DOKUZ EYLUL UNIVERSITY INSTITUTE OF EDUCATIONAL SCIENCES
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A STUDY ON THE USE OF READING STRATEGIES BY STUDENTS IN SCIENCE AND SOCIAL SCIENCE DEPARTMENTS

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To my dear family and my precious son

YEMİN METNİ

Doktora tezi olarak sunduğum "Fen ve sosyal bilimler öğrencilerinin kullandıkları okuma stratejileri üzerine bir çalışma" başlıklı çalışmamın, tarafımdan, bilimsel ahlak ve geleneklere aykırı düşecek bir yardıma başvurmaksızın yazıldığını ve yararlandığım yapıtların kaynakçada gösterilenlerden oluştuğunu, bunlara gönderme yapılarak yararlanılmış olduğunu belirtir ve bunu onurumla doğrularım.

29 Haziran 2010

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Yukarıda imzaların, adı geçen öğretim üyelerine ait olduğunu onaylarım.

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ÖZET

Bu çalışmanın temel amacı hazırlık sınıflarında okuyan fen ve sosyal bilimler öğrencilerinin kullandıkları okuma stratejilerini bulmaktır. Bu açıdan, çalışma Dokuz Eylül Üniversitesi Yabancı Diller Yüksekokulu hazırlık sınıflarında okuyan fen ve sosyal bilimler öğrencilerinin kullandıkları okuma stratejilerinde anlamlı bir farklılık bulunup bulunmadığını ve bu iki bölüm öğrencilerinin hangi okuma stratejilerini kullandıklarını araştırmayı amaçlamaktadır. Çalışma ayrıca cinsiyetin strateji kullanımına olan etkisini de bulmayı hedeflemektedir. Çalışmanın bir diğer amacı ise "Reading Keys" adlı ders kitabında yer verilen stratejileri incelemek ve ders kitabının hangi grup öğrenciye hitap ettiğini bulmaktır. Son olarak, çalışma fen ve sosyal bilimler öğrencilerinin kullandıkları okuma stratejileri ile onların okuduğunu anlama başarıları ve ders kitabının okuduğunu anlamadaki etkisi arasında anlamlı bir farklılık olup olmadığını ortaya koymak için tasarlanmıştır. Çalışmaya İzmir Dokuz Eylül Üniversitesi Yabancı Diller Yüksekokulu hazırlık sınıflarında okuyan dört yüz fen ve sosyal bilimler öğrencisi katılmıştır. Araştırmada kullanılan ölçme araçları Oxford, Chao, Leung ve Kim (2004) tarafından hazırlanan ve Uzunçakmak (2005) tarafından daha geçerli ve güvenilir veri almak için Türkçeye çevrilen okuma stratejileri anketi ve araştırmacının kendisi tarafından geliştirilen okuduğunu anlama testidir. Toplanan veriler bir istatistik paket programı kullanılarak analiz edilmiştir.

Çalışmadaki bulgular fen ve sosyal bilimler öğrencilerinin farklı okuma stratejileri kullandıklarını ve fen bilimleri öğrencilerinin sosyal bilimler öğrencilerinden daha fazla okuma stratejisi kullandıkları göstermektedir. Ayrıca, sonuçlar fen ve sosyal bilimler öğrencilerinin kullandıkları okuma stratejileri ile "Reading Keys" adlı ders kitabında yer verilen stratejiler arasında yeterli uyumun olmadığını ortaya koymaktadır. Buna ek olarak, cinsiyetin okuma stratejileri üzerinde etkisinin olduğu ve bayan öğrencilerin erkek öğrencilerden daha fazla okuma stratejisi kullandıkları sonucuna varılmıştır. Son olarak, sonuçlar fen ve sosyal bilimler öğrencilerin kullandıkları okuma stratejileri ile okuduklarını anlama başarıları arasında anlamlı bir farklılık olduğunu göstermektedir.

Araştırmanın sonuçlarına göre, araştırmacı fen ve sosyal bilimler öğrencilerinin farklı okuma stratejileri kullandıklarının ve cinsiyetin okuma stratejileri üzerinde etkisinin olduğunun öğretmenler tarafından bilinmesi gerektiği gibi bazı önerilerde bulunmuştur. Öğretmenler öğrencilerinin okuma süreçlerini anladıklarında, öğretim yöntemlerini öğrencilerin okumalarını kolaylaştırmak için ayarlayabilirler. Buna ek olarak, öğrencilerin okuma durumlarına göre, öğretmenler ve yazarlar öğrencilere uygun öğretim materyallerini ve ders kitaplarını düzenleyebilirler.

ABSTRACT

The major purpose of this study is to find out the use of reading strategies by science and social science students in prep classes. From this perspective, the study aims to investigate whether there is a significant difference in the use of reading strategies by students in science and social science departments in prep classes of School of Foreign Languages, Dokuz Eylül University and which reading strategies these two department students use. The study also intends to find out gender's effect on strategy use. Another goal of the study is to identify the reading strategies employed in the textbook "Reading Keys" and find out which group of students the strategies in the textbook appeal to. Finally, the study is designed to reveal whether there is a significant difference between the use of reading strategies by science and social science students and their achievement in reading comprehension and the effect of textbook on comprehension. The study focuses on four hundred science and social science students in prep classes of School of Foreign Languages, in Dokuz Eylül University in İzmir, Turkey. The research instruments are; a questionnaire modified by Oxford, Chao, Leung and Kim (2004) and translated into the students' mother tongue by Uzunçakmak (2005) to get more reliable and valid data; and a reading comprehension test developed by the researcher herself. The collected data used a statistical package to analyze the results.

The findings of the study reveal that science and social science students utilize different reading strategies and science students use more reading strategies than their social science counterparts. Furthermore, the results indicate that there is not an adequate correlation between the reading strategies employed by science and social science students and those utilized in the textbook "Reading Keys". In addition, it is concluded that gender has an effect on strategy use and that female students employ more reading strategies than male students. Finally, the findings demonstrate there is a significant difference between the use of reading strategies by science and social science students and their achievement in reading comprehension.

According to research findings, the researcher provides some recommendations, such as the teachers should be aware of the different strategy use of their science and social science students and the effect of gender. When teachers understand students' reading processes, they will be able to adjust their teaching skills to help students read easier. Furthermore, according to students' reading situations, teachers and authors can arrange the appropriate teaching materials and textbooks for the students.

CHAPTER I: INTRODUCTION

Background of the Study

Learning strategies have turned out to be a popular field of study since they are accepted as one of the major prerequisites for students' success. Various studies show that applying learning strategies facilitate learning.

In the area of learning a second language, learning strategies are useful in all types of language skills; listening, speaking, writing and reading. To develop effective reading, especially in prep classes of universities, some special strategies of reading are essential since the students will encounter various academic texts related to their fields of study. Achieving this aim is possible with the use of reading strategies which are the tactics used and controlled by readers when engaging and comprehending texts (Paris, Wasik, & Turner, 1991). In addition, the students should be able to understand and analyze foreign publications during their future academic studies. Levine, Ferenz and Reves (2000:1) state that the ability to read academic texts is considered one of the most important skills that university students of English as a second language (ESL) and English as a foreign language (EFL) need to acquire. Shuyun and Munby (1996) note that, ESL academic reading is a very deliberate, demanding and complex process in which the students are actively involved in a repertoire of reading strategies. When readers encounter comprehension problems they use strategies to overcome their difficulties. Different learners seem to approach reading tasks in different ways, and some of these ways appear to lead to better comprehension. The hope is that if the strategies of more successful readers can be described and identified, it may be possible to train less successful learners to develop appropriate strategies.

The use of reading strategies not only develops the students' reading abilities but also promotes their achievement. At the same time, textbooks are for assisting and concretizing learning. Thus, textbooks should include these various types of reading strategies of the learners to obtain the goal of learning. The textbooks should appeal

to both students from different fields of study by employing different types of strategies that the students may use. Therefore, one of the aims of this study is to explore the reading strategies utilized in the textbook which is used by science and social science students in prep classes.

Like learning strategies, reading strategies also vary individually. Students from different departments may use different reading strategies. These differences may be due to their cognitive styles, personalities, gender and so on.

There is much research about the use of reading strategies by freshmen. However, there is little research specifically aimed at investigating science and social science students' use of reading strategies. So, the aim of this study is to find out whether there is a significant difference in the use and frequency of reading strategies by these students from different fields of study. In addition, there is not much research aimed at exploring if and how second language reading strategy use at the university level differs according to gender. In this study, the researcher will try to cover the effect of this factor.

Finally, all the research about the effect of the use of reading strategies on achievement shows that there is a positive relation between reading strategy use and achievement. However, there is little research significantly aimed at exploring the effect of the reading strategies promoted in the textbook on science and social science students' reading comprehension in prep classes. Therefore, the researcher aims to explore whether there is a significant difference between the use of reading strategies by science and social science students and their achievement in reading comprehension. The researcher also tries to investigate which group of students the strategies utilized in the textbook appeal to.

To sum up, the purpose of this study is to investigate whether there is a significant difference in the use of reading strategies by students in science and social science departments in prep classes of School of Foreign Languages (SFL), Dokuz Eylül University (DEU) and which reading strategies these two departments'

students use. The study also aims at finding out gender's effect on strategy use. Another aim of the study is to explore the reading strategies employed in the textbook "Reading Keys" and to find out which group of students the strategies in the textbook appeal to. Finally, the study is designed to reveal whether there is a significant difference between the use of reading strategies by science and social science students and their achievement in reading comprehension and the effect of textbook on comprehension.

Purpose of the Study

The present study focuses on the types of reading strategies that science and social science students use, how reading strategies differ according to the students' departments and which department's students the strategies employed in the textbook appeal to. The better understanding of the processes underlying reading in a foreign language and learners' different reading strategies caused by their fields of study and gender can enlighten the teachers and the textbook writers to reconsider the design of textbooks and teaching materials to make it more appropriate for both types of students.

In addition, another focus is on exploring the reading strategies that are employed in the textbook and comparing these with the students' to find out which students the textbook is suitable for. The study is also designed to reveal whether there is a significant difference between the use of reading strategies by science and social science students and their achievement in reading comprehension. Finally, the study focuses on the effect of gender on students' reading strategies.

In general, the aims of the study are to find out:

1. what types of strategies science and social science students use
2. whether there is a correlation between the reading strategies of the students and the strategies utilized in the textbook
3. which students the reading strategies in the textbook appeal to.

4. whether there is an effect of gender on reading strategy use
5. whether there is a difference between the use of reading strategies by the students and their achievement in reading comprehension

Significance of the Study

This research can help students aware of what their reading behaviors are and which reading strategies they use the most or the least frequently when they read English materials. Students can try to think about whether they can make some changes in their reading behaviors or whether they can enhance their use of reading strategies. Secondly, the study can provide information for students about the strategies that other students employ when they read English materials. Through that transfer of information, students can learn appropriate reading strategies that they can employ to help them get the main point from the reading texts. Thirdly, the study provides some information for the teachers to understand their students' reading behaviors and reading strategies. When teachers understand students' reading processes, they can try to adjust their teaching skills to help students read more easily. The fourth significance of the study is that, teachers can get some information about differences in the use of reading strategies in different fields of study and gender. According to students' reading situations, teachers and authors can arrange the appropriate teaching materials and textbooks for the students. Finally, the study can be used as a reference for further research to help future researchers know what recent students' reading strategies are and let the researchers focus on the students' weaknesses to provide more useful suggestions and teaching strategies for helping those students who had reading difficulties in English.

Through this study, the researcher has expected that the EFL students and further researchers can get some useful information to understand which reading strategies students in science social science departments in prep classes should use, which textbook is appropriate for them, how to improve their achievement in reading and to provide some good suggestions for further studies in the field of reading.

Statement of the Problem

The most important feature of the nature of the reading process in both 1st and 2nd languages is its high degree of individuality. Readers are characterized by their own reading assets and their drawbacks. Reader's subject content or background knowledge is an important tool for comprehension to take place. Besides, reading processes from the first languages do appear to transfer to the foreign language. Sarig (1987) and Cheng's (1998) study showed that the use of strategies differ in fields of study. Background knowledge has an importance in reading comprehension. The background experiences students bring to their reading affect how well they can understand it (Stahl, Jacobson, Davis & Davis; 1989). These statements demonstrate that science and social science students, as they have different subject content and background knowledge, will have different reading strategies some of which may be transferred from their first language. These differences should be considered while preparing a textbook. The book should include both types of strategies which appeal to both departments' students.

There is little research specifically aimed at investigating if and how second language reading strategy use at the university level differs according to gender. Brantmeier (2000) suggested that passage content is related to reading success; males do better on more science-oriented passages, while females achieve higher reading scores on humanities-related topics. Phakiti's (2003) and Poole's (2005) study supported this finding about gender difference.

Research has demonstrated that reading proficiency is affected by the use of reading strategies. More successful readers use more strategies (Lee, 2006). The strategies in the textbook should meet the needs of both students (Seliger, 1982). Otherwise, the students may not be successful. So, in this study, the students' reading strategies and those in the textbook will be compared to see which group of the students the textbook is more affective for. Our expectation is that, if the textbook

promotes science students' reading strategies the most, that group will benefit more from it.

So the researcher will find out whether the present study will support these findings about the relationship between the students' departments and the use of reading strategies by first exploring science and social science students' reading strategy preferences. The researcher will also explore the correlation between the strategies utilized in the textbook and the strategies of science and social science students and explore which department students the textbook appeal to. Finally, a reading comprehension test will be applied to the students and their strategy use and achievement in reading comprehension will be compared to see whether there is a significant difference between the use of reading strategies by the students and their achievement in reading comprehension.

From this perspective, the reading strategies in the textbook which is used in prep classes will be evaluated to find out whether it meets both science and social science students' needs. If it is not, remedial actions may be taken such as changing or adapting it to promote reading achievement and comprehension of both science and social science learners.

Research Questions

The present study is based on the hypothesis that students in science and social science departments in prep classes of School of Foreign Languages, Dokuz Eylül University use different reading strategies. Thus, the textbook by mostly appealing to one department's students may affect science and social science students' achievements differently. Another hypothesis is that, the frequent use of reading strategies by students has a positive effect on the students' achievement in reading comprehension. It is not clear that gender has an effect on strategy choice and the textbook appeals to both learners from different branches.

The research question in this study is:

1. Is there a correlation between the reading strategies of the students in science and social science departments in prep classes and the strategies applied in the textbook?

This study will also try to find answers to these questions stemming from the main research question:

1. a) Which strategies are employed by science students?
   b) Which strategies are employed by social science students?
   c) Is there a significant difference between the reading strategies of science and social science students?

2. a) Which strategies are employed by girls?
   b) Which strategies are employed by boys?
   c) Is there a significant difference between the reading strategies and gender?

3. a) Which department's students does the textbook "Reading Keys" appeal to in terms of the reading strategies promoted in it?

4. a) Is there a significant difference between the use of reading strategies by science and social science students and their achievement in reading comprehension?

Assumptions

In this research the following aspects are taken into consideration as the main assumptions.

1. The students who constitute the sample population of the research answered the questions of the given 'Reading Strategies Scale' and 'Reading Comprehension Test' honestly and sincerely.

2. The variables that can not be controlled affected all groups of students in the same way.

Limitations

This study includes the following limitations:

1. This study will be limited to science and social science students in prep classes of School of Foreign Languages, Dokuz Eylül University in 2009-2010 Academic Year. As a result, the findings of the study will be valid to the students learning English as a second language.
2. This study will be limited to approximately 400 science and social science students in prep classes of School of Foreign Languages. However, the results may be applicable to other foreign language learning environments.
3. The findings of the study are limited to the data gathered by data gathering means used in this study.

CHAPTER II: READING STRATEGIES

Strategy

There are many definitions of “strategy” highlighting different aspects. Seliger (1991:11) uses the term “strategy” to denote general, abstract operations by which the human mind acquires and organizes new knowledge. Açıkgöz (1996:7) and Anderson (2002:18) focus on the term “goal” while defining strategy. Açıkgöz defines it as the way that is followed to obtain something or the application of a plan which is developed to reach an aim whereas Anderson states that strategies are conscious actions that learners take to achieve desired goals or objectives. Grabe and Stoller (2002:5) refer strategies as the abilities that are potentially open to conscious reflection and use.

Another definition comes from Brown (1987:79) who highlights the term “problem solving” by defining that strategies are specific methods of approaching a problem or task. They are “battle plans” that might vary from moment to moment, day to day or year to year. For a process to be considered as a strategy, it needs to be observable or identifiable by the users when asked (Oxford, 1990; Schmidt, 1994). With this definition, Oxford and Schmidt emphasizes a different aspect of strategy. Strategies vary intraindividually, each of us has a whole host of possible ways to solve a particular problem and we choose one or several of those in sequence for a given problem.

Learning Strategy

There are several different definitions of learning strategies made by several researchers. While Brown (1987:83) defines learning strategies as a particular method of approaching a problem or task, a mode of operation for achieving a particular end, a planned design for controlling and manipulating certain information, O’Malley and Chamot (1990:1) state that learning strategies are special ways of

processing information that enhance comprehension, learning or retention of the information.

Like Brown, Woolfolk (1998:307) defines learning strategies as a kind of plan which is used to manage learning aims. Still another dimension is made by Somuncuoğlu and Yıldırım (1999:32) who state that learning strategies are the necessary tactics and tools to manage independent learning.

Weinstein and MacDonald (1986:257) define learning strategies as the situations and thoughts which the learners use while learning and which aim to affect the learner's coding process. A similar definition comes from Davidson (1987) who focuses on the retention of the knowledge. Davidson holds that learning strategies are the methods which are used to facilitate the recalling of the knowledge which is produced and tried to be learned by the learner.

Finally, a detailed definition is made by Oxford (1990:1). She states that learning strategies are special ways used by learners to aid learning and make it more efficient. The way learners approach a task and perform it and the outcome received are affected by the strategies chosen by them and by how effectively learners apply them. Strategies are especially important for learning because they are tools for active, self-directed involvement, which is essential for developing communicative competence. Appropriate language learning strategies result in improved proficiency and greater self-confidence (Oxford, 1990:1).

Learning strategies developed by learners show individual differences. These differences come from mental, physical and psychological levels of individuals. For instance, students from different fields of study and with different brain dominances use different strategies. Learning strategies facilitate learning and all the learners, to some extent, have some learning strategies. If the learning strategies of the learners in all skills are not explored or are ignored; then there will be a failure in their achievement (Ertekin, 2006).

The learners use some learning strategies in their lessons to enhance their learning or to recall what they have already learned yet if the textbook does not include these strategies and if the teachers do not take these differences into account; then all the efforts for learning will be useless.

In language learning, strategies are used to facilitate learning in all four skills; listening, speaking, writing and reading. In recent years, reading has been considered to be a critical skill, especially in academic oriented classes for which students have to do extensive reading to pursue their studies successfully. The major interest in reading comprehension has become reading strategies as it has been concluded that successful readers differ from the less successful ones mainly in their strategic approach towards the text they are reading. Therefore, helping readers employ effective strategies is considered to be an essential component of reading classes. This study will analyze the reading strategies used in the textbook “Reading Keys” to find out which department’s students the book appeals to.

Since the English-medium universities benefit from academic materials written in English, English reading proficiency becomes an extremely important requirement for the students. In many parts of the world reading in a foreign language is often important for academic studies, professional success and personal development. Especially reading in English is essential as most of the academic and scientific texts are published in English today. In addition, many subjects in science and social science departments require students to have the ability to read in English. Yet, it is the common experience that most students fail to read adequately in the foreign language and read with less understanding than one might expect them to have (Alderson, 1984). This may be due to inadequate use of reading strategies, lack of correspondence between brain dominances and the strategies required for a text to be understood in the textbook.

Everyone reads with some kind of purpose in mind- for pleasure or to obtain information, etc. – and effective reading means being able to read accurately and efficiently, to understand as much of the passage as you need in order to achieve your purpose. In addition, it contributes to independent learning regardless of the

purpose of the reader (Murcia, 2001). Sometimes comprehension failure happens and the readers are unable to achieve their purpose (Özturgut, 2001). This failure may be a simple matter of not knowing the meaning of a word; but it is just as likely to be a deficiency in one or more of a number of specific reading strategies and the strategies required for a text to be mastered, and finally lack of harmony between the strategies of the students and the strategies employed in the textbook. The students are expected to understand what they read regardless of the subject matter they study. Understanding reading strategies necessitates an understanding of the nature of the reading process.

