:

1492 1789 1993 1848

Here we have another example. Now look at the following 11 individual letters, and try to memorize them in 10 seconds:

J S F K P O U B C A U

How about this list in chunks:

BJK USA PC UFO

Another way to train our memories is making use of pictures. Visuals are extremely powerful aids to increase understanding and to remember things because we, as humans, are fairly visual animals. Although we have the ability to process information by doing and hearing, we take in more information visually. Research shows the capacity for long-term memory of pictures is almost unlimited. The following study seems to prove this research. In one of the studies, one group of students memorized dictionary definitions of words, **while** (shows contrasting ideas) a second group drew their own pictures of the words. The second group's **retention** (remembering) of the words was much bigger. In short, thinking in pictures increases our understanding and remembering a lot.

There's still another method to improve our memories. **Inventing** (creating) stories about all the things we need to learn or remember is a pretty good technique. In some experiments, experts asked people to remember up to 120 words using this technique and then they tested these people. The result is here: The people were able to recall 90 per cent of the words on average.

However, not all of us are interested in learning long lists of names, words or numbers just for fun. Some of us have to study large amount of factual information; for those, psychologists suggest that the best way to learn, remember, and to form meaningful connections is to ask yourself lots of questions as you **process** (work with) information because the brain works better if it looks for answers to questions. For example, think that you are reading a text about a **disease** –illness-, you can ask yourself questions like, "Do people get it from water or food? , What parts of body does it affect?, What are the symptoms of it?".

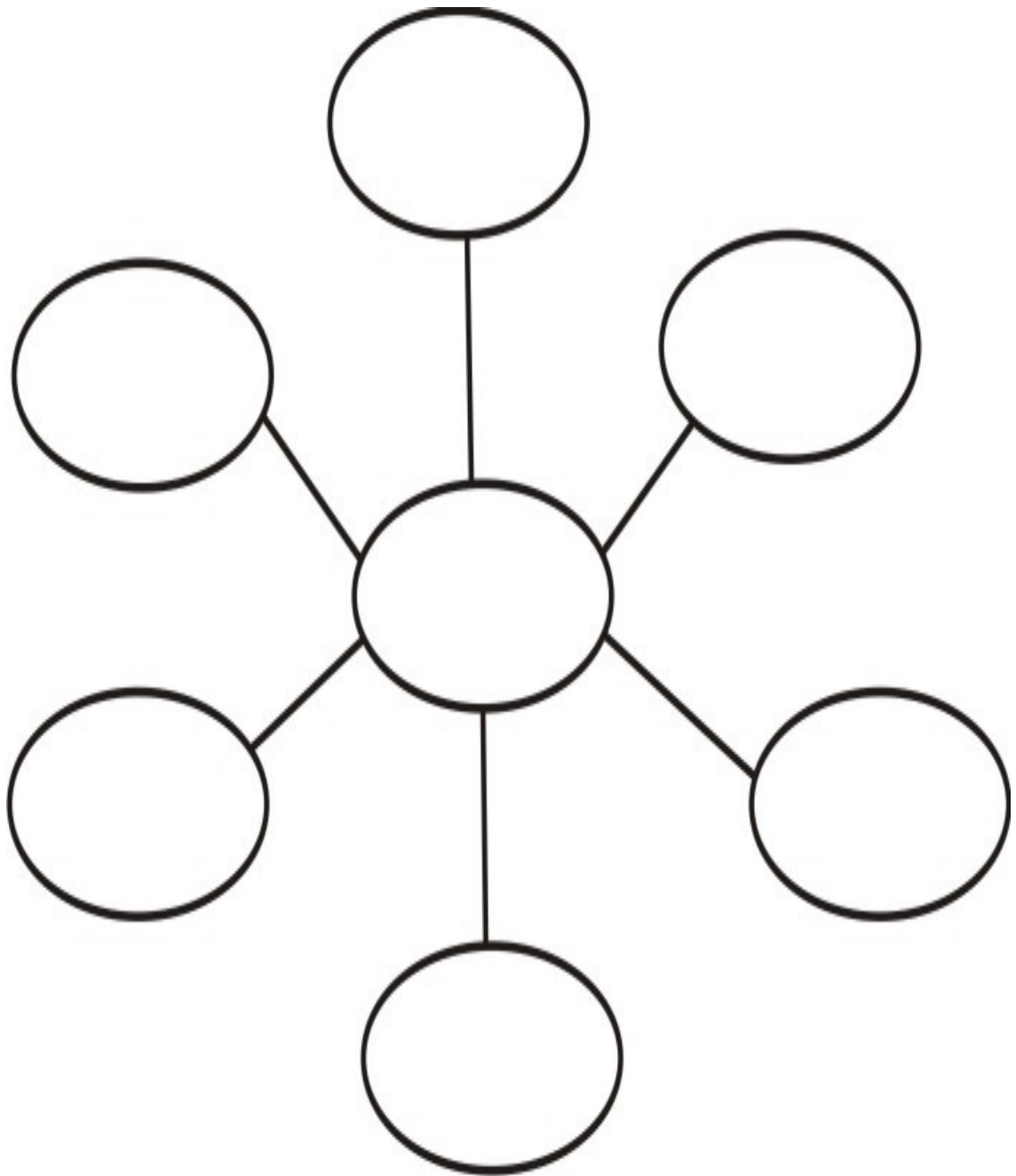
So why are we all talking about these techniques for a good memory? Because memory is **vital** (extremely important) for all of us. It is the thing that makes us who we are and makes our lives meaningful. Thanks to our memories, we get, process, and store new information. To understand its importance, just think of people who have lost their memories, now you got it better?