Reading

There has been much discussion about the process of reading, its nature and the skills required for effective reading to be achieved. A significant body of literature (Robinson, 1980; Carroll, 1980; Nuttal, 1982; Carrell, 1989; Grabe, 1988) posits that reading is not a passive process, but an active process of communication whereby the reader approaches the text for specific purposes. The readers' involvement in the text is of crucial significance as he/she should not accept passively what is written, but he/she should develop, modify and even reflect on all or some of the ideas displayed in the text.

Widdowson's (cited in Alderson & Urquhart, 1984:25) definition of reading as "the process of getting linguistic information via print" is an attractive one, and a useful corrective to more restricted approaches. Pressley (2002) defines reading as more than simply decoding. Comprehension requires lower order (decoding) and higher order (metacognitive) thinking. To perform higher order thinking, readers must interact with the text

Bernhardt (1991:6) who has a deeper description states that reading process is an intrapersonal problem-solving task that takes place within the brain's knowledge structures. Casanave (1988), like other researchers, emphasizes "meaning" and defines reading as a process with which readers actively use some strategies to work with the meaning of the text and then make sense from them.

According to Brumfit, reading is an extremely complex activity involving a combination of perceptual, linguistic and cognitive abilities. Because reading is a complex process, reading in any language is demanding (Czicko, Faureau, McLaughlin, Oller & Tullius as cited in Kern, 1989). Reading in a second or foreign language can place even greater demands on the processes involved in reading due to the reader's incomplete linguistic or cultural knowledge (Bouvet, 2000). Therefore, reading skills and strategies are of significant importance in such environments.

In the early 1970s, information processing theories in psychology were applied to reading, resulting in the development of two major reading theories; the skills view (bottom-up theory), and the psycholinguistic view (top-down theory). By the late 1970s, criticism of these two theories by both educators and psychologists resulted in the development of interactive theories of the reading process. From this perspective, reading involved an interaction between the reader and the text, the processing was viewed as proceeding from both whole to part and part to whole (Campbell & Malicky, 2002).

Alexander (2000) states that interaction, in the form of previous knowledge activation and subject interest positively influences comprehension. The utilization of reading comprehension strategies compels students to interact with the text, and this interaction subsequently increases interest.

Being an important language skill, reading and the processes involved in reading have been commonly explored research areas in both L1 and L2 contexts. From this research have emerged three basic models of reading.

Bottom-Up Reading Model:

The first and the oldest of the three models which will be described is the bottom-up reading model. Goodman (cited in Eskey, in Dubin, Eskey & Grabe, 1986) refers to this model as the "common sense notion" (p:11). In this approach, reading is

meant to be a process of decoding; identifying letters, words, phrases, and then sentences in order to comprehend the meaning. According to Eskey (in Dubin, Eskey & Grabe, 1986) in this model, the readers read by moving their eyes from left to right across the page and they first identify the letters, then combine the letters to form words, then gradually combine the words into phrases, clauses and sentences. In other words, bottom-up reading model sees the process of reading as decoding the author's intended meaning through recognition of the printed letters and words (Carrell, 1989). It is a process wherein the reader reconstructs the message in a text by first recognizing the smallest textual components at the bottom such as letters or words. Then the reader moves to larger and larger parts of the text at the top such as phrases, clauses, sentences, intersential linkages in order to comprehend the written work (Carrell, Devine & Eskey, 1988).

Such a view, however, raises as many questions as it answers. The bottom-up model suggests that a word will be recognized after the reader assembles it by combining its letters. Nevertheless, a reader can read a word without understanding its meaning. Moreover, if the reader decodes each letter separately to form words, phrases and sentences, this may make reading too slow to comprehend the information presented in the text (Nunan, 1991). Another objection to the bottom-up theory of reading relies on the research showing that "in order to assign a phonemic value to a grapheme, it is often necessary to know the meaning of the word containing that grapheme" (Smith, cited in Nunan, 1991:65). What is more, research done by Goodman and Burke (cited in Nunan, 1991) proves that decoding is not enough to explain the reading process. A process known as miscue analysis shows that deviations from the actual words of the text made by the readers during reading aloud are proved to be acceptable in terms of semantics. This would seem to suggest that although readers do not decode the letters to form words in some instances, they are able to make sense of the text. Bottom-up reading strategies involve identifying grammatical category of words, recognizing meaning through word families and formation, and paying attention to reference words (Barnett, 1988).

Top-Down Reading Model:

The shortcomings of the bottom-up model generated the emergence of the top-down model of reading This model advocates “the selection of the fewest and most productive elements from a text in order to make sense of it” (Lynch & Hudson, in Celce-Murcia, 1991:23). Top-down processing rejects the notion that identification of letters to form words, and the deviation of meaning from these words is efficient reading. On the contrary, it assumes that efficient reading requires the readers to make predictions and hypotheses about the text content by relating the new information to their prior knowledge and by using as few language clues as possible. Similarly, Goodman (1970) describes reading as a psycholinguistic guessing game in which the reader deconstructs a message which has been encoded by a writer as a graphic display. In this process, the reader’s past experiences and knowledge of the language plays a critical role in the confirmation of these predictions by the reader (Carrell, 1989). The reader is an active participant in this process, bringing hypotheses about the text, making predictions and using the information in the text to confirm or disconfirm these predictions (Carrell et al., 1988; Urquhart & Weir, 1998).

The top-down model is influenced by schema theory, which emphasizes the importance of the reader’s background knowledge in the reading process (Carrell in Carrell, Devine & Eskey, 1988). According to this theory, in order to comprehend a text, readers make use of both the text and their background knowledge. Therefore, interaction with the background knowledge and the text is essential for efficient reading. Carrell (in Carrell, Devine & Eskey, 1988) states that “the process of interpretation is guided by the principle that every input is mapped against some existing schema and that all aspects of that schema must be compatible with the input information” (p.76). This prevents the readers from decoding every single symbol and word while reading a text. Top-down reading strategies include using background knowledge, predicting, using titles and illustrations to help comprehension, skimming and scanning (Barnett, 1988).

Interactive Reading Model:

The fact that both of the reading models which are described above have certain flaws has led to the emergence of the interactive model. This model in contrast to the top-down model, assumes a constant interaction between higher level and lower level skills in processing information for the reconstruction of the meaning of the text rather than overemphasizing the role of top-down processing skills in reading. In other words, according to interactive model, reading involves the interaction of the top-down and bottom-up processing of the text. There are two types of interaction according to this model: the interaction between the reader and the text, and the interaction of the bottom-up and top-down processing skills. The former emphasizes the importance of the readers' world knowledge because it implies that the readers assign meaning to the written material by using their background knowledge. The latter implies that both the identification skills presented in the bottom-up model and the interpretive skills of the top-down model are seen as critical for the reading process and thus, should both be used to understand the text better (Cohen, 1990). It also includes an interaction between the reader who uses his/her prior knowledge and the text. The readers' affective state, language competence and prior knowledge of content and of reading processes interact with text structure, tasks and contexts (Goodman, Watson & Burke, 1996). Good readers are considered as both good decoders and good interpreters of the text (Carrell & Eisterhold, 1983).

Examples of bottom-up, local, language based reading strategies that focus primarily on word meaning, sentence syntax, or text details, and are associated with attending to lower-level cues are:

• breaking lexical items into smaller parts;
• scanning for specific details;
• paraphrasing or rewording the original text;
• matching key words to key visuals;
• matching key vocabulary or phrases;
• using knowledge of syntactic structures or punctuation; and

• using local context cues to interpret a word or phrase.

Some top-down, global, knowledge-based reading strategies that focus primarily on text gist, background knowledge, or discourse organization, and are associated with attending to higher-level cues include:

• recognizing the main idea, theme, or concept;
• integrating scattered information;
• drawing an inference;
• predicting what may happen in a related scenario; and
• recognizing text structure.

Comprehension as the goal of reading requires mental engagement with the process of reading. To successfully read, readers must utilize both cognitive and metacognitive processes by switching back and forth between what is known and what is presented in the text while simultaneously comparing the new information and what is read with their world view (Yore, Bisanz & Hand, 2003).

Successful readers do not read mechanically but utilize top-down processing strategies. (Block, 1986) They interact with the text, calling upon their knowledge and experience to interpret the new information. They use strategies more frequently than less successful readers do. In addition, they coordinate and shift those strategies when appropriate. Successful readers are more aware of the strategies that they use. They can also distinguish between important information and details as they read (Duffy, 1993; Farrell, 2001).

In contrast, less successful readers either do not know about strategies or mainly engage in bottom-up strategies (Salatacı & Akyel, 2002). They usually process texts in word-for-word reading (Auerbach & Paxton, 1997). Moreover, less successful readers use fewer strategies and use them less effectively in their reading comprehension (Grabe, 1991).

To sum up, good readers read for meaning, they do not waste time decoding each letter or each word in the text. Instead, they take in whole chunks of the text, relying on their knowledge of the language and of the subject matter to make predictions as to what is likely to follow and to interpret what is meant. As the learners read and their predictions get confirmed, the text makes sense to them. If their knowledge of the language is adequate, if their reading strategies are effective and if they can relate information in the text to what they already know, they have an ideal reading situation.

This study is based upon the interactive theory, wherein reading is viewed as the active construction of meaning from cues in the text and from the reader's background knowledge.

Reading Strategies

Although reading strategies have been defined by several researchers, a common definition is not found in literature because of a lack of consensus among researchers. However, they are usually referred to as techniques used by readers to comprehend texts better (Duffy, 2001). Another definition again focuses on "comprehension". Reading strategies are tactics used by readers when engaging and comprehending texts (Paris, Wasik & Turner, 1991). Reading strategies, as noted by Garner (1987), may be defined as an action or series of actions employed in order to construct meaning. Pearson and his colleagues (1992) define reading strategies as "conscious and flexible plans that readers apply and adapt to a variety of texts and tasks". A similar definition which highlights the term "text" comes from Wei (2006) who states that reading strategies are any processes that the readers are conscious of executing with the intention of constructing meaning from written texts.

Definitions of reading strategies all focus on their role in the comprehension of what one reads. For instance, Barnett (1988:150) refers reading strategies as "the mental operations involved when readers approach a text efficiently and make sense of what they read". In the light of these definitions and arguments, the term 'reading

strategy' is referred for the purposes of this research as specific actions consciously employed by the learner for the purpose of reading. Going beyond this definition, researchers have determined different types of reading strategies that successful readers use such as top-down vs. bottom-up, local vs. global, direct vs. indirect, word-level vs. text-level, metacognitive vs. cognitive, etc. which will be mentioned in the next section.

Classification of Reading Strategies

The investigations of second language learners' reading comprehension strategies have produced a wide variety of strategy inventories and classification schemes. Nonetheless, one characteristic that is shared by many of the classification schemes proposed in the L2 literature is that the reading strategies are commonly divided into binary categories. The binary categories are all similar in that they reflect strategies that aid in the comprehension of smaller linguistic units versus those that aid in the comprehension of larger linguistic units. Some of the binary strategy classifications include bottom-up vs. top-down, local vs. global, data driven vs. concept-driven, form-based vs. meaning-based, syntactic vs. semantic, decoding vs. meaning-getting, language-based vs. knowledge-based, word-level vs. text-level, micro vs. macro, analytic vs. synthetic, and analytic and vs. global. Although the terms that are used to refer to either the bottom-up or top-down processes have subtle differences, L2 researchers use these terms together and interchangeably. Thus, it is not uncommon to find statements in the literature such as "novice learners rely primarily on concept-driven (top-down, global) processes when reading texts" (Young & Oxford, 1997:47).

Above are reading strategy types according to the chronological order:

O'Malley, Chamot, Manzanares, Russo and Kupper (1985:561) identified two types of reading strategies. These are:

1) Metacognitive Reading Strategies:

Metacognitive control means readers' conscious control of their reasoning processes (Carrell et al., 1989). Use of metacognitive strategies leads readers to think about their thinking. Use of metacognitive strategies helps much to comprehending the meaning of a text. (Allen, 2003:322). Metacognitive strategies are:

a) setting goals for yourself
b) working with classmates
c) taking opportunities for practicing
d) evaluating what you have learned
e) making lists of vocabulary

2) Cognitive Reading Strategies:

Cognitive reading strategies involve direct manipulation or transformation of the learning materials throughout a learning or problem-solving process (Block, 1986). They have a direct operation on the target language (Allen, 2003). Cognitive strategies can be listed as follows:

a) using the titles to predict the text content
b) relating pictures or illustrations to the text content
c) skimming
d) taking notes
e) translating
f) using a dictionary
g) using background knowledge
h) summarizing
i) rereading
j) visualization
k) understanding organization
l) classifying words
m) guessing the meanings of unknown words

According to Sarig's (1987) comparative study of L1 and L2, there are four types of reading strategies:

1) technical aid such as skimming, scanning, using glossary
2) clarification and simplification such as decoding meanings of words, paraphrasing, syntactic simplification
3) coherence detection such as identification of text type and use of prior content schemata
4) monitoring moves such as mistake correction, slowing down, summarizing, comparing main ideas and identification of misunderstanding

Barnett (1988) categorizes strategies into two:

1) Text-level strategies; such as skimming for having a general understanding, scanning for details, predicting the content, using the background knowledge and titles for or pictures for comprehension.
2) Word-level strategies; such as identification of the grammatical category of words, recognition of words through word families and word formation and guessing meanings from context.

According to Pritchard (1990) there are five types of reading strategies. These are:

1) developing awareness
2) accepting ambiguity
3) establishing intrasential ties (gathering information, paraphrasing, etc.)
4) establishing intersentential ties (reading ahead, extrapolating, etc.)
5) using background knowledge

El-Koumy (2004) mentions that reading strategies can be divided into cognitive and metacognitive styles. Cognitive strategies mean readers have integration with contents using strategies to help them understand the contents. Cognitive strategies

include visualizing, predicting, scanning, summarizing, analyzing, making correction, underlining and using mnemonics, etc. Metacognitive strategies -often referred to as self-regulation strategies- refers to the reader's knowledge about the executive processes he or she employs before, during and after reading (p:16). There were three main strategies in this area: planning, self-monitoring and self-assessment.

Abbott (2007) divides reading strategies into top down and bottom up. Examples of bottom-up, local, language based reading strategies that focus primarily on word meaning, sentence syntax, or text details, and are associated with attending to lower-level cues are:

1) breaking lexical items into smaller parts;
2) scanning for specific details;
3) paraphrasing or rewording the original text;
4) matching key words to key visuals;
5) matching key vocabulary or phrases;
6) using knowledge of syntactic structures or punctuation; and
7) using local context cues to interpret a word or phrase.

Some top-down, global, knowledge-based reading strategies that focus primarily on text gist, background knowledge, or discourse organization, and are associated with attending to higher-level cues include:

1) recognizing the main idea, theme, or concept;
2) integrating scattered information;
3) drawing an inference;
4) predicting what may happen in a related scenario; and
5) recognizing text structure.

Rebecca Oxford (1990) makes a classification of reading strategies. In this study her classification will be used as it is the most detailed of all. In addition, her reading

strategies are more frequently employed in textbooks, they are clear cut and finally her classification includes all possible reading strategy types that are used by learners such as memory, cognitive, compensation, metacognitive, social and affective. According to Oxford, there are two types of reading strategies. These are direct and indirect strategies.

I. Direct Strategies For Dealing With Language:

Language learning strategies that directly involve the target language are called direct strategies. All direct strategies require mental processing of the language. There are three types of direct strategies. These are:

1. Memory Strategies; have a highly specific function: helping students store and retrieve new information.
2. Cognitive Strategies; enable learners to understand and produce new language by many different means.
3. Compensation Strategies; allow learners to use the language despite their often large gaps in knowledge.

1. Memory Strategies:

Memory strategies help language learners to cope with vocabulary difficulty. They enable learners to store verbal material and then retrieve it when needed for communication. Memory strategies often involve pairing different types of material. In language learning, it is possible to give verbal labels to pictures, or to create visual images of words or phrases.

There are four types of memory strategies:

1. Creating Mental Linkages:

A. Grouping:

Grouping is classifying or reclassifying language material into meaningful units, either mentally or in writing, to make the material easier to remember by reducing

the number of discrete elements. Groups can be based on type of word, topic, practical function, linguistic function, similarity and so on. The power of this strategy may be enhanced by labeling the groups, using acronyms to remember the groups, or using different colors to represent different groups.

B. Associating/ Elaborating:

Associating is relating new language information to concepts already in memory, or relating one piece of information to another, to create associations in memory. These associations can be simple or complex, mundane or strange, but they must be meaningful to the learner.

C. Placing New Words into a Context:

Placing new words into a context indicates placing a word or phrase in a meaningful sentence, conversation or story in order to remember it. This strategy involves a form of associating/ elaborating, in which the new information is linked with a context.

2. Applying Images and Sounds:

Applying images and sounds involve remembering by means of visual images or sounds.

A. Using Imagery:

Using imagery is relating the new language information to concepts in memory by means of meaningful visual imagery, either in the mind or in actual drawing. This strategy can be used to remember abstract words by associating such words with a visual symbol or a picture of a concrete object.

B. Semantic Mapping:

Semantic mapping refers to making an arrangement of words into a picture, which has a key concept at the center or at the top, and related words and concepts linked with the key concept by means of lines or arrows. It visually shows how certain groups of words relate to each other.

C. Using Keywords:

Using keywords is remembering a new word by using auditory and visual links. The first step is to identify a familiar word in one's own language that sounds like the new word- this is the "auditory link". The second step is to generate an image of some relationship between the new word and a familiar one- this is the "visual link." Both links must be meaningful to the learner.

D. Representing Sounds in Memory:

Representing sounds in memory represents remembering new language information according to its sound. This is a broad strategy that can use any number of techniques, all of which create a meaningful, sound-based association between the new material and already known material.

3. Reviewing Well:

Reviewing well implies that looking at new target language information once is not enough; it must be reviewed in order to be remembered.

A. Structure Reviewing:

Structure reviewing is reviewing in carefully spaced intervals, at first close together and then more widely spaced apart. The goal is "overlearning"- that is, being so familiar with the information that it becomes natural and automatic.

4. Employing Action:

Employing action strategies will appeal to learners who enjoy the kinesthetic or tactile modes of learning.

A. Using Physical Response or Sensation:

Using physical response or sensation means physically acting out a new expression or meaningfully relating a new expression to a physical feeling or sensation.

B. Using Mechanical Techniques:

Using mechanical techniques is identified as using creative but tangible techniques, especially involving moving or changing something which is concrete, in order to remember new target language information.

2. Cognitive Strategies

Cognitive strategies are unifies by a common function: manipulation or transformation of the target language by the learner. Cognitive strategies are typically found to be the most popular strategies are typically found to be the most popular strategies with language learners.

There are four types of cognitive strategies. These are:

1. Practicing:

A. Repeating:

Repeating refers to saying or doing something over and over; listening to something several times; rehearsing; or imitating a native speaker.

B. Recognizing and Using Formulas and Patterns:

Recognizing and using formulas and patterns indicate being aware of and/or using routine formulas such as “Hello, how are you?” and unanalyzed patterns such as “It is time to…”

C. Practicing Naturalistically:

This strategy is described as practicing the new language in natural, realistic settings; as in participating in a conversation, reading a book or article.

2. Receiving and Sending Messages:

A. Getting the Idea Quickly:

Getting the idea quickly involves using skimming to determine the main ideas or scanning to find specific details of interest. This strategy helps learners to understand rapidly what they hear or read in the new language. Preview questions often assist.

B. Using Resources for Receiving and Sending Messages:

This strategy is identified as using print or nonprint resources to understand incoming messages or produce outgoing messages.

3. Analyzing and Reasoning:

This set of five strategies concerns logical analysis and reasoning as applied to various target language skills. Often learners can use these strategies to understand the meaning of a new expression or to create a new expression.