Adapted from *Brain Matters* by Patricia Wolfe and *Cutting edge* by Moor & Cunningham.

Questions:

1. What are the techniques for helping you remember things?
2. According to the text, which technique(s) is/are useful

- if you have to put a telephone number in your mind until you call?
- for remembering things for a few seconds?
- for rising up your short-term memory span when you have to remember your friend's bank account number?
- if you have to learn all the new words in unit 4-5 in your Touchstone book?
- If you have to finish 3 chapters on "Psychological Disorders" for your *Introduction to Psychology 1* course?

CONCEPT MAP

APPENDIX E

Reading Activity for Note-taking Strategy and T-Chart

The Pros and Cons of Facebook

Internet has a vital role in our lives for about 20 years, and we have used it for many different purposes. One of them is communication. People use different ways to communicate online such as messenger, e-mail, and twitter. One of the most popular ways to communicate using the Internet is Facebook. Although having a Facebook account is very popular these days, it has certain pros and cons. One major advantage is that you can keep in touch with your friends, even if you are physically far apart. You can find your old friends or relatives and reconnect them. Another advantage is that you can have a great time when you are online. You can watch different videos, or listen to music, and play many different games. However, there are some drawbacks of using Facebook. First of all, some unwanted friends or many unknown people can bombard you. Also, you may be annoyed because of the spams or advertisements. Another disadvantage is that you may lose your privacy. Everything you post, share, upload, and pictures you get tagged in will be shown in the updates. Lastly, you will waste a lot of time on the net because Facebook is addictive.

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APPENDIX F

Exercise for Summarizing Strategy

What Is Summarizing?

Summarizing is the process of writing a shortened version of a text by including the main points and key ideas in a text in your own words. Webster's dictionary calls a summary the **"general idea in brief form"**; it's **the reduction of a larger work into its primary notions**.

A good summary shows that you have understood the text fully

When Are The General Mistakes While Writing Summaries?

When teachers asks students to summarize, generally students

- write down everything
- write down unimportant points as well
- write way too much
- don't write enough, skip important points
- copy word for word

What Should Students Actually Do While Writing Summaries?

- pull out main ideas
- focus on key details, not every detail
- break down the larger ideas
- write only enough to convey the gist
- use their own words

What Are We Doing When We Summarize?

We focus on the heart of the matter, and delete the extra and unimportant details. We are trying to capture the main ideas and the most important details necessary for supporting them.

Tips For Writing Good Summaries

The biggest problem with summary writing is deciding what to include and what to leave out.

Here are the techniques for making good summaries:

1. First, read the text to be summarized for general understanding. Just get a feel for the author's tone, style, and main message of the text. Don't stop to understand every detail.
2. Now read in a detailed way. Make sure you understand the content, including main idea and supporting details. Look carefully to topic sentence, and key words repeated.
3. Read through the material and cross out useless information while underlining what you believe to be the most important points (major supporting sentences). You should delete unimportant and repetitive information (minor supporting sentences; e.g. specific details, examples, anecdotes, expert's opinions, statistical information and etc.).
4. Write your summary in your own words. You can rearrange words and sentences, change the grammatical structure without changing the meaning, break up long sentences, and use alternative words or synonyms.
5.
 - Write a clear topic sentence
 - Rewrite the main ideas in complete sentences
 - Use conjunctions(but, however, because, therefore, although) to combine your notes
 - Make sure you don't change the original meaning, and don't write your own opinions
6. Your summary should be far less than the original text in length. A summary should approximately be one fourth of the original paragraph. (1/4)
7. When you have finished your summary, compare it to the original for accuracy.

An Example:

Source

The amphibia, which is the animal class to which frogs belong, were the first animals to crawl from(move slowly) the sea and inhabit (to live) the earth.

The Summary Process

The amphibia, which is the animal class to which frogs belong, were the first animals to crawl from (move slowly) the sea and inhabit (to live) the earth.

Summary

The amphibia were the first animals to leave the sea and live on dry land.

Exercises to understand the main idea:

Distinguish between main and unimportant information. Delete most details and simplify the text. Reduce complex sentences to simple sentences and write a short summary sentence for each text.

Example:

People whose professional activity lies in the field of politics are not, on the whole, reliable for their respect for telling truth all the time.

Politicians often lie.

- a. Failure to consume an adequate quantity of solid food over an extended period of time is absolutely certain to lead to death.
_____.
- b. It is undeniable that the large majority of non-native learners of English experience a number of problems in attempting to master the phonetic patterns of the language.
_____.
- c. Tea is well known to be high on the list of those beverages which are most frequently drunk by the inhabitants of the British Isles.
_____.
- d. It is not uncommon to encounter sentences which, though they contain a great number of words and are constructed in a highly complex way, none the less turn out on inspection to convey very little meaning of any kind.
_____.
- e. One of the most noticeable phenomena in any big city, such as London or Paris, is the steadily increasing number of petrol-driven vehicles, some in private ownership, and others belonging to the public transport system, which congest the roads and make rapid movement in traffic more difficult year by year.
_____.

APPENDIX G

Note-taking Strategy Test

A) Read the following text and the sample outline following it. Part of the outline has been done for you. Complete the rest of the outline by taking your own notes according to the text. (11x2=22)

THE LAYERS OF THE EARTH

The earth has four layers. We live on the earth's crust, the top layer of the earth. Small pieces of rocks form this layer. The continents, ocean floors, mountains, and valleys of the earth's surface are in the earth's crust. The crust contains two segments, the oceanic and continental crusts. The oceanic crust is the thinner crust. Basalt makes up this part and oceans exist here. The continental crust is the thicker of the two crusts. Granite forms this layer and there are landmasses in this part. Under the crust is the rocky mantle. It includes silicon, oxygen, magnesium, iron, aluminum, and calcium. The mantle is about 2,750 km thick. It gets warmer with depth; the top of the mantle is about 870 °C; toward the bottom of the mantle, the temperature is about 2,200- 3,700 °C. The outer core is the third layer. It is a liquid and contains sulphur and oxygen. It is about 2,260 km thick. The inner core is at the center of the earth and is deeper than all the other layers. It is solid, has a radius* of about 1,228 km and a temperature of about 3,000 – 6,500 °C.

* yarıçap

LAYERS OF THE EARTH

I. crust

Top layer

Small pieces of rock

Continents, ocean floors, mountains & valleys

A. oceanic crust

- Thinner
- _____
- Contains oceans

B. continental crust

Thicker

Granite

II. mantle

Si, O, Mg, Fe, Al & Ca

2, 750 km thick

Top temp: 870 C

Bottom temp: 2,200- 3,700

III. _____

IV. _____

C) Read the following text and the sample outline following it. Part of the outline has been done for you. Complete the rest of the outline by taking your own notes according to the text. (20x2=40)

A BALANCED DIET

The first step of staying healthy is eating a balanced diet. If so, what does a balanced diet include? A balanced diet means taking different nutrients in our bodies. Nutrients are substances in food necessary for good health. Unlike plants, our bodies can't produce nutrients. We get them from food when we eat. During digestion, the body breaks food into its nutrients, absorbs (takes) them into our bloodstream and carries them to every cell. There are more than 40 nutrients with specific functions. We can group them as carbohydrates, fats, proteins, vitamins and minerals.

Carbohydrates are the body's main source of energy. They are either simple, called sugars, or complex, called starches. We can get carbohydrates from cereals, rice, potatoes, bread, spaghetti, fruits and vegetables. Our bodies need carbohydrates to use fats effectively. We also need them for our brains. The brain cannot work properly without carbohydrates because it uses a lot of simple carbohydrates each day. This amount is equal to 150 grams of sugar a day. Carbohydrates should make up 40% of our diet.