A. Reasoning Deductively:

Reasoning deductively is using general rules and applying them to new target language situations. This is a top-down strategy leading from general to specific.

B. Analyzing Expressions:

Analyzing expressions is determining the meaning of a new expression by breaking it down into parts; using the meanings of various parts to understand the meaning of the whole expression.

C. Analyzing Contrastively:

Analyzing contrastively means comparing elements of the new language with elements of one's own language to determine similarities and differences.

D. Translating:

Translating is converting a target language expression into the native language; or converting the native language into the target language; using one language as the basis for understanding or producing another.

E. Transferring:

Transferring is directly applying knowledge of words, concepts, or structures from one language to another in order to understand or produce an expression in the new language.

4. Creating Structure for Input and Output:

The following three strategies are ways to create structure, which is necessary for both comprehension and production in the new language.

A. Taking Notes:

Taking notes connotes writing down the main idea or specific points. This strategy can involve drafting notes, or it can comprise a more systematic form of note-taking such as the shopping-list format, the semantic map or the standard outline form.

B. Summarizing:

Summarizing is making a summary or abstract of a longer passage.

C. Highlighting:

Highlighting is using a variety of emphasis techniques such as underlining to focus on important information in a passage.

3. Compensation Strategies

These strategies enable learners to use the new language for either compensation or production despite limitations in knowledge. Compensation strategies are intended to make up for an inadequate repertoire of grammar and, especially, of vocabulary.

Guessing strategies, sometimes called “inferencing”, stand for using a wide variety of clues -linguistic and non-linguistic- to guess the meaning when the learner does not know all the words.

Guessing is actually just a special case of the way people typically process new information- that is, interpreting the data by using the immediate context and their own life experience. Compensation strategies for production help learners to keep on using the language, thus obtaining more practice.

Guessing Intelligently In Listening and Reading:

A. Using Linguistic Clues:

Using linguistic clues refers to seeking and using the language-based clues in order to guess the meaning of what is heard or read in the target language, in the absence of complete knowledge of vocabulary, grammar or, or other target language elements.

B. Using Other Clues:

Using other clues includes seeking and using clues which are not language-based in order to guess the meaning of what is heard or read in the target language, in the absence of complete knowledge of vocabulary, grammar, or other target language elements.

II. Indirect Strategies for General Management of Learning:

Indirect strategies are essential counterpart to direct strategies. They support and manage language learning without directly involving the target language. Indirect strategies are useful in virtually all language learning situations and are applicable to all four language skills; listening, reading, speaking, and writing.

There are three types of indirect strategies. These are:

1. Metacognitive Strategies:

Metacognitive strategies are actions which go beyond purely cognitive devices, and which provide a way for learners to coordinate their own learning process. Language learners are often overwhelmed by too much newness. With all this novelty, many learners lose their focus, which can only be regained by the conscious use of metacognitive strategies such as paying attention and overviewing/linking with already familiar material.

Other metacognitive strategies, like organizing, setting goals and objectives, considering the purpose, and planning for a language task, help learners to arrange and plan their language learning in an efficient, effective way.

1. Centering Your Learning:

A. Overviewing and Linking with Already Known Material:

This strategy involves overviewing comprehensively a key concept, principle or set of materials in an upcoming language activity and associating it with what is already known.

B. Paying Attention:

Paying attention is deciding in advance to pay attention in general to a language learning task and to ignore distractors.

2. Arranging and Planning Your Learning:

These strategies help learners to organize and plan so as to get the most out of language learning.

A. Finding Out About Language Learning:

This strategy signifies making efforts to find out how language learning works by reading books and talking with other people.

B. Organizing:

Organizing is understanding and using conditions related to optimal learning of the new language; organizing ones schedule, physical environment, etc.

C. Setting Goals and Objectives:

This strategy implies setting aims for language learning, including long term goals or short term objectives.

D. Identifying the Purpose of a Language Task:

This strategy stands for deciding the purpose of a particular language task involving listening, reading, speaking and writing.

E. Planning for a Language Task:

Planning for a language task is planning for the language elements and functions necessary for an anticipated language task or situation.

F. Seeking Practice Opportunities:

This strategy is identified as seeking out practicing opportunities to practice the new language in naturalistic situations, such as going to a second or foreign language cinema, joining an international social club.

3. Evaluating Your Learning:

These strategies aid learners in checking their language performance.

A. Self-Monitoring:

Self-monitoring is identifying errors in understanding or producing the new language, determining which ones are important, tracking the source of important errors, and trying to eliminate such errors.

B. Self-Evaluating:

Self-evaluating is evaluating one’s own progress in the new language whether one is understanding a greater percentage of each conversation.

2. Affective Strategies:

The term affective refers to emotions, attitudes, motivations, and values. The affective side of the learner is probably one of the very biggest influences on language learning success or failure. Good language learners are of then those who know how to control their emotions and attitudes about learning. Negative feelings can stunt progress; on the other hand, positive emotions and attitudes can make language learning far more effective and enjoyable. Attitudes are strong predictors of motivation in any area of life, and especially in language learning. Attitudes and motivation work together.

The language learner who is overtly anxious is likely to be inhibited and unwilling to take even moderate risks. Successful language learning necessitates overcoming inhibitions and learning to take reasonable risks.

Tolerance of ambiguity may be related to willingness to take risks. Moderate tolerance for ambiguity tends to be open-minded in dealing with confusing facts and events, which are parts of learning a new language.

1. Lowering Your Anxiety:

A. Using Progressive Relaxation, Deep Breathing, or Meditation:

These strategies involve using the technique of alternately tensing and relaxing all of the major muscle groups in the body, as well as the muscles in the neck and the face, in order to relax; or the technique of breathing deeply from the diaphragm.

B. Using Music:

This strategy refers to listening to soothing music, such as classical concert, as a way to relax.

C. Using Laughter:

This strategy includes using laughter to relax by watching a funny movie, reading a humorous book, so on.

2. Encouraging Yourself:

This set of strategies is often forgotten by language learners, especially those who expect encouragement mainly from other people and do not realize they can provide on their own.

A. Making Positive Statements:

This strategy connotes saying or writing positive statements to oneself in order to feel more confident in learning the new language.

B. Taking Risks Wisely:

Taking risks wisely is pushing oneself to take risks in a language learning situation, even though there is a chance of making a mistake or looking foolish.

C. Rewarding yourself:

This strategy is giving oneself a valuable reward for a particularly good performance in the new language.

3. Taking Your Emotional Temperature:

These strategies help learners to assess their feelings, motivations and attitudes and in many cases relate them to language tasks.

A. Listening to Your Body:

Listening to your body signifies paying attention to signals given by the body. These signals may be negative, reflecting stress or they may be positive indicating happiness.

B. Using a Checklist:

This strategy means using a checklist to discover feelings, attitudes and motivations concerning language learning in general.

C. Writing a Language Learning Diary:

This strategy implies writing a diary or journal to keep track of events and feelings in the process of learning a new language.

D. Discussing Your Feelings with Someone Else:

This strategy is talking with another person to discover and express feelings about language learning.

3. Social Strategies:

Language is a form of social behavior, it is communication, and communication occurs between and among people. Learning a language thus involves other people, appropriate social strategies are very important in this process.

One of the most basic social interactions is asking questions and this helps learners get closer to the intended meaning and thus aids their understanding.

To promote cooperative language learning strategies it might be necessary to help learners confront and possibly modify their culturally defined attitudes toward cooperation and competition.

1. Asking Questions:

A. Asking for Clarification or Verification:

This strategy connotes asking the speaker to repeat, paraphrase, explain, slow down, or give some examples; asking if a specific utterance is correct or if a rule fits its particular case.

2. Cooperating With Others:

This set of two strategies refers to interacting with one or more people to improve language skills.

A. Cooperating with Peers:

Cooperating with peers indicates working with other language learners to improve language skills. This strategy frequently involves controlling impulses toward competitiveness and rivalry.

B. Cooperating with Proficient Users of the New Language:

This strategy stands for working with native speakers or other proficient users of the new language, usually outside of the language classroom.

3. Empathizing With Others:

A. Developing Cultural Understanding:

This strategy signifies trying to empathize with another person through learning about the culture and trying to understand the other person’s relation to that culture.

B. Becoming Aware of Others’ Thoughts and Feelings:

This strategy implies observing the behaviors of others as a possible expression of their thoughts and feelings; and when appropriate, asking about thoughts and feelings of others.

CHAPTER III: LITERATURE REVIEW

This chapter describes a review of selected literature and issues relevant to the use of reading strategies by students in science and social science departments in prep classes. The relevant issues include the effect of gender and the students' departments on their use of reading strategies and the correlation between the students' reading strategies and those used in the textbook. The contents include seven areas: (1) Research about reading strategies in general, (2) Reading strategies and achievement, (3) Reading strategy research at university level, (4) Research on the reading strategies of freshmen, (5) Reading strategies and gender, (6) Reading strategies and the textbook, (7) Reading strategies of science and social science students.

Research about Reading Strategies in General

In this section, the research related to the general term of reading strategies will be mentioned before covering the other specific aspects. There are many empirical studies which focus on reading strategies and their relationship with successful and unsuccessful second language reading (Carrell, Pharis and Liberto, 1989). Carrell and her colleagues highlight the fact that less successful learners can improve their skills by getting training in strategies which are used by more competent learners. Successful learners are aware of the strategies they use and know why they use these strategies (Green and Oxford, 1995). These learners are able to adjust their strategies according to language tasks and to their needs as learners. Less successful learners, on the other hand, may not be able to choose the appropriate strategies or decide on how to connect them to have a useful "strategy chain" although they are able to identify their own strategies (Block, 1986). Overall improvement in reading comprehension is dependent on the improvement of strategies and explicit training of strategies has often produced gains in comprehension (Nagy and Herman, 1987).

Sarig (1987) investigates the contribution of L1 reading strategies and L2 language proficiency to L2 reading, as well as the relationship between L1 and L2

reading strategies. Sarig's subjects are 10 female native Hebrew readers who are studying English as a foreign language. Subjects read academic texts in L1 and L2 and are asked to self report their reading behaviors. Sarig classifies the data from the think-aloud reports into four general types of behaviors or responses: (1) technical aid, (2) clarification and simplification, (3) coherence detection, and (4) monitoring moves. Technical aid strategies include behaviors such as skimming, scanning, skipping, marking the text, using glossary, and so forth.

Strategies that involve syntactic simplification, decoding meanings of words and groups of words with the use of synonyms, and paraphrasing are classified as clarification and simplification moves. Coherence-detecting moves include identification of the text type, use of prior content schemata, identification of people and key information in the text, and reliance on textual schemata. Behaviors involving active monitoring of text processing are classified as monitoring moves, and these include behaviors such as conscious identification of misunderstanding, change of planning the tasks, mistake correction, slowing down, and other direct moves which are intended to monitor text processing.

Sarig's results reveal that her subjects transfer strategies from L1 reading into L2 reading, and that the same reading strategy types account for success and failure in both languages to almost the same extent. Top-down, global strategies lead to both successful and unsuccessful reading comprehension. The two language dependent strategies, the clarification and simplification strategies, contribute to unsuccessful reading comprehension in both L1 and L2. Results also indicate that, most of the strategies which are used during the reading comprehension process are particular to each reader, or that each individual reads differently and uses different combinations of strategies. These results do not duplicate Block's (1986) where global strategies lead to successful (not unsuccessful) reading comprehension.

In a qualitative study, Hosenfeld (1977) examines successful and unsuccessful readers to find out what types of cognitive operations they use to process written texts. Participants are ninth grade students who are learning French. Before

conducting her study, she classifies readers based on a test of L1 reading. She selects twenty native English speaking students who scored high on the MLA-Cooperative Test of Reading Proficiency, a standard test of native language reading, and twenty unsuccessful students with low scores on the same test. In an oral interview, participants are asked to read a text and do think-aloud reports, that is, are directed to say in their first language whatever comes to their mind while processing each sentence in the text.

Hosenfeld concludes that, the successful readers keep the meaning of the passage in mind while reading, skip words unimportant to the meaning of the sentence, read in "broad phrases," use context to determine word meaning, and have a positive self-concept as a reader. Poor readers, on the other hand, translate sentences and lose the general meaning of the passage, rarely skip words, look up unknown words in a glossary, and have a poor self-concept as a reader. While these results clearly describe the strategies students use to process the text, they do not link the strategy use to comprehension of specific paragraphs or to the text as a whole. The data only focuses on sentence-level comprehension. The results of the study do not reveal overall comprehension of the entire text.

Block's (1986) "general comprehension" and "local linguistic" categories echo Hosenfeld's (1977) binary classification of strategies. Block (1986) compares the reading comprehension strategies used by native English speakers and ESL students who are enrolled in a remedial reading course at the university level, and she connects these behaviors to comprehension. All of the participants are designated as non-proficient readers because they failed a college reading proficiency test before the study. Subjects read two expository passages selected from an introductory psychology textbook, and are asked to do a think-aloud while reading (they reported after each sentence). After reading and retelling each passage, the participants answer twenty multiple choice comprehension questions. They are allowed to consult the passages while answering the comprehension questions.

Block develops a coding scheme to classify strategies that consist of two types: general strategies and local strategies. General strategies include the following behaviors: anticipate content, recognize text structure, integrate information, question information, distinguish main ideas, interpret the text, use general knowledge and associations to background, comment on behavior or process, monitor comprehension, correct behavior, focus on textual meaning as a whole, and react to the text. Local strategies are: paraphrase, reread, question meaning of a clause or sentence, question meaning of a word, and solve a vocabulary problem.

Results demonstrate that language background (native speakers of Chinese, Spanish and English) do not account for the use of particular strategies. Of the 9 ESL students in the study, the readers with higher comprehension scores on the retellings and the multiple choice questions integrate new information in the text with old information, distinguish main ideas from details, refer to their background, and focus on the textual meaning as a whole, all classified as “general strategies.” On the other hand, readers with low comprehension scores rarely distinguish main ideas from details, rarely refer to their background, infrequently focus on textual meaning, and seldom integrate information. Again, the participants are all from a remedial class and have failed a reading proficiency exam. In other words, the results show that, more successful readers use their general knowledge; focus on the overall meaning of text; integrate new information with old; differentiate main ideas from supporting points. However, poor readers rarely do any of these things.

Kern (1989) in his study applies various think-aloud tasks and other measures to investigate strategy training in learning and guessing words in context among a group of university students of French. He finds that strategies for learning discourse meaning are more effective than those for word or phrase level among these students, and that strategy training is more effective with the lower-ability students than with those of medium or high ability. Strategies are also more useful when combined with other strategies. These results echo top-down and bottom-up strategies, here favoring the top-down type; the relationship of strategy use with proficiency in the language, and combination of strategies being more effective than single-strategy use.

Toriyama's (1993) research which is similar to this study investigates whether a classification scheme for learning strategies used in ESL instruction is applicable to strategies used in learning Japanese as a second language. Four metacognitive strategies are examined. These are directed attention, selective attention, self-monitoring, and self-management. Subjects are thirty students of Japanese who are enrolled in a college summer language school and performing at three proficiency levels; beginner, intermediate and advanced. They answer a questionnaire concerning their use of eight reading strategies; inferencing, keyword method, grouping, resourcing, transfer, elaboration, imagery, deduction.

Results indicate patterns in the use of metacognitive and cognitive strategies. Students predominantly report using self-management strategy and students at all levels reported using inferencing. Lower level students use imagery and elaboration more than higher level students and higher level students use keyword, transfer and deduction more than lower level students. Pre- and post tests indicate that advanced students show much smaller achievement gains per strategy use than do intermediate students. It is concluded that a strategy classification scheme based on the distinction between cognitive and metacognitive strategies may be useful in linking specific learning tasks with cognitive strategies.

In a study on the strategies which are used to comprehend and interpret L2 vivid phrasal idioms, Liontas (1999) reports that L2 readers use a variety of reading strategies to detect vivid phrasal (VP) idioms in written discourse. The strategies learners use include word and idiom recognition, lexical access and retrieval, contextual and pragmatic support, background and world knowledge, and formal schemata. These processes cannot be categorized as dichotomous constructs as the successful comprehenders use a combination of both local and global strategies. These findings suggest that if both global and local strategies are used simultaneously, the L2 learner will comprehend vivid phrasal idioms. The results echo Sarig's (1987) findings where global strategies used without local strategies do not lead to successful comprehension. An important distinction between the two

studies is that Sarig's L2 participants are ESL learners, and Liontas utilizes L2 learners of Spanish, French and German at the university level. Furthermore, Liontas assesses the comprehension of VP idioms in addition to the comprehension of the authentic passages. Nonetheless, both these studies contribute to the notion that both bottom-up and top-down strategy use lead to successful L2 comprehension.

Finally, a study by Bennett (2003), in which the Metacognitive Awareness of Reading Strategies Inventory is used, reveals that students rarely utilize comprehension strategies when reading texts, if at all. Mokhtari and Sheorey (2002) note that unskilled readers focus on decoding, do not monitor their reading, and are unaware when they do not understand. This is supported by responses Bennett (2000) receives from her students. When students encounter difficulties in reading, they occasionally reread, ask friends or teachers for help, or ignore the problem altogether. Students are also largely limited in their strategy use. DiGisi and Yore (1992) state that the use and awareness of metacognitive strategies do not improve with age or grade level. This indicates that unskilled readers with little to no instruction in using comprehension strategies are likely to remain unskilled readers.

Research on the effects of cognitive strategies on reading performance suggests that relating the title, illustrations/ pictures and background knowledge to the text, skimming, using dictionary in appropriate contents, guessing, remembering a word through situations, rereading, using the first language as a base, visualizing the events, being careful about how the text is organized, making notes and summaries of the important information, and classifying words are the strategies which help readers to improve their reading ability significantly and therefore, these strategies should not be neglected in the foreign and second language reading curriculum. As Carrell (1985) puts forward, “strategy research suggests that less competent learners are able to improve their reading skills through training in strategies” (p:648). In helping readers develop effective reading strategies, the first step should be identifying what strategies the students are already using; making them aware of their strategies and the possible strategies that they can use to develop their comprehension (Block, 1986; Oxford, 1990).

Reading Strategies and Achievement

There is a great deal of research related to the relationship between reading strategies and achievement. In this study, the research which dates back to twenty first century will be referred in order to focus on the most updated findings and conclusions.

Phakiti's (2003) study is an investigation into the relationship of test-takers' use of cognitive and metacognitive strategies to the EFL (English as a foreign language) reading test performance. The study employs both quantitative and qualitative data analyses. The 384 students who are enrolled in a fundamental English course at a Thai university take an 85-item, multiple-choice reading comprehension achievement test, which is followed by a cognitive-metacognitive questionnaire. Eight of these students (4 highly successful and 4 unsuccessful) are selected for retrospective interviews. The results suggest that (1) the use of cognitive and metacognitive strategies has a positive relationship to the reading test performance; and (2) highly successful test-takers report significantly higher metacognitive strategy use than the moderately successful ones who in turn report higher use of these strategies than the unsuccessful test-takers.

Al-Nujaidi's (2003) study aims at examining the relationship between EFL learners' reading strategies, vocabulary size, and reading comprehension. In addition to providing descriptive information about each variable in this relationship, the study examines how certain learner variables such as gender and the amount of extensive reading may impact this relationship. The participants in the study are 226 (117 females and 109 males) first-year university students enrolled in seven different higher education institutions in Saudi Arabia. Participants complete a reading strategies survey and take a vocabulary size test (Schmitt, 2000) and a reading comprehension test. Descriptive and inferential statistics are used to describe the participants' performance on the two tests and their reading strategy use, and to assess the relationship between the study's three main variables. Analysis of variance

and t-tests are also used to examine gender and proficiency differences in the participants' perceived use of reading strategies, vocabulary size, and reading comprehension.

The results show that in general, Saudi EFL first-year university students have a low reading ability and an estimated small vocabulary size (500-700 word families), which is far below the threshold level which is needed for reading unsimplified English texts. Except for a few strategies like critical reading, summarizing, using typographical aids, and noting text characteristics, the participants report using most of the reading strategies with high and moderate frequencies. They also report significantly more frequent use of problem-solving strategies. However, extensive reading is found to be an unpopular activity among EFL learners in Saudi Arabia. Significant gender differences favoring females are found in the participants' performance on the two tests and their reports of reading strategies use. A statistically significant relationship is found between the participants' vocabulary size at the 2000 word level and their performance on the reading comprehension test. Participants with larger vocabulary size and higher reading proficiency report using reading strategies more frequently than less proficient students.