The second group, fats are of two kinds. Saturated fats are solid (not liquid) at room temperature. Butter, cheese, milk, cream, chocolate, and ice-cream contain this type of fats. Unsaturated fat, on the other hand, are liquid at room temperature. Nuts, oils and fish contain unsaturated fats. Many people think that fats are totally bad for you, but our bodies actually need them. Fats are a part of some body cells and carry nutrients. They help to keep the body warm and active because they are an important source of energy. Moreover, our bodies can store Vitamins A, D, E and K thanks to fats. With all these functions, you may think you need a lot of fat but actually you don't. To stay healthy, it is a good idea to limit the amount of fat down to 10% of your diet.

Proteins are the second most plentiful substance in our bodies. The first is water. Almost 20% of our weight is proteins in our bodies. Our muscles, hair, nails, skin and eyes are mostly protein. They build and repair body cells and are essential for growth. When the body doesn't have enough fat or carbohydrates, it often uses protein as energy. Foods high in proteins are eggs, milk, rice, meat, corn, fish and chicken. 20% of our diet should include proteins.

Vitamins are necessary for many different body processes like controlling internal (inside) chemical reactions and using the energy coming from foods. They do not provide energy but they help our bodies use the energy from foods. Each vitamin has a specific role; for example, Vitamin A is necessary for healthy skin and good eyesight. We can get it from milk, vegetables and fruit. Vitamin C from vegetables and fruit increases our resistance to cold. Vitamin D coming from cheese, milk and yoghurt makes our bones and teeth strong.

Minerals are similar to vitamins in function. Calcium builds strong bones and teeth. We get iron and zinc from meat, vegetables, fruit, bread and cereals and several body enzymes need these to function. Magnesium is vital for a healthy nervous system. Vegetables, fruit, bread and cereals are rich in this mineral. We should take enough vitamins and minerals to meet our bodies' need; 30% of our diet should contain vitamins and minerals.

NUTRIENT	KIND/EXAMPLE	SOURCE	USE
Carbohydrates	1. _____ Complex	2. _____ _____ _____	To use fats effectively 3. _____
Fats	Saturated 4. _____	Butter, cheese, milk, cream, chocolate, ice-cream 5. _____ _____	6. _____ _____ _____ _____
7. _____		Eggs, milk, rice, corn, meat, chicken	Necessary for body cells 8. _____

9. _____	A C D	10. _____ Vegetables, fruit 13. _____	11. _____ 12. _____ 14. strong bones & teeth
14. _____	Calcium Iron & 15. _____ 18. _____	16. _____ _____ 19. _____	Strong bones & teeth 17. _____ 20. _____

C) Read the following passages. Then, decide what format is most suitable to organize your notes and complete the suitable chart for each passage by using only key words. (19x2=38)

Passage A

Animals living in modern zoos enjoy several advantages over animals in the wild; however, they must so suffer some disadvantages. One advantage of living in the zoo is that the animals do not live with their natural predators (hunters); they are protected and can, therefore, live without risk of being attacked. Another advantage is that they regularly eat a special, well-balanced diet; thus, they do not have to hunt for food or suffer times when food is hard to find. On the other hand, zoo animals face several disadvantages. The most important disadvantage is that since they do not have to hunt for food or face their enemies, some animals became bored, discontented or even nervous. Another disadvantage is that zoo visitors can endanger their lives. Some animals can pick up some diseases from humans.

Passage B

The people in Papua New Guinea were suffering from malaria (an illness coming from mosquitoes), so they needed a solution for this problem. The World Health Organization (WHO) began a DDT spraying program in Papua New Guinea, and this program virtually stopped malaria. But other things began to happen. Besides killing mosquitoes, the DDT killed other insects that lived in the houses, such as flies and *cockroaches. These insects were the favorite food of *geckos, and so when the geckos

ate the dead insects, they died from DDT poisoning. Similarly, the house cats ate the dead geckos and cockroaches, and they too died from the DDT poisoning. As a result, the rat population increased a lot. The rats were carrying a type of virus, and the human population of Papua New Guinea began to die from this virus coming from the rats. In order to deal with this dangerous situation, thousands of cats were spilled onto the island, and the operation took the name “Operation Cat Drop” (OCD).

* cockroach: hamamböceği

* gecko: kertenkele

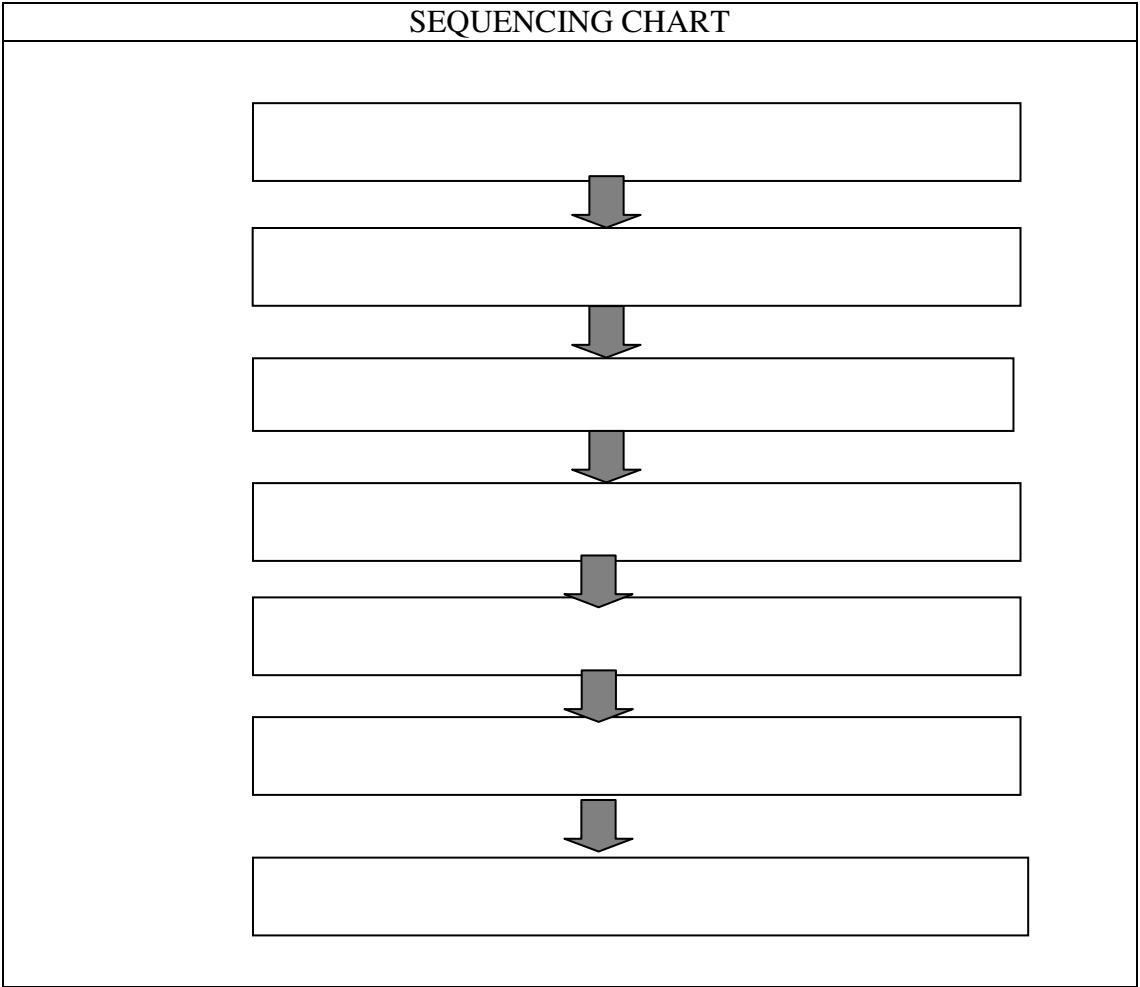
Passage C

The cloning (genetic copying) of Dolly involved several steps. First, scientists kept Dolly's mother's *cells for five days, and this caused them to stop dividing (increasing in number). After five day, they take the *nuclei of these cells and transfer them into an unfertilized sheep egg. After they grew the egg in the laboratory for a period of time, they implanted the egg into a different sheep, and the egg grew there normally. When the sheep finally gave birth, the lamb was an exact genetic copy, or clone, of the sheep that provided the transferred nucleus, not the sheep that provided the egg.