In another study, Kung (2007) investigates the relationship between reading comprehension and the use of reading strategies among EFL college students in Taiwan. Through different grade level students' reading performances, the researcher knows to some extent the reading strategies of the EFL students and the strategy use of different grade students. The study focuses on three hundred and ninety-eight EFL college students coming from seven colleges located in the north, central, and south Taiwan and the research instrument is a reading strategies questionnaire.

The findings of study include the following: first, most students think reading in language learning is important, but they do not spend more time for reading activities; second, there are some significant differences between the use of strategies and different grade students; third, higher grade students have more variety in using reading strategies than lower grade students; fourth, the higher grade students tend to

use integrated strategies more than lower grade students; and fifth, most students think the strategies they use are useful for helping them understand what they read and indicate they would like to learn more strategies from teachers and other people.

According to the research findings, the researcher provides some recommendations, such as teachers should be better guiders to help students understand the importance of reading in language learning. They should not just focus on teaching listening and speaking. Rather, they should enhance the balance development in integrated reading strategies that help students read fluently any English materials.

Reading Strategy Research at University Level

In this section, research related to the reading strategy research at university level will be mentioned with several examples according to the chronological order. In a study, Barnett (1988) examines reading strategies which are used by students learning French. She is primarily concerned with the real and perceived strategy use among university level students and how it affects comprehension. She uses a “text-level” and “word-level” coding scheme. By text-level she refers to the processes that are used to read the passage as a whole, such as utilizing background knowledge, predicting, reading the title, skimming and scanning. When students use word-level strategies they use context to guess word meanings, identify grammatical categories of words, use reference words, and identify word families (this classification of “word-level” strategies is similar to local strategies, bottom-up strategies, and word-solving strategies). Barnett utilizes two different groups of students: one group is taught reading strategies and the other is not. The students answer questions on background knowledge before reading the passages. She asks both groups to read an unfamiliar passage in French, and all students write a recall in English. They complete a multiple choice comprehension questionnaire where they choose the best continuing sentence. Finally, students answer 17 questions about the types of reading strategies that they use.

Results reveal higher scores as both effective strategy use and perceived effective strategy use have increased. Barnett concludes that students who are taught strategy use do show a greater ability to read through context than do their more traditionally taught peers, and that “students who use the strategies which are considered more productive actually read through context better and understand more than those who do not use such strategies” (p. 156). Finally, Barnett concludes that there is a relationship between strategy use and reading comprehension level. The students who consider context while reading comprehend more than those who do not use this strategy. Likewise, students who perceive they use productive strategies score higher on the comprehension task than those students who do not. An important component in the research methods of this study is that some students are directly taught effective strategies. Most studies do not test the effects of instruction.

Carrell (1989) investigates metacognitive awareness of strategy use among L2 readers in both their native language and second language, and also investigates the relationship between this awareness and their comprehension. Her first group of subjects is native Spanish speakers of intermediate and high-intermediate levels studying English as a second language at a university-level institute. Her second group consists of native English speakers learning Spanish as a foreign language in first, second, and third year courses. Carrell first asks subjects to read two texts, one in L1 and one in L2. She controls for content schemata as both texts are on the general topic of “language.” The subjects then answer multiple-choice comprehension questions about the text which are followed by a strategy use questionnaire. The questionnaire examines their reading strategies, and each item asks for students to indicate their level of agreement or disagreement (strongly agree to strongly disagree) on a scale from one to five. She structures the questionnaire to include items concerning (1) confidence, (2) repair, (3) effectiveness, and (4) difficulty. Carrell correlates strategy use with comprehension and concludes that the ESL readers of more advanced proficiency levels perceive "global” or top-down strategies as more effective. With the Spanish as a L2 group she finds that at the lower proficiency levels subjects use more bottom-up or “local” strategies.

Anderson (1991) examines individual differences in strategy use on two types of reading tasks: standardized reading comprehension tests and academic texts. The subjects were 28 Spanish-speaking adult students (18 females and 10 males) which are enrolled in university-level English as a second language courses. On the first day of the study, Anderson assesses participant's reading comprehension skills with a typical standardized test. Two different forms of the Descriptive Test of Language Skills-Reading Comprehension Test (DTLS) are randomly assigned to participants; the test consists of fifteen reading passages each followed by two to four multiple-choice comprehension questions. The questions are categorized according to three types of reading skills: understanding main ideas, understanding direct statements, and drawing inferences. On a different day, participants complete the second form of the DTLS. A think-aloud protocol where participants verbalize reading strategies is administered with the second form. Subjects also read two passages from the Textbook Reading Profile (TRP), which consist of academic reading passages taken from freshmen-level texts, and they answer multiple choice comprehension questions for each passage. The strategies are categorized as the following: supervising, supporting, paraphrasing, establishing coherence, and test-taking.

The results of Anderson's qualitative and quantitative inquiries demonstrate that for both the standardized reading comprehension test and the textbook reading, participants who use more strategies tend to comprehend better. Results also indicate that there is not a statistically significant relationship between the number of particular strategies which are reported and overall comprehension scores on the reading tasks.

Cheng (1998) studies reading strategies and individual differences in a descriptive study. The purpose of this study is to describe and explain the types of reading strategies used by native speakers of Chinese from Taiwan as they read texts in English. Three research questions are addressed in this study: (1) What reading strategies are used by Chinese ESL students from Taiwan when they read an English text? (2) How have sociocultural factors, particularly educational factors, contributed to the development of their reading strategies? (3) What other factors have also

influenced the development of their reading strategies? Ten Taiwanese students enrolled at the University of Kansas participate in this study. The data are collected through questionnaires, think-aloud procedures, and interviews.

The major findings of the study are: (1) Although the participants share the same language and cultural background, they exhibit different reading approaches when reading texts in English. More specifically, there are two distinctive patterns of strategy use. One group of readers, the "nonintegrators," tends to use local, bottom-up types of strategies. The other group of readers, the “integrators,” tends to rely more on general or top-down types of strategies. (2) The English-learning experiences of these participants suggest that the sociocultural factors in a learning context influence the aims or the reading purposes of the learners and consequently the strategies which are used to achieve those purposes. These participants generally go through three learning stages. In each of the learning stages, they read English for different purposes and thus use different strategies accordingly. (3) In addition to sociocultural factors, there are other factors which might have also influenced the development of the participants' reading strategies. These factors include personality, exposure to strategy training, language proficiency, reading interests, and academic majors. Based on these findings, the researcher concludes that as language teachers, we must not simply teach linguistic knowledge. Rather, we should train students how to use the second language as a tool to achieve individual learning purposes.

Campbell and Malicky (2002) in their study, examine the word identification and comprehension strategies used by 344 adult basic education students. The findings indicate that adults at all stages of literacy development are able to make effective use of their knowledge as they read, and that there are few differences in reading strategies used by adults at different levels of reading proficiency.

Finally, Tercanlıoğlu (2004), in her study, reports the results of an investigation which is conducted in a university in the United Kingdom. The general research question addressed in the study is: How do students approach the task of academic reading? Data for this study comes from five sources: audio taped interviews of 17

postgraduate students; a demographic questionnaire; the Adult Survey of Reading Attitude (ASRA); a reading efficacy belief instrument; and three texts that measure reading comprehension. Results of the study reveal that: a) ESL students rate anxiety and difficulty highly, whereas, L1 students rate modalities on the ASRA as more important; b) L1 students rate scores on both efficacy items on the reading efficacy belief instrument higher than ESL students; c) interviewees from both groups show a clear preference for cognitive strategies, followed by metacognitive and support strategies (however, where L1 students report high and frequent use of metacognitive strategies, ESL students report more frequent use of support strategies); and d) reading comprehension scores are similar for both groups of students on the instruments used.

Research on the Reading Strategies of Freshmen

Although the literature of analyzing the reading strategies of students learning a second language is quite broad, the research about analyzing the reading strategies of freshmen and prep school students is quite a few. Generally the studies show that, most college freshmen are passive readers with ineffective high school reading strategies (Simpson and Nist, 2000).

In a study by Smith (1992), college students are interviewed about their college reading experiences. One student says he skips over or skims the material and takes good notes in class, “It worked in high school but it does not work in college”. Another student says she reads college textbooks slowly, and sometimes twice, whereas in high school she read everything once and if she did not get it, she did not care. Smith also finds that the students do not understand textual aids. They do not see the point of having diagrams, charts, pictures, etc. Students normally skip these clues, especially tables and contents and guide questions (Smith, 1992). Research on college students’ strategy use has found that most strategy use is limited to text-based strategies, like re-reading (Wandersee, 1988). According to Nist and Mealey (1991), using strategies help students prepare for tests and monitor their text comprehension.

In 1997, another study about the use of reading strategies by university students at METU is conducted by Şahin. In this study, she investigates the relationship between education in reading in secondary and high school and the reading strategy use of freshmen students at METU while reading in English. Data are collected from the students through a three-part questionnaire and think aloud protocols. The first part of the questionnaire consists of questions related to the reading practices in secondary and high school. The second part includes questions directed towards reading strategies which are encouraged in pre-university education and reading strategy use by the students at university while reading English. The last part of the questionnaire is related to reading practices in English at university.

The findings of the study reveal that the students in this study are "usually or always" encouraged to use reading strategies in secondary and high school. With this particular group of students this encouragement proves to have positive impact on their strategy use at university and they use the same strategies "usually or always" at university while reading in English, even though they report that practices related to reading are not satisfactory in their pre-university education.

Wandersee (1988) studies the strategy use of freshmen reading textbooks and finds that students alter their strategies more in response to the expected method of evaluation than the type of text content. Wandersee also finds that increasing the attempts at a passage correlate with higher general personal achievement, only six percent of students in the study try to connect new information to prior knowledge, and that only 30% of women and 17% of men focus on the value of reading (why is this important? How does this information apply to me?) Despite the findings of other researchers regarding the development of metacognition with age, Wandersee do not find a relationship between college level and specific strategy use.

Geridönmez (1999) investigates the frequency of the use of reading strategies of 40 prep class students in Anadolu University. The students are all beginner level students. Strategy teaching by teacher's modeling is applied to the experimental group. The results show that both the reading comprehension and the use of reading strategies improve in the experimental group when they are compared to the control

group. The use of reading strategies by these prep school students indicates that the most frequently used reading strategies are social strategies. Other frequently used strategy types are metacognitive, cognitive, compensation and memory strategies. The least used strategy type is affective strategies according to this research.

In another study, Dolly (2005) aims at investigating how college freshmen mandated into a developmental reading course perceive the reading process, and how these perceptions are affected by developmental reading course intervention. A secondary purpose of this study is to determine the use of metacognitive reading strategies by students who are required to take a developmental reading course. Through pre-intervention and post-intervention surveys, interviews, note-taking logs and observation of students engaging in the reading process, the study investigates college students' perceptions of the reading process prior to and after course intervention; and metacognitive strategies used in reading text prior to course intervention, during course intervention and after course intervention.

Forty-eight college freshmen attending a large university in Michigan complete the survey which yields data relative to reading interests, beliefs about the purpose of reading, strategic behavior and early literacy experiences. Four students participate in a case study component of the research by completing think-aloud audiotape recordings of the reading situation, interviews and note-taking logs five times during a 15-week semester. The survey data is analyzed using descriptive statistics. The case study data is categorized and analyzed using an evaluation guide which is refined by the researcher.

Collectively, the four case study students report and demonstrate increased metacognitive behavior. These gradual changes support the researcher's belief that the developmental reading course has positively influenced students' awareness of strategies as well as their ability to use strategic behavior to comprehend academic text. In this case, it seems the students' oral language serves as rehearsal for class discussions as well as a facilitator of comprehension as the students do not demonstrate significant change in note-taking behavior.

The survey data shows that students have increased their questioning behavior, and positive perceptions of themselves as readers. Student responses to one post-survey question indicate a decreased perception about reading as constructing meaning; collectively as evidenced by the other survey responses and the case study data, clearly reading is a meaning making process. By observing student behaviors in authentic study situations, this study provides descriptive data pertinent to the development of less skilled college readers into more skilled college readers.

In another study, Yiğiter, Sarıçoban, and Gürses (2005) aim at identifying what strategies good readers employed in pre-, during- and post reading stages in classroom language learning. The preparatory ELT (English language teaching) students at Ataturk University are administered an inventory of strategy use. It is found in the study that good readers differ in some strategies whereas the good EFL (English as a foreign language) learners do not differ in pre-reading stage, but differed in both while-reading stage and post reading stage. The study concludes that the ELT and EFL learners may have different reading strategies depending upon their needs and interests.

Lee (2007) examines the differences in the self-reported use of metacognitive reading strategies by Taiwanese non-English major EFL college freshmen when reading English expository texts. Another aim of the study is to investigate the impact of rhetorical text structure (inductive versus deductive) on the participants' use of metacognitive reading strategies; to study the effects of rhetorical text structure on the participants' reading comprehension performance. One hundred and sixty-three EFL college freshmen divided into four groups by level of English reading proficiency read two expository texts over a one week period. One text is structured inductively and the other text deductively. After reading each passage, the participants complete the Survey of Reading Strategies (SORS) and a 10-item comprehension test.

English reading proficiency is significantly associated with the use of metacognitive strategies (e.g. global, problem solving, and support reading strategies), with the more proficient readers of English making greater use of the metacognitive strategies than the less proficient readers. In addition, text topic appears to impact reading comprehension performance, with participants answering more test items for the Chen Ho passage than for The Ancient Romans selection. Rhetorical text structure does not affect differentially reading comprehension, as originally hypothesized. EFL instructors might focus on teaching metacognitive strategies to their students along with those traditional activities designed to promote decoding accuracy, fluency, and vocabulary knowledge.

Özek and Civelek's (2006) study is about which reading strategies are generally employed by ELT students while reading a text, and which reading strategies are needed to be developed to understand the text better, and therefore, to continue academic studies successfully. The population of this study is composed of the 1st and 4th year students in ELT Department at Dicle University. Two different methods are used to collect data. In the first part, a self-report questionnaire consisting of 25 items is administered to 185 students. In the second part, Think-Aloud Protocol is conducted with 23 subjects. Reading strategies are evaluated under three headings: pre-reading, while-reading, and post-reading in both parts.

The results of TAPs analysis reveal that the students use only one strategy namely, "relating the title to the text content" in the pre-reading phase. As for the while-reading phase, the most effectively employed strategies are: using the dictionary parsimoniously, guessing the meaning of a word from the context, skipping some unknown words, thinking-aloud during reading, and assimilating the text with the background knowledge. However, none of the post-reading strategies are found to be used by the participants. The data collected from the questionnaire is analyzed statistically. The results of the analysis indicate that there are some significant differences on the effective use of cognitive reading strategies with regard to students' gender, age, and proficiency in reading, school source, and duration in learning English.

Reading Strategies and Gender

To date, little research has specifically aimed at investigating gender differences in the use of second language reading strategies. The current study seeks to shed more light on this area by investigating if and how second language reading strategy use at the university level differs according to gender.

Starna (1990) explores and describes the influence of gender differences on the reading process of college students. Four students--two males, two females--are studied for a semester in a college writing course. Students complete the following: reader-response papers, three formal papers that are based on their earlier reader responses, and a final paper in which they describe their reading process. Students are also interviewed during the semester and ask to discuss their personal histories, reading interests, and previous writing courses.

The students' written responses and interviews are analyzed for reading strategies and compared to those identified and discussed in previous research studies on gender and reading. The methods of the professor teaching the course are also analyzed. The results show that, the students' responses either contradict or illustrate the gender differences found in previous studies. In the two female students' responses, additional reading strategies emerge. Other variables influencing reading are also found in all of the responses. Among them are cultural, ethnic, and socio-economic differences.

Further analysis shows a relationship between the professor's teaching methods and the positive changes that have occurred in students' reading strategies over the semester. Even though there are contradictions in this study, the responses of these students help to further confirm that males and females use different reading strategies. Research results imply that a larger sample of students needs to be studied to establish more conclusive claims about the relationship between gender and reading. And the influence of variables other than gender needs to be investigated.

And if female reading strategies produce competent readers, teaching implications need to be considered.

Young and Oxford (1997) investigate the differences among 49 native English speaking men and women (26 females and 23 males) while reading two Spanish texts and one English text. The different passages are taken from textbooks used at the university-level courses of the participants and include topics such as economics, the presence of foreign cultures in work, leisure, and history. The subjects read the passages, rate their degree of familiarity with the passage topic, and then complete a think-aloud protocol. These strategies are then coded as either global or local. The local classification includes strategies such as skipping specific unknown words, translating a word or a phrase, paraphrasing, and breaking lexical items into parts. The second rubric, global strategies, is similar to top-down processing behaviors such as integrating information, recognizing text structure, using background knowledge, and anticipating content.

Results demonstrate no overall significant differences by gender in the use of global versus local strategies. However, there are significant gender differences in the frequency of use of specific strategies. Males monitor their reading pace and paraphrase more often than females with the Spanish passages. Females utilize one strategy more often than males while reading the texts: solve vocabulary problems. With regard to the recall scores, no significant differences by gender are reported for all three text topics, and furthermore, there are no reported differences by gender in the familiarity ratings with passage topics or background knowledge of any of the passages. Young and Oxford's (1997) study reveal no significant differences by gender in general reading strategies, recall scores, and topic familiarity ratings while reading a passage which is different from the mother tongue.

One of the most frequently cited studies of gender and strategy use using the SILL (Oxford's Strategy Inventory for Language Learning) is conducted by Green and Oxford (1995). The SILL is a 50-item survey designed to reveal the self-reported language learning strategies that second and foreign language learners utilize. Specifically, it consists of questions concerning six strategy types: memory

strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies, and social strategies which are also a basis for the current study. Green and Oxford study 374 pre-basic, basic, and intermediate college students in Puerto Rico. Approximately 178 students are female and 196 are male. Using Oxford's SILL and a standardized entrance exam, the researchers find that men and women differ on nearly one-third of the strategies on the SILL (15 of 50), which includes memory, cognitive, metacognitive, affective, and social strategies. On all strategies except for three, such differences are constant across proficiency levels, with women using higher levels of them.

Goh and Kwah (1997) also use the SILL, but this time the focus of study is Chinese learners of English. Participants consist of 175 students (female=50; male=125) studying at the beginning, intermediate, and high levels at a Singaporean university. Significant differences are found between males and females in the categories of compensation and affective strategies, yet not in the other four categories. However, regardless of whether or not significant differences are found in each category, females use more strategies in all of them.

With 128 (78 females and 50 males) second year university-level male and female students of German, Schueller (1999) tests the effects of top-down and bottom-up reading strategies instruction on the comprehension of two different literary texts. To assess comprehension, she uses both written recall and multiple choice questions. Overall, Schueller finds a higher degree of reading comprehension among females. More specifically, she reports that every female group outperform the male groups regardless of strategic training and comprehension assessment task with only one exception: only males with top-down strategy training do better than females on multiple choice (but not on recall). Schueller's study is the first to test whether males and females profit in similar ways from bottom-up and top-down strategy training, and her findings provide a strong basis for more research of this type. In light of the results, Schueller contends that if second language instructors do not have enough class time to teach both top-down and bottom-up strategies, they should focus on top-down strategy training because this will help both men and women.

In a study that examines the relationship between readers' gender, passage content, comprehension and strategy use, Brantmeier (2000) finds no significant gender differences in the overall number of global and local strategies that subjects use to process the texts in the study. This study provides evidence that gender differences do not account for difference in strategy use when reading a second language. Results echo Young and Oxford (1997) in that there are no differences by men and women in their strategy use.

Unlike Barnett's (1988) findings, subjects' strategy use (global and local) in Brantmeier's (2000) study does not affect comprehension. Brantmeier's (2000) results echo some of Sarig's (1987) findings in that the use of global strategies leads to both successful and unsuccessful reading comprehension.

Reading Strategies and the Textbook

Textbooks often include cues to help readers focus their attention on important information. Textbooks are unique in the cues they include; some include a variety while others rely on a select few (Goetz, Alexander and Schallert, 1987). In addition to unfamiliarity with common text structure, students are not necessarily aware of what aids textbooks offer. Students often skim chapters without noticing organizational aids such as, charts, diagrams, tables, pictures, summaries, etc. (Tomlinson, 1987). Tomlinson suggests that all students should be aware of aids text offer. The presence or absence of text cues helps students select comprehension strategies.

The constructivist philosophy of education views learning as a construction of knowledge taking place in students' minds. Knowledge is constructed through the integration of new experiences with previous experiences. This perspective on learning influenced reading theories and redirected early beliefs about the role of textbooks (Yore, Bisanz and Hand, 2003).

While researchers in reading and science education are making significant progress in understanding the role of the reader's prior knowledge in comprehension and learning, other researchers are examining the quality of the textbooks students read. After careful analysis of commercial textbooks in different subject areas, researchers find the texts to be "inconsiderate" or not user-friendly (see, for example, Anderson & Armbruster, 1984; Cole & Sticht, 1981). Studies suggest that many students are not able to read and understand the subject material textbooks from which they are asked to learn.

A good reading textbook should help students acquire reading strategies and enable learners to become more aware of metacognitive and strategy learning. Moreover, a good reading textbook should provide learners with multiple exposures to reading strategies (Uslu, 2003). A good reading textbook should also encourage the appropriate use of both top-down and bottom-up strategies (Crandall, 1995). Moreover, a good textbook should offer opportunities for developing speed and fluency as well as accuracy.

According to Crandall (1995), Grabe and Stoller (2002) another important element in a good reading textbook is the presentation of reading instruction at three levels; pre-reading, during-reading and post-reading. Pre-reading instruction activates students' background knowledge, provides information for comprehension, increases students' motivation and interests, and models strategies that students can use. During-reading instruction is also important to help students understand difficult concepts. In addition, during-reading instruction helps students relate ideas in a text and provide purposes for reading. Moreover, strategic reading takes place in this stage. As for the last stage, post-reading instruction ensures that students comprehend and extend the text. Enabling students to use the information they gather in a text, by completing some assigned tasks, is one option in this stage of a lesson.

The question of why textbooks are difficult for students to read and learn from has been addressed extensively in research (Meyer & Rice, 1984). Applied research on passages taken from basal textbooks (Beck, McKeown, Omanson, & Pople, 1984; Davison, 1984), science textbooks (Anderson & Armbruster, 1984), and social

studies textbooks (Beck, McKeown, Sinatra, & Loxterman, 1991; Calfee & Chambliss, 1988) demonstrate that texts assume far too much prior knowledge on the part of their readers. In addition, many texts introduce too many concepts and do not discuss them enough for adequate understanding. Additionally, texts are found to be organized in ways that fragmented rather than connected bodies of knowledge (Calfee & Chainbliss, 1988). These textual inadequacies result in limiting the quality and quantity of what students learn. This has been particularly problematic in many classrooms where teachers have relied so heavily on their texts to facilitate student learning (Good & Shymansky, 1986).

In a study, Dawson (1998) investigates students' reported transfer of textbook reading comprehension strategies taught in Study Strategies for College Success, which strategies students report using in their subsequent college course work, and whether they report using different strategies in different courses based on the students' perceptions of reading difficulty.

All students who have passed the reading improvement course and who are enrolled in at least two courses at the end of the following semester are sent a survey. The survey asks about students' use of eleven reading strategies taught in the reading course. The strategies are the general strategies of (a) comprehension monitoring and (b) referring to the syllabus; the pre-reading strategies of (c) activating prior knowledge, (d) previewing chapter headings, subheading, bold-faced terms and captions and (e) setting a purpose for reading by creating questions to be answered after reading; the during-reading strategies of (f) text annotation, (g) taking notes or outlining from the text and (h) taking notes or outlining from the text; and the post-reading strategies of (i) summarizing, (j) concept mapping or webbing and (k) creating concept cards. Data analysis is done through frequency tables and Chi Squares analysis. Five students are later interviewed in more depth about their strategy use.

According to the research, strategy transfer appears to have occurred. Students report regularly using seven of the eleven strategies. They report regularly using more during-reading strategies than pre- or post-reading strategies. Strategies

perceived as needed, effective, and not too time consuming have more reported use. A twelfth strategy, when and if to read, is found. Students read when and if they believe it effective and necessary to do so. Students report occasionally reading assignments after class, using lecture notes or class discussion as a guide to identifying key ideas in the text. Sometimes, students substitute lecture notes or class discussion for reading assignments.

Differential use of the strategies is found in the study. Students report using more strategies in reading assignments they perceive as more difficult and fewer strategies in assignments they perceive as less difficult. Idiosyncratic patterns of strategy use are found. None of the interviewees choose the same combination of strategies for regular use.

To summarize, early research in cognitive psychology examines aspects of readers and texts that are found to influence comprehension greatly. Researchers find that when readers have prior knowledge that conflicts with text information, their comprehension is impaired; students' prior knowledge appears to get in the way of effective comprehension and learning. Second, research on the comprehensibility or readability of textbooks suggests that many texts are not written in ways that are helpful to the learning and conceptual change process (Beck & Dole, 1992).

Reading Strategies of Science and Social Science Students

While there are some studies related to the reading strategies of first year science students, to date there are not any studies which examine the reading strategies of first year or prep class social science students.

DiGisi and Yore (1992) identify several strategies that are helpful for science students. Among the strategies, they state that, thinking about information visually (visualizing), noting the organization of the reading, and asking conceptual questions about the material are most beneficial to science students.

Pressley (2002) supports DiGisi and Yore’s (1992) statements in his study. According to Pressley, before students read, they must prepare themselves for the

task of reading. Preparation involves identifying the task, setting a goal or purpose, skimming the text to determine length and organization, and activating prior knowledge. Students begin with task identification, this allows students to assess which strategies are useful and which strategies will help them meet their goal. Noting text organization and length also helps students select useful strategies. Activating prior knowledge is essential and provides that framework for creating comprehension.

While some readers bring rich experiences to their reading, some students do not (Spence, 1995). For this reason, teachers are instrumental in providing scaffolding for their students. Regardless of which methods teachers use to prepare their students to read, they must scaffold using a variety of cognitive and metacognitive strategies (Vacca, 2002). In addition to using previews, teachers must also scaffold pre-reading by having students brainstorm, create questions, study pictures or survey titles and subheadings.

As important as the use of prior knowledge is to comprehension, it alone does not guarantee improved comprehension (Rivard and Yore, 1992). To improve comprehension, students must remain active readers by employing strategies while reading. The strategies students use while reading help monitor comprehension, calling to attention areas where comprehension drops. Several strategies used during reading include rereading, taking notes, making predictions, identifying topic sentences and topic paragraphs, integrating ideas to get main ideas, paraphrasing, evaluating and maintaining metacognitive awareness by asking questions such as “Is the text relevant to my goals?”, and “How are the different parts of the text related to each other?” (Pressley, 2002).

Once students have read it is important that they reflect back on their comprehension, there are several strategies students can use to do this. Among them are selective rereading, thinking about how to use the information and questioning. Through selective rereading, students go over difficult and important sections of text again. Thinking about how they will use the information in the text relates the

information back to their purpose or goal for reading. Questions however are the most popular method of reflection in content classrooms (Pressley, 2002).

According to Martino (1998), many college freshmen are unable to read expository material at a level of proficiency necessary for understanding and integrating information from their textbooks. Providing intervention that addresses these deficits and results in rapid improvements is critical if these students are going to pass their current courses and remain in college. The study examines whether an instructional approach termed Communicative Reading Strategies (CRS) will result in improvement in the ability to comprehend expository text. CRS uses interactive strategies that teach students to comprehend a text as it is read. The CRS approach is compared to a skills approach that addresses similar skills which are taught individually.

Subjects are 8 college freshmen reading at or below a 10th grade level and enrolled in an introductory biology course. Four subjects participate in an 8 week intervention program using CRS and four in the comparison condition. Pre- and post-test results of a standardized measure of reading comprehension, and weekly probes measuring literal and inferential comprehension of the biology text are used to compare gains.

Results reveal that both groups have improved following intervention for comprehension of inferential questions on the standardized measure. While group differences are not statistically different, qualitative differences are accrued to the CRS group, including higher gains, a college reading level at post-test and better performance on literal comprehension.

Analysis of weekly probes reveals reliably better performance for inferential questions for the CRS condition. Not only does the CRS group perform better for inferential questions, but the improvements occur more rapidly. After the first week of intervention, the CRS group has outperformed the skills group by over 2 points. Rapid improvements are important because by mid-semester a student may have already failed a course. While both instructional approaches result in gains, CRS has

the advantages of achieving a college reading level and effecting these changes faster than the skills approach.

Pentecost's (2003) study analyzes the usage of textbooks by 58 students in a first-year college chemistry course, the students' approaches to studying, and their knowledge about science reading. Student success in the course is measured by the final exam score. To analyze students' textbook usage the Science Reading Strategy Survey (SRSS) is developed. The SRSS allows students' usage of the textbook to be categorized into one of three groups: methodical/linear use, efficient use, and making connections/deep use. Seventy-one percent of chemistry students are categorized as using the textbook in a deep/making connections manner, while 15% report text usage that is categorized as efficient and 11% report a methodical/linear approach to text use.

The students' approaches to studying are determined by using the Study Process Questionnaire (SPQ). The internal structure of the SPQ is confirmed by factor analysis. Forty-three percent of students adopt an achieving approach and 41% approach their studies with a surface approach. Only 7.1% of students have a deep approach to learning. The disconnect between approach (SPQ) and reading strategies (SRSS) may be due to the students finding their general chemistry textbook a valuable resource for getting through a difficult subject they are not strongly motivated to learn.

Student's knowledge about reading science text is measured by the Index of Science Reading Awareness (ISRA). This is the first time this instrument has been used with college students. The ISRA is analyzed and the instrument is used to measure students' knowledge about science reading strategies and their general knowledge about science reading and text. The majority, 62%, of first-year chemistry students possess comprehensive knowledge about science reading strategies and science text. The remainder of students has surface knowledge and no students in this study are found to have an incomplete knowledge.

There is no correlation between the student's metacognitive knowledge (ISRA) and their reading strategy (SRSS). The student's success (exam score) is not correlated to the metacognitive knowledge (ISRA). Lastly, there is no correlation between the students' strategy use (SRSS) and their approach to studying (SPQ). When an analysis of variance is run only the students' approach to studying and the instructor influence the exam score.

In a study by Sonleitner (2005), the following questions about the reading strategies are investigated. (1) What metacognitive strategies do students report using while reading biology texts? (2) What is the relationship between reading strategies use and their attitude toward reading biology? (3) Does strategy use vary among good and poor readers, gender, and majors? (4) Does explicit strategy instruction improve students' attitude toward reading biology texts?

During the study, 430 students complete the Metacognitive Awareness of Reading Strategies Inventory and an attitude survey. Ten students volunteer as case study participants. These students receive instruction using multiple metacognitive strategies and participate in an interview.

This research indicates that college freshmen are somewhat skilled using metacognitive reading strategies, but rely primarily on problem-solving strategies. Use of metacognitive reading strategies is positively correlated with student attitudes toward reading science texts. Significant differences are found among good and poor readers, which suggest that good readers utilize more reading strategies than poor readers; males and females, favoring females as more effective strategy users. Finally the research indicates that there is a significant difference between students’ reading strategy employment and their majors.

Finally, in another study by Thampradit (2006), the reading strategies used by Thai university first year engineering students are investigated. The six research questions addressed in this study are: (a) What are the reading strategies used by Thai university first year engineering students? (b) What are the reading strategies used by students with different reading abilities while reading an expository text? (c)

What are the reading strategies used by male and female subjects while reading an expository text? (d) Do the levels of reading ability have a significant influence on the use of reading strategies? (e) Does gender have a significant influence on the use of reading strategies? and (f) Is there any significant interaction between gender and reading ability on students' use of reading strategies?

Forty-eight Thai full-time, first year university students (28 male and 20 female; 24 high-readers and 24 low-readers) participate in the study. All subjects are asked to produce verbal reports during the process of reading expository text. The subjects' verbal reports are transcribed and coded into idea units using Anderson's framework (Anderson, 1991).

The results of this study show that subjects appear to be using the same strategies, but they use them with different frequencies. Cognitive reading strategies are used most frequently while metacognitive reading strategies are used least frequently. Furthermore, there is a statistically significant difference in the use of cognitive, metacognitive, and compensating reading strategies between high and low English reading ability students. That is, different levels of English reading ability influence the subjects' use of reading strategies.

In contrast, gender does not seem to influence the subjects' use of reading strategies. Similarly, no statistically significant interaction between gender and reading ability on students' use of cognitive or metacognitive reading strategy is found. Interestingly, though, there is a statistically significant interaction between gender and reading ability on students' use of compensating reading strategies. Results suggest that since students with different levels of English reading ability use strategies not only with different frequencies, but also in different ways, it is necessary to teach low English reading ability students how to use strategies more appropriately and effectively.

In conclusion, Shuyun and Munby (1996) note that ESL academic reading is a very deliberate, demanding and complex process in which the students are actively involved in a repertoire of reading strategies. Existing research has shown that, based

on the specific needs of their research projects, professional readers make choices as to what to read. That is to say, when readers encounter comprehension problems they use strategies to overcome their difficulties. Different learners seem to approach reading tasks in different ways, and some of these ways appear to lead to better comprehension. It has been noted that the paths to success are numerous and that some routes seldom lead to success. The hope is that if the strategies of more successful readers can be described and identified, it may be possible to train less successful learners to develop appropriate strategies.

As the selected literature about the use of reading strategies by students in science and social science departments, the effect of gender, the textbook and the other related issues have been presented, it can be concluded that using reading strategies at all levels increases comprehension and achievement. Inadequate research has been done related to the science and social science students in prep classes, and therefore more studies are needed. In addition, most of the research shows that gender has an effect on the use of reading strategies and females tend to be more active strategy users than their male counterparts. In conclusion, the textbooks the students use do not generally apply the various strategies that the students may frequently use; therefore do not appeal to the students in different departments equally. In the next chapter, information about the methodology of this study will be presented.

CHAPTER IV: METHODOLOGY

Introduction

This study aims to investigate whether there is a significant difference in the use of reading strategies by students in science and social science departments in prep classes of School of Foreign Languages (SFL), Dokuz Eylül University (DEU) and which reading strategies these two department students use. The study also intends to find out gender's effect on strategy use. Another goal of the study is to identify the reading strategies employed in the textbook "Reading Keys" and to find out which group of students the strategies in the textbook appeal to. Finally, the study is designed to reveal whether there is a significant difference between the use of reading strategies by science and social science students and their achievement in reading comprehension and the effect of textbook on comprehension.

The research addresses the following questions:

2. Is there a correlation between the reading strategies of the students in science and social science departments in prep classes and the strategies applied in the textbook?

2. a) Which strategies are employed by science students?
   b) Which strategies are employed by social science students?
   c) Is there a significant difference between the reading strategies of science and social science students?

3. a) Which strategies are employed by girls?
   b) Which strategies are employed by boys?
   c) Is there a significant difference between the reading strategies and gender?

4. Which department's students does the textbook "Reading Keys" appeal to in terms of the reading strategies promoted in it?

5. Is there a significant difference between the use of reading strategies by science and social science students and their achievement in reading comprehension?

In the following sections of this chapter, the information about the participants, instruments, data collection procedures, and data analysis will be discussed in detail.

Participants

This study is conducted at School of Foreign Languages (SFL), Dokuz Eylül University (DEU) which provides English courses to all students in various departments. The aim of these English courses is to enable students to follow lectures and read written materials effectively. After a proficiency exam applied at the beginning of the first term, while some of the students who receive under 70 points are required to study in preparatory school where they have a one-year intensive English program, others whose scores are 70 and over are exempted from the lessons of prep classes and continue their departments. In addition, the students of preparatory school take a placement test and according to their results, they are placed to different levels of classes. There are five levels of classes in DEU, School of Foreign Languages. These are A, B, C, D1 and D2 which range from upper intermediate to beginner level of students.

The participants for this study are C level intermediate science and social science students whose ages range from 18 to 22. They have English courses for about 25 hours a week including two hours of reading. Approximately 400 randomly chosen science and social science students participated in this study. The reason why only intermediate level students participate in this study is that most of them are able to answer the intermediate level questions in the reading comprehension test which was prepared according to the strategies promoted in their reading textbook at the beginning of the second term. The reading textbook is called “Reading Keys” which is used as the core intermediate-level reading textbook in SFL.

In the first part of the study, 141 C level science and social science students answered the questions in the reading comprehension test for the pilot study of the validity and reliability of the test which was developed by the researcher herself. After the reliability analysis, this test is applied to 400 different C level science and social science students. They study at different departments at DEU, such as international relationships, economics, management, mechanical engineering, environmental engineering, food engineering, civil engineering, nursery, chemistry, archeology, English teaching, fine arts, deck, theology, social science teaching, etc. Table 4.1 shows the distribution of the respondents in the pilot study of reliability and Table 4.2 shows the distribution of the respondents with their departments.

Table 4.1

The distribution of the students who participated in the pilot study

	Number of Students (n)	%
Science Department	79	56
Social Science Department	62	44
TOTAL	141	100

Table 4.2

The distribution of the students who responded to the Reading Strategy Scale and Reading Comprehension Test

	Number of Students (n)	%
Science Department	228	57
Social Science Department	172	43
TOTAL	400	100

Instruments

Instruments used in this study include the “Reading Strategy Scale” (Oxford et al., 2004 modified by Uzunçakmak, 2005) and the “Reading Comprehension Test” (2009) developed by the researcher herself.

Reading Strategy Questionnaire

The questionnaire, Oxford et al.’s (2004) modified by Uzunçakmak’s (2005) “Reading Strategy Questionnaire” (see Appendix A), is administered to 400 science and social science students. It is used to determine the reading strategies that intermediate level science and social science students reported employing and examine the correlation between the students reading strategies and those utilized in the textbook Reading Keys.

The questionnaire consists of 35 items that are grouped under three categories: strategies used (a) before, (b) while, and (c) after reading. Items 1, 2, and 3 are concerned with the strategies used before reading. Items from 4 to 34 are related to the strategies used while reading. Finally item 35 is a strategy appropriate to be employed after reading.

The items in the questionnaire are based on Oxford’s (1990) reading strategy types since they are the most detailed of all. In addition, her reading strategies are more frequently employed in textbooks, they are clear cut and finally her classification includes all possible reading strategy types that are used by learners. The reading strategy types that are included in the questionnaire are memory, cognitive, metacognitive and compensation reading strategies.

Information about the students’ reported use of strategies is gathered through the use of a Likert scale (Brown & Rodgers, 2002). The questionnaire, which uses a five-point Likert scale, provides the students with five possible answers of frequency that range from ‘1’ (almost never) to ‘5’ (almost always).

The questionnaire, written in English, is translated into Turkish by Uzunçakmak (2005) through a back translation process (see Appendix B) since this procedure is found to be more reliable than direct translation (Kim & Lim, 1999). She translated the questionnaire into Turkish first, and then a colleague translated the Turkish version to English. By comparing the back translation and the original version, necessary changes were made in the Turkish version. The reliability of the questionnaire was found to be .81 using Cronbach's alpha coefficient of internal consistency.

Reading Comprehension Test

The second instrument is the "Reading Comprehension Test" (see Appendix C) which was developed by the researcher herself. The test is administered to 400 science and social science students just after the students have answered the "Reading Strategy Questionnaire". The test includes 20 multiple choice questions with five options. These questions are about four intermediate level reading passages which are chosen according to the topics that the students encounter in their reading textbook. After the questions are prepared, they are gone through and checked for validity by three colleagues who are experienced teachers at English teaching and the necessary corrections are made.

This test is applied to 141 C level science and social science students in DEU, SFL as a pilot study to analyze the reliability of the test. After the analysis, the reliability of the test was found to be .83 using Cronbach's alpha coefficient of internal consistency. Finally, the Reading Comprehension Test is administered to different 400 C level science and social science students by the researcher herself at the beginning of the second term. The test questions are prepared in parallel with the reading strategies that are utilized in the students' textbook. Table 4.3 shows the distribution of the questions and which strategies they are based on.