* nuclei: çekirdekler

* cell: hücre

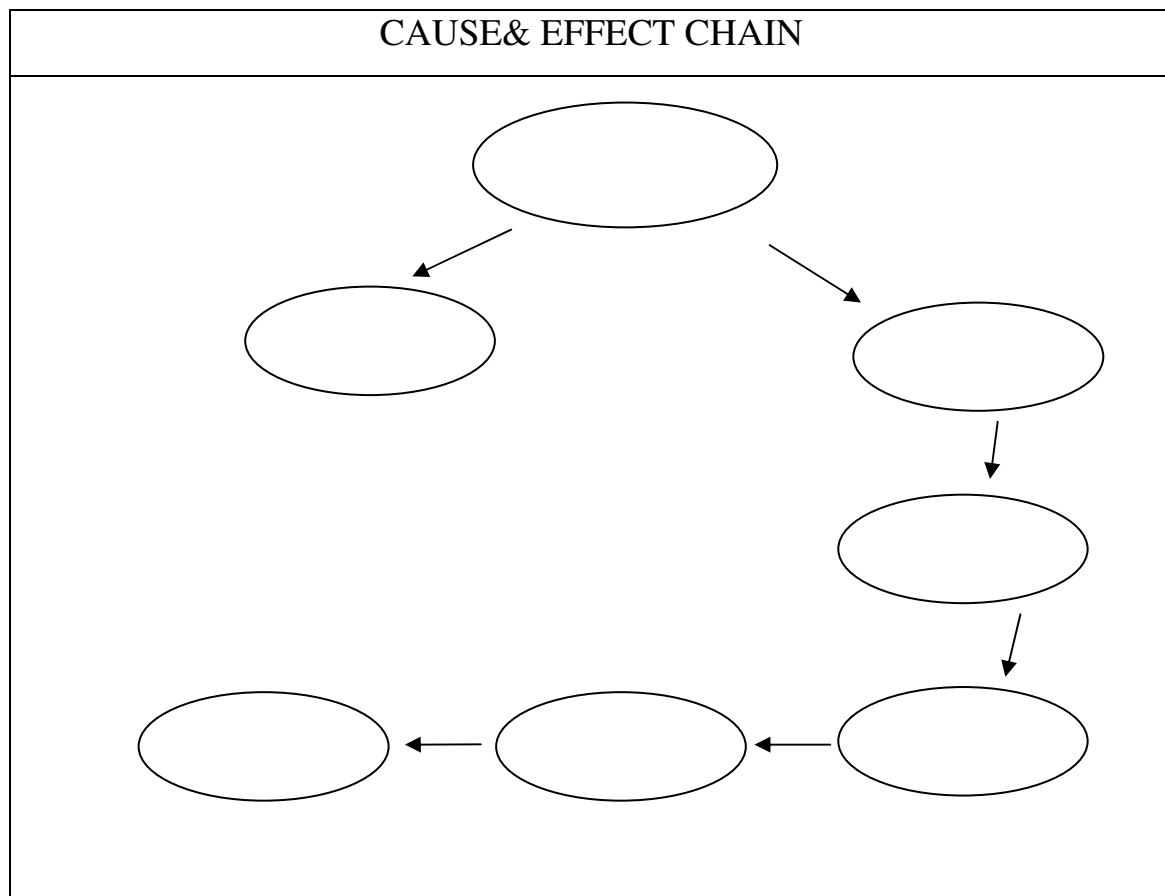
A)



B)

T CHART	

C)



APPENDIX H

Summarizing Strategy Test

Read the following text carefully. Then delete unimportant information and make a summary of it as short as possible.

As children, boys and girls have hemispheric differences. Generally, the female brain develops with a larger left hemisphere. Males start out as young boys with a larger right hemisphere. The implications of this are interesting. As I stated earlier, we know that women tend to be more verbal than men are. In fact, female toddlers have a much larger vocabulary than the boys their age. If we look again at the functions of the two hemispheres, this all makes perfect sense. The left hemisphere has verbal language as one of its functions. If this part of the brain develops earlier in girls, it is no wonder that girls are far more superior to boys in terms of communication skills and vocabulary. A study that was conducted at the University of Buffalo compared the hemispheric differences between male and female infants. Amazingly enough, while the girls were listening and processing language in their left hemispheres, the boys used their right hemispheres. It seemed that the boys didn't begin to use their left hemispheres until 9 months of age. The girls already start making a lot of neural connections in the language areas for months before the boys got started.

From How to Teach so Students Remember by Marilee Sprenger

Summary

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