Table 4.3

The distribution of the questions in the "Reading Comprehension Test" and which strategies they are based on

Questions	F	%
Understanding the main idea	4	20
Inferring meaning	3	15
Identifying the topic	2	10
Identifying cohesion	2	10
Understanding linking words	2	10
Finding synonyms	2	10
Finding antonyms	2	10
Finding a title	2	10
Summarizing	1	5
TOTAL	20	100

Data Collection Procedures

The study was conducted in two stages to address the research questions. In the first stage, the reading textbook was evaluated by the researcher to identify the reading strategies applied in the textbook with the reading strategy questionnaire. In the second part, the questionnaire and the reading comprehension test were administered to the students who are from science and social science departments in prep classes in order to collect data on their use of reading strategies and their achievement in reading comprehension.

In the first part of the study, after receiving the necessary permissions (see Appendix D) from Dokuz Eylül University, School of Foreign Languages, item analysis was done to identify and evaluate the reading strategies that are explicitly

utilized in the textbook. The first instrument “Reading Strategies Questionnaire” was made use of by the researcher to evaluate the textbook in terms of reading strategies. The questionnaire was used as a textbook evaluation instrument as it includes all types of reading strategies which have appeared in the literature (in approximately 30 articles and books) and all the strategies that the students might use while reading an English passage. This evaluation instrument was piloted on a unit of the book with four experienced instructors working in SFL, DEU, to determine inter-rater reliability and solicit feedback on the instrument. One of the participants in the pilot study taught the book in the first term, and three of them taught it in the second term. Each participant taught unit four from the book and was given a copy of the questionnaire. They were asked to complete the exercises in unit four and then evaluate them in terms of 35 reading strategies in the instrument by noting down all the strategies that were explicitly or implicitly mentioned in each exercise in the unit. The researcher also evaluated the same unit in the textbook using the same instrument. After the participants in the pilot study evaluated the unit, the researcher compared her results with theirs and observed that the results are similar. In this piloting, a high inter-rater reliability was achieved because 87 % of the strategies determined in unit four by the researcher and the participants were the same Therefore, no changes were made and all the units in the textbook were analyzed afterwards with the same instrument. The researcher evaluated the book unit by unit using the questionnaire and the reading strategies that are explained and practiced in each exercise item were identified.

While evaluating the textbook “Reading Keys”, the researcher completed all the exercises in all units of the book and evaluated them, item by item, in terms of reading strategy types and expectations. The researcher noted all the difficulties that she experienced while deciding which strategies were dealt with. To overcome the difficulties in determining the strategies and strategy requirement of exercise items, she consulted her advisor and made the necessary decisions regarding the evaluation of the book. For instance, in exercises that had one set of instructions which applied to numerous items (e.g., the instruction “fill in the blanks” is applied to three different set of exercises without being mentioned again), all items were not counted as separate items. In addition, certain types of exercises such as matching with

synonyms/antonyms were evaluated according to the strategy types of the reading strategy questionnaire. After making these decisions, the researcher evaluated the book for the second time to increase the reliability of the evaluation.

In the second part of the study, the researcher conducted the pilot study for the reliability of the "Reading Comprehension Test" with 141 C level science and social science students in preparatory classes. This reading comprehension test was prepared according to the strategy types that were utilized in the textbook. When the test's reliability was analyzed, it was found to be .83 using Cronbach's alpha coefficient of internal consistency. Next, the Turkish version of the "Reading Strategy Questionnaire" and the "Reading Comprehension Test" were administered to 400 C level science and social science students one after another at the beginning of the second term of 2009-2010 academic year. Since the participants used in the pilot and the actual study needed to be similar, (Best & Khan, 1998), the questionnaires and the tasks were administered to intermediate C level students in both the pilot and the actual studies. A consent form (see Appendix F) which informed students about the questionnaire's being voluntary and their responses being confidential was also translated into Turkish (see Appendix G) and included in the questionnaire.

Both the questionnaire and the test were administered by the researcher herself to all these C level science and social science students at different lessons of the same week. The whole administration took one week in March. The answers of the students to the reading comprehension test were checked the next week and a statistical package was used in entering and analyzing the data obtained from the test and the reading strategy questionnaire. Data entry was completed by the first week of April, 2010 and the data analysis was completed by the second week of April, 2010.

Data Analysis Procedures

The results of the study were analyzed quantitatively from the data which were gathered from the questionnaire, the reading comprehension test and the same questionnaire used for the evaluation of the textbook by the researcher. In order to analyze the results of the first part of the study; that is the evaluation of the textbook

in terms of the reading strategies utilized in it, the researcher calculated frequencies and percentages for each strategy in four different strategy types: memory, cognitive, metacognitive, and compensation.

In the second part of the study, students' responses to these questionnaires and the test were computed using a statistical passage. The frequencies, standard deviations, and mean scores of the results were calculated. To investigate the possible differences between the use of reading strategies by the students and their departments, the effect of gender on reading strategy use and the difference between the use of reading strategies of the students and their achievement in reading comprehension, t-tests and independent sample tests were run to interpret the results of the questionnaire.

The strategies students reported using were identified and coded separately for each participant. Then the strategies used by science and social science students were analyzed to compare two groups of readers. Furthermore, the strategies used by male and female students were analyzed to understand whether these two groups differ from each other on their strategy use. Another t-test and sample test were run to see the difference of the use of reading strategies of science and social science students and their achievement on reading comprehension.

The finding of the reading strategies utilized in the textbook was compared to the reading strategies and the proficiencies of science and social science students to explore the correlation between the reading strategies of the students and those addressed in the textbook, and whether science or social science students the textbook mostly appeals to.

Conclusion

This chapter on methodology gives general information about the purpose the study with the research questions addressed in the study. It also provides information about the participants, instruments, data collection procedures and data analysis. In the next chapter, the data analysis done using the above mentioned methods will be presented.

CHAPTER V: FINDINGS AND DISCUSSION

Overview of Study

This study consisted of two parts. The aim of the first part of the study was to evaluate "Reading Keys" which is the intermediate-level reading textbook used in School of Foreign Languages, DEU, to explore the correlation between the reading strategies of the science and social science students and those utilized in the textbook. To gather data, the reading strategy questionnaire was used to serve as a research tool. (See chapter four for a detailed description of the data collection instrument.) The aim of the second part of the study was to investigate the use of reading strategies by students in science and social science departments in prep classes; the effect of gender on strategy use; the difference between the students' use of reading strategies; their achievement in reading comprehension and finally which department students the textbook mostly appeals to. The participants of the second part of the study were 400 C level science and social science students in DEU, SFL in the second term. A questionnaire and a reading comprehension test, developed as research tools, were distributed to the participants.

The results of the textbook evaluation were analyzed quantitatively by calculating the frequencies and the percentages of each strategy in the textbook by the researcher. In order to answer the first research question, the strategies which were dealt with in the textbook were categorized according to their types. Afterwards, these strategies were compared to the students' use of reading strategies to investigate the correlation between them.

The results of the questionnaire and test reveal science and social science students' reading strategy use and their achievement. These were analyzed quantitatively using a statistical package. Frequencies and percentages for every item were calculated to interpret the results of the questionnaire.

Data Analysis

Data analysis consisted of a quantitative analysis of the data obtained from the textbook evaluation, questionnaire and test. The data obtained from the evaluation of the textbook in terms of reading strategy utilized in it, in the first part of the study, were analyzed through frequencies and percentages. The data obtained from the questionnaire and the test, in the second part of the study, was analyzed through frequencies, percentages, means, standard deviations, t-tests and independent sample tests.

Analysis of the Textbook Evaluation

The purpose of the evaluation of the textbook “Reading Keys” was to answer the main research question: Is there a correlation between the reading strategies of the students in science and social science departments in prep classes and the strategies applied in the textbook?, and the question stemming from the main research question: Which department’s students does the textbook “Reading Keys” appeal to in terms of the reading strategies promoted in it?. The answers to these questions are presented in the following sections of this chapter after answering the other research questions since to explore the correlation between the reading strategies of the students and those addressed in the textbook, the reading strategies of the students are required to be identified. However, in this section the reading strategies that are utilized in the textbook will be presented.

Reading strategies that are utilized in the textbook:

The strategies that are utilized in the textbook appear in three different strategy types which are cognitive, compensation and memory. The results of the textbook evaluation reveal that 17 out of 35 reading strategies in the reading strategy questionnaire are addressed in the textbook. These 17 strategies are mentioned 100 times total in the textbook. These strategies are cognitive, compensation and memory strategies. The strategies which are utilized in the textbook include the following

(listed in order of frequency of their application). Finding synonyms and guessing what comes next are the most frequently utilized strategies. A less frequent set includes guessing from the title, identifying cohesion, understanding the main idea, recognizing parts of speech, and guessing meaning from context. Even less frequently utilized strategies are summarizing, identifying the topic, identifying text organization, inferring meaning, finding key words, using dictionary, and skimming. The final set which are addressed an equal number of times, though infrequently includes scanning, finding antonyms, and understanding connectors. When the types of the strategies are considered, it can be seen that the most frequently used strategies which are finding synonyms, guessing what comes next and guessing from the title are compensation and cognitive strategy types. Furthermore, 13 out of 17 strategies that are utilized in the textbook are cognitive strategies, 3 out of 17 are compensation strategies and only one strategy is an example of memory strategy. Table 5.1 displays the strategies that are utilized in the textbook "Reading Keys" with their types, frequencies and percentages.

Table 5.1

Reading Strategies That Are Utilized in the Textbook

Reading Strategies	Type	F	%
Finding synonyms	Cognitive	20	20
Guessing what comes next	Compensation	14	14
Guessing from the title	Compensation	9	9
Identifying cohesion	Cognitive	8	8
Understanding the main idea	Cognitive	7	7
Recognizing parts of speech	Cognitive	6	6
Guessing meaning from context	Compensation	5	5
Summarizing	Cognitive	4	4
Identifying the topic	Cognitive	4	4
Identifying text organization	Memory	4	4

Table continued			
Inferring meaning	Cognitive	4	4
Finding key words	Cognitive	3	3
Using dictionary	Cognitive	3	3
Skimming	Cognitive	3	3
Scanning	Cognitive	2	2
Finding antonyms	Cognitive	2	2
Understanding linking words	Cognitive	2	2
TOTAL		100	100

Note: Frequencies indicate how many times the strategies are applied. Percentages indicate percentage of occurrence out of 100 total applications.

The reading strategies that are utilized in the textbook are examples of three types of strategies. These are cognitive, compensation and memory strategies (listed in the order of frequency). The frequency and the percentage of cognitive strategies show that cognitive strategies are the most frequently addressed strategy types. They are seen 68 times in the textbook. The second frequently utilized strategy type is compensation which is applied 28 times in the textbook. Finally, the least frequently applied strategy type in the textbook is memory which is seen only 4 times in 100 reading strategy applications. Metacognitive type of strategy application cannot be evaluated in the textbook. Table 5.2 displays the types of reading strategies that are utilized in the textbook with their frequencies and percentages.

Table 5.2

Reading Strategy Types That Are Utilized in the Textbook

Strategy Type	F	%
Cognitive	68	68
Compensation	28	28
Memory	4	4
TOTAL	100	100

Note: Frequencies indicate how many times the strategy types are applied. Percentages indicate percentage of occurrence out of 100 total applications.

Analysis of the Reading Strategy Questionnaire

The "Reading Strategy Questionnaire" is administered to the science and social science students in preparatory classes of SFL, DEU. The participants consist of 400 C level students. To analyze the data obtained from the questionnaire, frequencies and percentages are determined for each questionnaire item. In addition, mean values and standard deviations and t-tests are calculated by using a statistical package. The respondents choose answers on a 1-5 scale with 1= Almost Never, 2= Rarely, 3= Sometimes, 4= Usually, 5= Almost Always. In order to explore the ordering of the strategies according to the frequency of reported use, the participants' responses are rank ordered by average mean scores. Consequently, the ranking of reported strategies from the most used to the least used one is determined

In this section, reading strategies employed by (a) science students, (b) social science students, and (c) whether there is a significant difference between science and social science students are presented. Furthermore, reading strategies employed (d) male students, (e) female students, and (f) whether there is a significant difference between male and female students in terms of using reading strategies are presented.

Reading strategies employed by science students:

In the first part of the questionnaire, three personal information questions are asked to the participants to gather information about (a) their name, (b) their department, and (c) their gender. (See Chapter 4 for other background information about the participants.) The second question in the questionnaire was about the participants' departments, which shows that 228 out of 400 students who participate in the study are from science departments. (See Table 4.2 for number and percentage of students.)

The analysis of the questionnaire reveals that science students use 13 out of 35 reading strategies the most. The most frequently employed strategies (almost always) by science students are one cognitive, two compensation strategies. These are (listed in the order of frequency) ‘starting reading from the first paragraph and reading all way through the last paragraph’, ‘using the title to predict the contents’, and ‘reading aloud the entire text’. The other frequently used strategies (usually) are two compensation, three metacognitive, three cognitive and one affective type of strategies. These are ‘skipping the sentence when not understanding it’, ‘focusing on the tense of a verb’, ‘continuing reading even if having difficulty’, ‘paying attention to linking words’, ‘going back to pervious sentences’, ‘paying attention to parts of sentences’ ‘not translating each sentence into Turkish’, ‘not trying to understand the every word’, and ‘checking what each pronoun refers to’. The last frequently (sometimes) employed strategy by science students is a compensation strategy which is ‘predicting what will come next’. Table 5.3 displays the means, percentages and types of reading strategies which are most frequently used by science students.

Table 5.3

Reading Strategies That Are Most Frequently Applied by Science Students

No: Reading Strategy	Type	Mean	%
1. I start reading from the first paragraph and read all the way through the last paragraph.	Cognitive	4.202	84
2. I use the title to help predict the contents.	Compensation	4.140	83
3. I read aloud the entire text.	Compensation	4.127	82
4. When I can not understand a sentence even if I know every word, I skip that sentence.	Compensation	3.947	79
5. I focus on the tense of a verb, such as present tense and past tense.	Metacognitive	3.864	77

Table continued			
6. I continue reading even if I have difficulty.	Affective	3.816	76
7. I pay attention to linking words such as "however" and "besides" so that I can understand the structure.	Compensation	3.702	74
8. If I'm having trouble, I go back to previous sentences.	Cognitive	3.684	73
9. I pay attention to parts of sentences such as phrases and clauses.	Metacognitive	3.373	67
10. I translate each sentence into my native language.	Cognitive	3.311	66
11. I try to understand the meaning of every word in a text.	Cognitive	3.149	63
12. I check what each pronoun refers to.	Metacognitive	3.136	62
13. I predict what will come next.	Compensation	2.978	59

Note: Means indicate the average point of use out of 5.00. Percentages indicate the percentage of occurrence out of 35 total strategies.

The analysis of the reading questionnaire also demonstrates that science students' most frequently employed reading strategies are compensation strategies which are 5 out of 13 strategies. The second most frequently applied strategy type is cognitive which constitutes 4 out of 13 strategies. A less frequently applied group of strategies are metacognitive strategies that is 3 out of 13 and finally the last frequently used strategy is an affective one which is 1 out of the totally used 13 strategies. Table 5.4 displays the frequency and the percentages of the reading strategy types that science students in preparatory classes most frequently employ.

Table 5.4

Reading Strategy Types That Are Most Frequently Applied by Science Students

Strategy Type	F	%
Compensation	5	38.46
Cognitive	4	30.77
Metacognitive	3	23.08
Affective	1	7.69
Total	13	100.00

Note: Frequencies indicate how many times the strategy types are applied. Percentages indicate percentage of occurrence out of 13 total strategies.

Reading strategies employed by social science students

The second question in the questionnaire, as mentioned earlier, about the participants' departments shows that 172 out of 400 students who participate in the study are from social science department. (See Table 4.2 for number and percentage of students.)

The analysis of the questionnaire reveals that social science students use 5 out of 35 reading strategies the most. The most frequently employed strategies (usually) by science students are one compensation, one cognitive and one metacognitive strategy. These are (listed in the order of frequency) 'considering the type of a text', 'skimming', and 'paying attention to sentence structure'. The other frequently used strategy (sometimes) is a cognitive one which is 'figuring out the main idea of each paragraph'. The last frequently (nearly sometimes) employed strategy by social science students is a cognitive strategy which is 'following the line with a finger or a pen'. Table 5.5 displays the means, percentages and types of reading strategies which are most frequently used by social science students.

Table 5.5

Reading Strategies That Are Most Frequently Applied by Social Science Students

No: Reading Strategy	Type	Mean	%
1. I consider what type of text it is, such as a newspaper article, a scientific paper, or a novel.	Compensation	3.628	73
2. I skim it first, and later I read for details.	Cognitive	3.291	66
3. I pay attention to sentence structure, such as subjects and objects.	Metacognitive	3.267	65
4. I try to figure out the main idea of each paragraph.	Cognitive	3.041	61
5. I follow the line I am reading with my finger or my pen.	Cognitive	2.145	43

Note: Means indicate the average point of use out of 5.00. Percentages indicate the percentage of occurrence out of 35 total strategies.

The analysis of the reading questionnaire also demonstrates that social science students' most frequently employed reading strategies are cognitive strategies which are three out of five strategies. These students' other frequently applied strategy types are compensation and metacognitive which constitute two out of the totally used five strategies. Table 5.6 displays the frequency and the percentages of the reading strategy types that social science students in preparatory classes most frequently employ.

Table 5.6

Reading Strategy Types That Are Most Frequently Applied by Social Science Students

Strategy Type	F	%
Cognitive	3	60.00
Metacognitive	1	20.00
Compensation	1	20.00
Total	5	100.00

Note: Frequencies indicate how many times the strategy types are applied. Percentages indicate percentage of occurrence out of five total strategies.

Difference between the use of reading strategies by students in science and social science departments

When Tables 5.4 and 5.6 are compared, it can be seen that science students use more reading strategies (13 out of 35) than social science students (5 out of 35). Besides, Tables 5.3 and 5.5 clearly demonstrate that the means of reading strategy use by science students (above 3.00 and 4.00) are higher than social science students (above 2.00 and 3.00). In other words, science students predominantly employ reading strategies yet social science students use them less consistently. What is more, the reading strategies which are frequently used by science and social science students are very different. For instance, social science students (see Table 5.5) most frequently use the reading strategies ‘considering the type of a text while reading’, ‘skimming’, ‘paying attention to sentence structure’, ‘understanding main idea’, and ‘following the line I am reading with my finger or a pen’ which are not used frequently by science students (see Table 5.3). Likewise, all the predicting strategies and the strategies ‘paying attention to linking words’, ‘continuing reading if having difficulty’, ‘checking what each pronoun refers to’, etc. which are used by science students are not frequently used by social science students. Table 5.7 shows the

comparison of the most frequently used strategy types by science and social science students.

Table 5.7

The Comparison of the Reading Strategy Types that are Most Frequently Used by Science and Social Science Students

Str. Type / Department		Compensation	Cognitive	Metacog.	Affective	Total
Science	F	5	4	3	1	**13**
	%	38.46	30.77	23.08	7.69	**100.00**
Social Science	F	1	2	2	-	**5**
	%	20.00	40.00	40.00	-	**100.00**

Note: Frequencies indicate how many times the strategy types are applied. Percentages indicate percentage of occurrence out of the totally used strategies.

In addition to these findings, independent two samples t-test is computed in order to find out the difference between the use of reading strategies by students in science and social science departments. The findings of the t-test reveal that there is a significant difference between the use of 13 reading strategies by science and social science students. These strategies are ‘using title to predict the content’, ‘paying attention to parts of sentences’, ‘focusing on the tense of a verb’, ‘not trying to understand the meaning of every word’, ‘not translating each sentence into Turkish’, ‘reading all the paragraphs’, ‘continuing reading even having a difficulty’, ‘checking what each pronoun refers to’, ‘reading aloud the entire text’, ‘if having trouble, going back to previous sentences’, ‘skipping not understood sentences’, ‘predicting what will come next’, and ‘paying attention to linking words’. These strategies are more frequently employed by science students when comparing to social science students.

Table 5.8 presents the means and standard deviations of the use of each strategy item in the questionnaire by science and social science students.

Table 5.8

The comparison between the use of each strategy item by science and social science students

Group Statistics				
Strategy Item	Department	N	Mean	Std. Deviation
S1 (using title)	Science	228	4.14	0.923
	Social S.	172	3.895	1.087
S2 (considering text)	Science	228	3.618	1.179
	Social S.	172	3.628	1.185
S3 (skimming)	Science	228	3.189	1.306
	Social S.	172	3.291	1.292
S4 (paying attention to parts)	Science	228	3.373	1.056
	Social S.	172	3.017	1.226
S5 (paying attention to paragraph)	Science	228	3.715	1.05
	Social S.	172	3.488	1.268
S6 (focusing on the tense)	Science	228	3.864	1.136
	Social S.	172	3.581	1.223
S7 (understanding meaning)	Science	228	3.149	1.155
	Social S.	172	2.134	0.979
S8 (translating)	Science	228	3.311	1.189
	Social S.	172	2.366	1.048

Table continued

S9 (reading all the paragraphs)	Science	228	4.202	0.963
	Social S.	172	3.884	1.123
S10 (paying attention to sentences)	Science	228	3.114	1.093
	Social S.	172	3.267	1.149
S11 (continuing reading in difficulty)	Science	228	3.816	0.981
	Social S.	172	3.506	1.1
S12 (changing reading speed)	Science	228	4.048	0.999
	Social S.	172	3.907	1.039
S13 (reading aloud the difficult parts)	Science	228	2.404	1.358
	Social S.	172	2.302	1.307
S14 (skipping unknown words)	Science	228	2.654	1.205
	Social S.	172	2.547	1.171
S15 (linking with known material)	Science	228	3.64	1.051
	Social S.	172	3.552	1.094
S16 (dividing the unknown words)	Science	228	2.996	1.272
	Social S.	172	2.826	1.211
S17 (guessing meaning with clues)	Science	228	4.013	0.941
	Social S.	172	3.826	1.073
S18 (guessing meaning with info)	Science	228	3.842	0.981
	Social S.	172	3.669	1.103
S19 (referring)	Science	228	3.136	1,17
	Social S.	172	2.872	1.09

Table continued

S20 (underlining)	Science	228	3.272	3.657
	Social S.	172	3.047	1.49
S21 (marking)	Science	228	2.833	1.454
	Social S.	172	2.75	1.615
S22 (going over difficult parts)	Science	228	3.675	1.02
	Social S.	172	3.523	1.167
S23 (reading aloud)	Science	228	4.127	0.996
	Social S.	172	3.523	1.461
S24 (visualizing)	Science	228	3.724	1.106
	Social S.	172	3.535	1.121
S25 (understanding without translating)	Science	228	3.053	1.279
	Social S.	172	2.913	1.311
S26 (going back to previous sentence)	Science	228	3.684	1.044
	Social S.	172	3.471	1.11
S27 (following the line)	Science	228	2.07	1.305
	Social S.	172	2.145	1.292
S28 (using slashes)	Science	228	1.623	1.244
	Social S.	172	1.576	0.997
S29 (skipping the sentence)	Science	228	3.947	1.19
	Social S.	172	3.227	1.431
S30 (predicting)	Science	228	2.978	1.068
	Social S.	172	2.692	1.105

Table continued

S31 (paying attention to connectors)	Science	228	3.702	1.057
	Social S.	172	3.337	1.181
S32 (writing down keywords)	Science	228	2.658	1.293
	Social S.	172	2.61	1.304
S33 (finding the main idea)	Science	228	2.943	1.154
	Social S.	172	3.041	1.121
S34 (reading questions first)	Science	228	3.632	1.365
	Social S.	172	3.471	1.416
S35 (summarizing)	Science	228	2.768	1.267
	Social S.	172	2.68	1.283

Note: Means indicate the average point of use out of 5.00. N= Number of the students, S=Strategy. See Appendix for which strategy the item number refers to in the questionnaire.

In addition to these findings, t-test for equality of means is computed in order to find out whether the difference between the use of reading strategies by students in science and social science departments is significant or not. This analysis shows that there is a significant difference between the use of reading strategies by science and social science students. The findings of the t-test reveal that there is a significant difference between the use of 13 reading strategies by science and social science students as the significance (p value) of these strategies is < 0.05. These strategies which are S1, S4, S6, S7, S8, S9, S11, S19, S23, S26, S29, S30, and S31 are mentioned in the previous section. Table 5.9 displays the significance, mean difference and confidence interval of the difference of each strategy item in the questionnaire.

Table 5.9

The significance and mean difference values of each strategy item employed by science and social science students

t-test for Equality of Means						
Strategy	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Table continued						
S1	2.378	333.3581	0.018*	0.245	0.042	0.448
S2	-0.079	398	0.937	-0.009	-0.244	0.225
S3	-0.778	398	0.437	-0.102	-0.360	0.156
S4	3.108	398	0.002*	0.355	0.131	0.580
S5	1.902	327.7042	0.058	0.227	-0.008	0.461
S6	2.359	353.1988	0.019*	0.283	0.047	0.518
S7	9.283	398	0.000*	1.015	0.800	1.230
S8	8.277	398	0.000*	0.945	0.721	1.170
S9	3.042	398	0.003*	0.318	0.113	0.524
S10	-1.360	398	0.175	-0.153	-0.375	0.068
S11	2.922	344.2255	0.004*	0.310	0.101	0.519
S12	1.377	398	0.169	0.141	-0.060	0.343
S13	0.749	398	0.454	0.101	-0.164	0.367
S14	0.890	398	0.374	0.107	-0.129	0.343
S15	0.815	398	0.415	0.088	-0.124	0.300
S16	1.351	398	0.177	0.170	-0.077	0.417
S17	1.824	340.6539	0.069	0.188	-0.015	0.390
S18	1.633	343.6528	0.103	0.174	0.036	0.383
S19	2.299	398	0.022*	0.264	0.038	0.490
S20	0.762	398	0.447	0.225	-0.356	0.807
S21	0.533	346.3578	0.594	0.083	-0.224	0.391

Table continued

S22	1.362	339.7583	0.174	0.152	-0.068	0.372
S23	4.665	285.5705	0.000*	0.604	0.349	0.859
S24	1.681	398	0.094	0.189	-0.032	0.410
S25	1.071	398	0.285	0.140	-0.117	0.397
S26	1.968	398	0.050*	0.213	0.000	0.426
S27	-0.573	398	0.567	-0.075	-0.333	0.183
S28	0.408	398	0.683	0.047	-0.180	0.275
S29	5.354	328.5617	0.000*	0.721	0.456	0.985
S30	2.615	398	0.009*	0.286	0.071	0.501
S31	3.196	345.2368	0.002*	0.365	0.140	0.589
S32	0.362	398	0.718	0.047	-0.210	0.305
S33	-0.849	398	0.396	-0.098	-0.324	0.129
S34	1.147	398	0.252	0.161	-0.115	0.436
S35	0.679	398	0.498	0.087	-0.166	0.340

Note: S= Strategy. t= t-value, df= difference. '*' indicates the strategies having the significance value (p) <0.05.

The correlation between the reading strategies of the students in science and social science departments in prep classes and the strategies applied in the textbook in "Reading Keys"

The analysis of the textbook evaluation and the reading questionnaire reveals that there is not an adequate correlation between the reading strategies of the science and social science students and those employed in the textbook. When the frequencies of the reading strategy types employed in the textbook is taken into consideration (see Table 5.2), it is seen that the most frequently employed reading strategy types are cognitive strategies which constitute the 68% of the totally employed 100 strategies. However, 30.77% of the strategies frequently used by science students (see Table 5.4) and 40% of the strategies which are frequently used by social science students(see Table 5.6) are cognitive strategies. The second most frequently employed strategy type in the textbook is compensation strategy which constitutes

28 out of 100 strategies. When this finding is compared to the science and social science students' reading strategies, it is understood that the most frequently employed strategies by science students are compensation strategies. This strategy type constitutes the 38% of the most frequently used strategies of science students. However, this strategy type is the least frequently applied strategy type by social science students who use only one compensation strategy while reading a passage. The textbook also addresses four memory strategies which are used by neither science nor social science students frequently. Finally, the textbook does not include the affective strategies which are employed by science students and metacognitive strategies that are frequently used by both science and social science students.

The comparison of the frequently addressed reading strategies in the textbook 'Reading Keys' and the reading strategies of science students (see Tables 5.1 and 5.3) displays that only six out of 13 strategies which are most frequently used by science students are addressed in the textbook. These strategies are; 'using title to predict the contents', 'paying attention to linking words', 'paying attention to parts of sentences', 'not trying to understand the meaning of every word', 'checking what each pronoun refers to', and 'predicting what will come next'. At the same time, this analysis reveals that out of 17 strategies addressed in textbook, only six of them are used by science students. This finding supports that there is not an adequate correlation between the reading strategies of the science students and those applied in the textbook.

Similar to this finding, the comparison of the frequently addressed reading strategies in the textbook 'Reading Keys' and the reading strategies of social science students (see Table 5.5) displays that only two out of five strategies which are most frequently used by social science students are addressed in the textbook. These strategies are 'skimming' and 'finding the main idea'. This shows that out of 17 reading strategies which are utilized in the textbook, only two of them are preferred by social science students. This finding also supports that there is not an adequate correlation between the reading strategies of the social science students and those promoted in the textbook.

Which department's students the textbook "Reading Keys" appeals to in terms of the reading strategies promoted in it?

The previous section about the correlation between the use of reading strategies by science and social science students and those promoted in the textbook concludes that there is not an adequate correlation between the reading strategies of the science students and those in the textbook. Similarly, there is not an adequate correlation between the strategies of social science students and those in the textbook. From these findings, it can be concluded generally that the textbook 'Reading Keys' appeals to neither science nor social science students. However, when the frequently used strategies of science and social science students and those promoted in the textbook are compared, the following conclusions may be drawn from the research.

The textbook "Reading Keys" utilizes 17 reading strategies which are mostly cognitive strategies and then compensation and finally memory strategies. These 17 strategies are mentioned in the previous section. On the other hand, science students employ 13 reading strategies most frequently when they read an English passage. Six of these 13 reading strategies used by science students are addressed in the textbook. These strategies are; 'using title to predict the contents', 'paying attention to linking words', 'paying attention to parts of sentences', 'not trying to understand the meaning of every word', 'checking what each pronoun refers to', and 'predicting what will come next'.

As mentioned in the previous section, the analysis of the questionnaire reveals that social science students use five reading strategies most frequently while reading a passage. When the analysis of textbook evaluation is compared to the most frequently utilized strategies by science and social science students, it is seen that only two out of these five reading strategies are promoted in the textbook "Reading Keys". These are 'skimming' and 'finding the new idea'. Therefore, it can be concluded that even though the textbook lacks adequate correlation with the reading strategies of both science and social science students in terms of the strategies promoted in it, it appeals to science students more than social science students. This

is due to the fact that, the textbook utilizes more reading strategies -both in number and frequency- which science students use. Yet, it utilizes less reading strategies which social science students frequently employ. In conclusion, although the textbook fully appeals to neither science nor social science students, it appeals to science students more than social science students to some extent.

Reading strategies employed by girls:

In the first part of the questionnaire, three personal information questions are asked to the participants to gather information about (a) their name, (b) their department, and (c) their gender. (See Chapter 4 for other background information about the participants.) The third question in the questionnaire was about the participants' gender which shows that 214 out of 400 students who participate in the study are male and the remaining 186 students are female. Table 5.10 displays the distribution of the gender of the students who have participated in this study.

Table 5.10

The distribution of the gender of the students who participated in the study

Gender	Number of Students (n)	%
Male	214	53.5
Female	186	46.5
TOTAL	400	100

The analysis of the reading strategy questionnaire reveals that girls use 14 out of 35 reading strategies the most. The most frequently employed strategies (almost always) by female students are one cognitive and one compensation strategy. These are (listed in the order of frequency) 'changing reading speed depending on the difficulty of a text' and 'using the title to predict the contents' which are almost always employed by girls. The other frequently utilized strategies are five cognitive, one compensation, one metacognitive and one memory strategies. These are 'going

over difficult parts several times', 'continuing reading even if having difficulty', 'making a picture in my mind about what the text is saying', 'paying attention to the beginning and the end of each paragraph', 'going back to previous sentences when having trouble', 'underlining important parts', 'skimming' and 'marking important parts, using colored pens or drawing stars' which are almost usually used by female students. The last frequently (sometimes) used strategies by girls are two cognitive, one memory, and one compensation strategy type. These are 'summarizing', 'writing down key words', 'reading aloud the difficult parts of a text' and finally 'following the line I am reading with my finger or a pen'. Table 5.11 displays the means, percentages and types of reading strategies which are most frequently used by female students.

Table 5.11

Reading Strategies That Are Most Frequently Applied by Female Students

No: Reading Strategy	Type	Mean	%
1. I change reading speed depending on the difficulty of a text	Cognitive	4.188	83.7
2. I use the title to help predict the contents.	Compensation	4.151	83
3. I go over difficult parts several times.	Cognitive	3.919	78.3
4. I continue reading even if I have difficulty.	Compensation	3.812	76.2
5. I make a picture in my mind about what the text is saying.	Memory	3.806	76.1
6. I pay attention to the beginning and the end of each paragraph	Metacognitive	3.774	75.4
7. If I'm having trouble, I go back to previous sentences.	Cognitive	3.758	75.1
8. I underline important parts.	Cognitive	3.681	73.6
9. I skim it first, and later I read for details.	Cognitive	3.559	71.1

Table continued

10. I mark important parts, using colored pens or drawing stars	Cognitive	3.339	66.7
11. I summarize it in my own words.	Cognitive	2.866	57.3
12. I write down key words	Memory	2.823	56.4
13. I read aloud the difficult parts of a text	Compensation	2.591	51.8
14. I follow the line I am reading with my finger or my pen.	Cognitive	2.290	45.8

Note: Means indicate the average point of use out of 5.00. Percentages indicate the percentage of occurrence out of 35 total strategies.

The analysis of the reading questionnaire also demonstrates that female students' most frequently employed reading strategies are cognitive strategies which are seven out of 14 strategies. The second most frequently applied strategy type is compensation which constitutes three out of 14 strategies. Finally, a less frequently applied group of strategies that are employed by female students are metacognitive and memory strategies which are each two out of the totally used 14 strategies. Table 5.12 displays the frequency and the percentages of the reading strategy types that science students in preparatory classes most frequently employ.

Table 5.12

Reading Strategy Types That Are Most Frequently Applied by Female Students

Strategy Type	F	%
Cognitive	7	50.00
Compensation	3	21.42
Metacognitive	2	14.29
Memory	2	14.29
Total	14	100.00

Note: Frequencies indicate how many times the strategy types are applied. Percentages indicate percentage of occurrence out of 14 total strategies.

Reading strategies employed by boys

The second question in the questionnaire, as mentioned earlier, about the participants' gender shows that 214 out of 400 students who participate in the study are male. (See Table 5.10 for number and percentage of students.)

The analysis of the questionnaire reveals that male students use 11 out of 35 reading strategies the most. The most frequently employed strategies (usually) by male students are one cognitive and one compensation strategy. These are (listed in the order of frequency) 'reading aloud the entire text' and 'guessing the meaning of a word or a phrase by using the clues from the text'. The other frequently (sometimes) used strategies are examples of compensation and memory strategies. These are 'considering what type of text it is' and 'linking the content with what I already know'. Less frequently employed strategies by male students are examples of cognitive strategies. These are 'checking what each pronoun refers to', 'trying the figure out the main idea of each paragraph', and 'trying to understand the meaning without translating the text into Turkish'. The last frequently (sometimes) used strategies by male students are again examples of cognitive strategy types which are 'trying to understand the meaning of unknown words by dividing it into parts', 'predicting what will come next' and 'skipping unknown words'. Table 5.13 displays the means, percentages and types of reading strategies which are most frequently used by social science students.

Table 5.13

Reading Strategies That Are Most Frequently Applied by Male Students

No: Reading Strategy	Type	Mean	%
1. I read aloud the entire text.	Cognitive	3.981	79.6
2. If I don't understand something such as word or phrase, I guess its meaning using clues from the text.	Compensation	3.967	79.3

Table continued			
3.I consider what type of text it is, such as a newspaper article, a scientific paper, or a novel.	Compensation	3.659	73.1
4. I link the content with what I already know.	Memory	3.617	72.3
5. I check what each pronoun refers to.	Cognitive	3.037	60.7
6. I try to figure out the main idea of each paragraph.	Cognitive	3.019	60.3
7. I try to understand the meaning without translating the text into my native language.	Cognitive	3.009	60.1
8. I try to understand the meaning of an unknown word by dividing it into parts.	Cognitive	2.981	59.6
9. I translate each sentence into my native language.	Cognitive	2.916	58.3
10. I predict what will come next.	Compensation	2.897	57.9
11. I skip unknown words.	Cognitive	2.631	52.6

Note: Means indicate the average point of use out of 5.00. Percentages indicate the percentage of occurrence out of 35 total strategies.

The analysis of the reading questionnaire also demonstrates that male students' most frequently employed reading strategies are cognitive strategies which are seven out of 14 strategies. The second most frequently applied strategy type is compensation which constitutes three out of 14 strategies. Finally, a less frequently applied group of strategies that are employed by male students are memory strategies which are one out of the totally used 14 strategies. Table 5.14 displays the frequency and the percentages of the reading strategy types that male students in preparatory classes most frequently employ.

Table 5.14

Reading Strategy Types That Are Most Frequently Applied by Male Students

Strategy Type	F	%
Cognitive	7	63.64
Compensation	3	27.27
Memory	1	9.09
Total	11	100.00

Note: Frequencies indicate how many times the strategy types are applied. Percentages indicate percentage of occurrence out of 11 total strategies.

Difference between the use of reading strategies and gender

When Tables 5.12 and 5.14 are compared, it can be seen that female students use more reading strategies (14 out of 35) than male students (11 out of 35). Besides Table 5.11 and 5.13 clearly demonstrates that the means of reading strategy use by females (above 3.00 and 4.00) are higher than male students (above 2.00 and 3.00). In other words, girls predominantly employ reading strategies but boys utilize them less consistently. What is more, the reading strategies which are frequently used by girls and boys are very different. For instance, female students (see Table 5.11) most frequently use the reading strategies ‘skimming’, ‘changing reading speed depending on the difficulty of a text’, ‘underlining important parts’, ‘marking important parts, using colored pens or drawing stars’ and ‘going over difficult parts several times’ which are not used frequently by male students (see Table 5.13). Likewise, the strategies ‘paying attention to the beginning and the end of each paragraph’, ‘reading aloud the difficult parts of a text’, and ‘writing down key words’, etc. which are used by female students are not frequently used by male students. Table 5.15 displays the comparison of reading strategy types that are most frequently used by female and male students.

Table 5.15

The Comparison of Reading Strategy Types that are Most Frequently Used by Female and Male Students

Str. Type / Gender		Cognitive	Compensation	Memory	Metacog.	Total
Female	Frequency	8	3	2	1	**14**
	%	57.15	21.42	14.29	7.14	**100.00**
Male	Frequency	7	3	1	-	**11**
	%	63.64	27.27	9.09	-	**100.00**

Note: Frequencies indicate how many times the strategy types are applied. Percentages indicate percentage of occurrence out of the totally used strategies.

In addition to these findings, independent two samples t-test is computed in order to the find out the difference between the use of reading strategies and gender. The findings of the t-test reveal that there is a significant difference between the use of 14 reading strategies by male and female students. These strategies are ‘changing reading speed depending on the difficulty of a text’, ‘using the title to predict the contents’, ‘going over difficult parts several times’, ‘continuing reading even if having difficulty’, ‘making a picture in my mind about what the text is saying’, ‘paying attention to the beginning and the end of each paragraph’, ‘going back to previous sentences when having trouble’, ‘underlining important parts’, ‘skimming’, ‘marking important parts, using colored pens or drawing stars’, ‘summarizing’, ‘writing down key words’, ‘reading aloud the difficult parts of a text’ and finally ‘following the line I am reading with my finger or a pen’. These strategies are more frequently employed by female students when comparing to male students. Table

5.16 presents the means and standard deviations of the use of each strategy item in the questionnaire by male and female students.

Table 5.16

The comparison between the use of each strategy item by male and female students

Group Statistics				
Strategy Item	Gender	n	Mean	Std. Deviation
S1 (using title)	Male	214	3.935	1.023
	Female	186	4.151	0.969
S2 (considering text)	Male	214	3.659	1.151
	Female	186	3.581	1.215
S3 (skimming)	Male	214	2.949	1.326
	Female	186	3.559	1.190
S4 (paying attention to parts)	Male	214	3.313	1.096
	Female	186	3.113	1.191
S5 (paying attention to paragraph)	Male	214	3.481	1.186
	Female	186	3.774	1.097
S6 (focusing on the tense)	Male	214	3.659	1.222
	Female	186	3.839	1.127
S7 (understanding meaning)	Male	214	2.687	1.147
	Female	186	2.742	1.247
S8 (translating)	Male	214	2.916	1.203
	Female	186	2.892	1.247

Table continued

S9 (reading all the paragraphs)	Male	214	4.005	1.128
	Female	186	4.134	0.940
S10 (paying attention to sentences)	Male	214	3.107	1.097
	Female	186	3.263	1.139
S11 (continuing reading in difficulty)	Male	214	3.570	1.062
	Female	186	3.812	1.009
S12 (changing reading speed)	Male	214	3.813	1.058
	Female	186	4.188	0.931
S13 (reading aloud the difficult parts)	Male	214	2.159	1.227
	Female	186	2.591	1.420
S14 (skipping unknown words)	Male	214	2.631	1.237
	Female	186	2.581	1.137
S15 (linking with known material)	Male	214	3.617	1.054
	Female	186	3.586	1.088
S16 (dividing the unknown words)	Male	214	2.981	1.263
	Female	186	2.855	1.228
S17 (guessing meaning with clues)	Male	214	3.967	0.990
	Female	186	3.892	1.018
S18 (guessing meaning with info)	Male	214	3.706	1.097
	Female	186	3.839	0.962
S19 (referring)	Male	214	3.037	1.162
	Female	186	3.005	1.122

Table continued

S20 (underlining)	Male	214	2.752	1.427
	Female	186	3.661	0.962
S21 (marking)	Male	214	2.327	1.396
	Female	186	3.339	1.488
S22 (going over difficult parts)	Male	214	3.341	1.079
	Female	186	3.919	1.013
S23 (reading aloud)	Male	214	3.981	1.245
	Female	186	3.737	1.252
S24 (visualizing)	Male	214	3.500	1.108
	Female	186	3.806	1.103
S25 (understanding without translating)	Male	214	3.009	1.293
	Female	186	2.973	1.296
S26 (going back to previous sentence)	Male	214	3.449	1.055
	Female	186	3.758	1.081
S27 (following the line)	Male	214	1.939	1.230
	Female	186	2.290	1.352
S28 (using slashes)	Male	214	1.556	1.246
	Female	186	1.656	1.013
S29 (skipping the sentence)	Male	214	3.631	1.363
	Female	186	3.645	1.329
S30 (predicting)	Male	214	2.897	1.113
	Female	186	2.860	1.068

Table continued

S31 (paying attention to connectors)	Male	214	3.467	1.169
	Female	186	3.634	1.068
S32 (writing down keywords)	Male	214	2.477	1.225
	Female	186	2.823	1.354
S33 (finding the main idea)	Male	214	3.019	1.163
	Female	186	2.946	1.114
S34 (reading questions first)	Male	214	3.551	1.375
	Female	186	3.575	1.405
S35 (summarizing)	Male	214	2.612	1.242
	Female	186	2.866	1.298

Note: Means indicate the average point of use out of 5.00. n= Number of the students, S=Strategy. See Appendix for which strategy the item number refers to in the questionnaire.

In addition to these findings, t-test for equality of means is computed in order to the find out whether the difference between the use of reading strategies by male and female students is significant or not. This analysis shows that there is a significant difference between the use of reading strategies by male and female students. The findings of the t-test reveal that there is a significant difference between the use of 14 reading strategies by girls and boys as the significance (p value) of these strategies is < 0.05. These strategies which are S1, S3, S5, S11, S12, S13, S20, S21, S22, S24, S26, S27, S32, and S35 are mentioned in the previous section. Table 5.17 displays the significance, mean difference and confidence interval of the difference of each strategy item in the questionnaire.

Table 5.17

The significance and mean difference values of each strategy item employed by girls and boys

t-test for Equality of Means						
					95% Confidence Interval of the Difference	
Strategy	t	df	Sig (2-tailed)	Mean Difference		
					Lower	Upper
S1	-2.157	398	0.032*	-0.216	-0.413	-0.019
S2	0.661	398	0.509	0.078	-0.155	0.311
S3	-4.817	398	0.000*	-0.611	-0.860	-0.361
S4	1.749	398	0.081	0.200	-0.025	0.425
S5	-2.551	398	0.011*	-0.293	-0.519	-0.067
S6	-1.530	396.5705	0.127	-0.180	-0.411	0.051
S7	-0.460	398	0.646	-0.055	-0.290	0.180
S8	0.191	398	0.849	0.023	-0.218	0.265
S9	-1.254	397.3346	0.211	-0.130	-0.333	0.074
S10	-1.393	398	0.164	-0.156	-0.376	0.064
S11	-2.323	398	0.021	-0.242	-0.446	-0.037
S12	-3.737	398	0.000*	-0.375	-0.572	-0.178
S13	-3.235	368.3037	0.001*	-0.433	-0.695	-0.170
S14	0.420	398	0.675	0.050	-0.185	0.285
S15	0.287	398	0.774	0.031	-0.180	0.242
S16	1.012	398	0.312	0.126	-0.119	0.372
S17	0.744	398	0.457	0.075	-0.123	0.273
S18	-1.293	397.9687	0.197	-0.133	-0.336	0.069
S19	0.279	398	0.780	0.032	-0.193	0.257
S20	-3.131	398	0.002*	-0.909	-1.480	-0.338
S21	-6.979	382.0916	0.000*	-1.012	-1.297	-0.727
S22	-5.499	398	0.000*	-0.578	-0.785	-0.372

Table continued

S23	1.956	398	0.051	0.245	-0.001	0.491
S24	-2.765	398	0.006*	-0.306	-0.524	-0.089
S25	0.279	398	0.780	0.036	-0.219	0.291
S26	-2.893	398	0.004*	-0.309	-0.520	-0.099
S27	-2.700	377.266	0.007*	-0.351	-0.607	-0.095
S28	-0.871	398	0.384	-0.100	-0.325	0.126
S29	-0.106	398	0.916	-0.014	-0.280	0.251
S30	0.829	398	0.408	0.091	-0.125	0.306
S31	-1.484	398	0.139	-0.167	-0.389	0.054
S32	-2.683	398	0.008*	-0.346	-0.599	-0.092
S33	0.634	398	0.526	0.072	-0.152	0.297
S34	-0.171	398	0.864	-0.024	-0.298	0.250
S35	-1.993	398	0.047*	-0.253	-0.503	-0.003

Note: S= Strategy, t= t-value, df= difference. '*' indicates the strategies having the significance value <0.05.

Difference between the use of reading strategies by science and social science students and their achievement in reading comprehension

The analysis of the comparison of reading strategy questionnaire and the results of the reading comprehension test reveals that there is a significant difference between the use of reading strategies by science and social science students and their achievement in reading comprehension. The independent two samples test is computed to find out the difference and it is concluded that there is a significant difference between the use of reading strategies and achievement of science and social science students in reading comprehension. The mean of the science students' score from the reading comprehension test is 10.355 out of 20 which is higher than the mean of the socials science students' score as their mean is 8.616. From this perspective, it can be said that science students are more successful than social

science students in reading comprehension. Table 5.18 shows the science and social science students' means of achievement scores, and standard deviation.

Table 5.18

The achievement scores of science and social science students from the reading comprehension test

Group Statistics for Achievement Scores			
Department	N	Mean	Std. Deviation
Science	228	10.355	2.995
Social Science	172	8.616	3.168

In addition to these findings, t-test for equality of means is computed in order to the find out whether the difference between the achievement of reading comprehension by students in science and social science departments is significant or not. This analysis shows that there is a significant difference between the achievement of reading comprehension by students in science and social science departments. The findings of the t-test reveal that there is a significant difference between the achievement scores of these two departments' students as the significance (p value) of these scores' mean is < 0.05. Table 5.19 displays the significance, mean difference and confidence interval of the difference of each strategy item in the questionnaire.

Table 5.19

The significance and mean difference values of achievement by science and social science students

t-test for Equality of Means (Achievement)					
				95% Confidence Interval of the Difference	
t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
5.607	398	0.000*	1.739	1.129	2.349

Note: t= t-value, df= difference. (*) indicates having the significance value <0.05.

In order to answer the final research question about the difference between the use of reading strategies by science and social science students and their achievement in reading comprehension, the use of reading strategies by science and social science students and their achievement scores are compared. As Tables 5.7 and 5.8 reveal, science students use more reading strategies and they employ these strategies more frequently than their social science counterparts. Also, there is a significant difference between the use of reading strategies by science and social science students, in other words, the reading strategies employed by science students are different from the strategies employed by social science students. On the other hand, Tables 5.18 and 5.19 show that science students are more successful than social science students in terms of their achievement in reading comprehension. Moreover, the difference between the achievement scores of these two departments' students is significant. The t-test analysis of differences between the two groups in terms of achievement scores as presented in Table 5.19 yields a t value of 5.607. This result is significant at the $p < .05$ level. The results obtained from the mean values calculated for the two groups separately indicate that successful readers reported using more strategies than unsuccessful readers. Therefore, it can be concluded that the science students in preparatory classes employ more reading strategies thus more successful in reading comprehension while social science students employ less reading strategies and they employ these less frequently than science students thus are not as

successful as science students. The higher achievement scores of science students, as mentioned before, may be due to their more frequent use of reading strategies. Yet, the effect of textbook which appeals more to science students may be taken into consideration in terms of achievement, as well.

Conclusion

In this chapter, the results of the statistical tests done on the collected data through questionnaires as well as the data collected through textbook evaluation are presented. The results are presented in five different sections: analyses of textbook evaluation in terms of the reading strategies promoted in it; science and social science students' use of reading strategies; effect of gender on strategy use; the correlation between the reading strategies of science and social science students and those utilized in the textbook and which group of students it appeals to; and finally the difference between the use of reading strategies by science and social science students and their achievement in reading comprehension.

In the next chapter, the major findings of the study will be summarized in relation to the literature review.

CHAPTER VI: CONCLUSIONS AND SUGGESTIONS

Introduction

This study investigates the reading strategy use of science and social science students in prep classes of SFL, DEU. The study also explores the correlation between the reading strategies employed by science and social science students and those utilized in the textbook. Another aim of the study is to find out the gender's effect on strategy use. Finally, the study is designed to reveal whether there is a significant difference between the use of reading strategies by science and social science students and their achievement in reading comprehension and the effect of textbook on comprehension.

This study is conducted with 400 intermediate level students at SFL, DEU. First, reading strategies which are addressed in the textbook are determined through textbook evaluation analysis. Second, reading strategy use of these students is explored through the administration of the questionnaire. Third, students' achievement in reading comprehension is analyzed through a reading comprehension test. Finally, the findings of these analyses are compared to answer the research questions.

The research questions answered in this analysis are as follows:

1. Is there a correlation between the reading strategies of the students in science and social science departments in prep classes and the strategies applied in the textbook?

2. a) Which strategies are employed by science students?
   b) Which strategies are employed by social science students?
   c) Is there a significant difference between the reading strategies of science and social science students?

3. a) Which strategies are employed by girls?

b) Which strategies are employed by boys?

c) Is there a significant difference between the reading strategies and gender?

4. Which department's students does the textbook "Reading Keys" appeal to in terms of the reading strategies promoted in it?

5. Is there a significant difference between the use of reading strategies by science and social science students and their achievement in reading comprehension?

In this chapter, the findings of this study will be discussed. The findings of the results which are obtained through statistical analysis and evaluation will be related to the literature in the discussion section. The points where the results are in parallel with literature as well as the points that conflict with it will be explored and the possible reasons for these parallel or conflicting results will be discussed. Following the next section on pedagogical implications, limitations of the study are presented. This section is followed by suggestions for further research. In the conclusion, the major findings of the study are summarized.

Conclusions

In this section, the results of the study are discussed according to the order of analysis procedures. First, the findings of the analysis of textbook evaluation; second, the results of the analysis of the reading strategy questionnaire and finally the results of the reading comprehension test are discussed.

Conclusions Drawn from the Analysis of Textbook Evaluation

The Reading Strategies that are Utilized in the Textbook

As a result of the analysis of the textbook evaluation, it is revealed that the strategies that are utilized in the textbook appear in three strategy types which are cognitive, compensation and memory. Furthermore, this analysis shows that 17 out

of 35 reading strategies in the reading strategy questionnaire are addressed in the textbook. This finding is important as Tomlinson (1987) suggests that all students should be aware of aids text offer. The presence or absence of text cues helps students select comprehension strategies. Yore, Bisanz and Hand (2003) focus on this role of textbooks which construct knowledge taking place in students' minds and thus, improve reading comprehension.

From this perspective, it can be concluded that the textbook which science and social science students in prep classes use does not adequately expose the students with possible strategy types that the students frequently employ since it includes 17 out of 35 reading strategies in the questionnaire. However, according to many research findings about the importance of textbook on reading comprehension, it has been stated that a good reading textbook should acquire reading strategies and enable learners to become more aware of strategy learning. This result is supported by Uslu (2003) who concludes that a good reading textbook should provide learners with multiple exposure to reading strategies and encourage the appropriate use of both top-down and bottom-up strategies as Crandall (1995) also states.

Conclusions Drawn from the Analysis of the Reading Strategy Questionnaire

The conclusions drawn from the analysis of the reading strategy questionnaire will be mentioned under the research questions in relation with the literature review.

Reading Strategies Employed by Science Students

The analysis of the questionnaire reveals that science students use 13 out of 35 reading strategies the most. Science students' most frequently employed reading strategies are compensation strategies which are 5 out of 13. The second most frequently employed strategy type is cognitive which constitutes 4 out of 13, and a less frequently applied group of strategies are metacognitive strategies that are 3 out of 13. Finally, the last frequently used strategy type is an affective one which is 1 out of the totally used 13 strategies.

This finding supports Sonleitner's (2005) study which indicates that college freshmen in science department are somewhat skilled using metacognitive reading strategies but rely primarily on problem-solving and compensation strategies as in the present study it is revealed that science students in prep classes most frequently use compensation strategies and they use strategies more than metacognitive ones.

On the other hand, Thampradit's (2006) research about the reading strategies used by Thai engineering freshmen reveals that the utilization of cognitive reading strategies are more frequent than the application of metacognitive reading strategies by engineering students, which conflicts with the findings of this study as it has stated that compensation strategies are the most frequently applied strategy types of the science students in prep classes.

The results of the presents study also show that science students' most frequently employed strategies which are "starting reading from the first paragraph and reading all way through the last paragraph", "using title to predict the contents" and "reading aloud the entire text" do not include the several strategies which are identified by DiGisi and Yore (1992) as helpful strategies for science students. Among these strategies, as they state, "visualizing", "noting the organization of reading", and "asking conceptual questions about the material" are most beneficial to science students. However, none of these strategies are employed frequently by science students in prep classes which seem to be a contradictory point in this study.

Reading Strategies Employed by Social Science Students

The findings of the study obtained from the analysis of the reading strategy questionnaire reveal that social science students use 5 out of 35 reading strategies the most. The most frequently employed strategies by social science students are cognitive and metacognitive strategies. The final most frequently applied strategy type is compensation. The results conflict with Al-Nujaidi's (2003) findings who states that first year university students report using most types of strategies with

high and moderate frequencies and they also report significantly more frequent use of compensation strategies. On the other hand, the present study seems to support Tercanlıoğlu's (2004) findings which reveal that students show a clear preference for cognitive strategies, followed by metacognitive and support strategies.

Similarly, Geridönmez's (1999) study about the frequency of the use of reading strategies of prep class students indicates that the most frequently employed reading strategies are social, and then metacognitive, cognitive, compensation and memory strategies. The least applied strategy type is affective strategies according to this research which supports neither science nor social science students' frequently used strategies that are found out in the present study.

As there has been very limited research about the use of reading strategies by social science students so far, this study's findings are the only one which reveals the reading strategy preferences of social science students in prep classes.

In addition, it can be stated that "considering the type of the text", "skimming", "paying attention to sentence structure", "finding the main idea" and "following the line I am reading with my finger or my pen" are the most frequently applied strategies of the students. However, the numbers of the strategies employed by social science students are quite a few when compared to science students which will be explained in detail in the next section.

Difference between the use of reading strategies by students in science and social science departments

The findings drawn from the comparison of the reading strategies employed by science and social science students state that science students use more reading strategies than social science students. Besides, the means of the reading strategy use by science students are higher than the means of social science students. In other words, science students predominantly apply reading strategies yet social science students employ them less consistently.

The above mentioned findings about the difference in reading strategies used by science and social science students are in parallel with Sonleitner's (2005) results. In that study, significant differences among the application of reading strategies are found among different majors, too. In addition, the results of this study indicate that there is a significant difference between the utilization of reading strategies by science and social science students. This significant difference is valid for 13 out of 35 strategies addressed in the questionnaire. Furthermore, the reading strategies which are frequently used by science and social science students are very different. For instance, whereas science students employ compensation and cognitive strategies, social science students utilize cognitive and metacognitive strategies the most. This conclusion supports Thampradit's (2006) findings related to science students but it is also a contradiction for social science students since in Thampradit's study cognitive strategies are applied most frequently while metacognitive strategies are employed the least frequently by first year university students.

The conclusions drawn from the present study about the significant difference between the use of reading strategies by science and social science students also support Sarig's (1987) findings. The results of that study also indicate that most of the strategies which are applied during the reading comprehension process are particular to each reader, or that each individual read differently and utilize different combination of strategies.

In conclusion, Shuyun and Munby (1996) note that ESL academic reading is a very deliberate, demanding and complex process in which the students are actively involved in a repertoire of reading strategies. Existing research has shown that, when readers encounter comprehension problems, they use strategies to overcome their difficulties. Different learners seem to approach reading tasks in different ways, and some of these ways appear to lead to better comprehension.

The Correlation between the Reading Strategies of the Students in Science and Social Science Departments in Prep Classes and the Strategies Applied in the Textbook

The analyses of the textbook evaluation and the reading questionnaire reveal that there is not an adequate correlation between the reading strategies of science and social science students and those applied in the textbook. This is due to the fact that the textbook most frequently addresses cognitive strategies which are not most frequently employed by both science and social science students. Besides, the textbook secondly addresses compensation strategies which the science students frequently employ. What is more, the textbook does not include the affective and metacognitive strategies which are applied by science and social science students.

From another perspective, only 6 out of 13 strategies applied by science students are addressed in the textbook and similarly 2 out of 5 strategies which are employed by social science students are promoted in the textbook. Based on these findings, it can be concluded that even though the textbook lacks adequate correlation between the strategies of the students and those promoted in it, it still appeals to science students more than social science students to some extent.

These results are in parallel with the conclusions drawn from some research by Anderson and Armbruster (1984), and Cole and Sticht (1981) in which the textbooks and the texts in them are found inconsiderate and not user-friendly. The findings also support Dawson's (1998) study as it has been concluded that the textbook does not include many types of strategies that the students may frequently apply. These inadequacies result in limiting the quality and quantity of what students learn. This has been particularly problematic in many classrooms where teachers have relied so heavily on their texts to facilitate student learning as stated by Good and Shymansky (1986).

To summarize, as supported by Uslu (2003) and Crandall (1995), a good reading textbook should help students acquire and be aware of strategy learning. Moreover, it

should provide learners with multiple exposures to reading strategies from all strategy types.

Reading Strategies Employed by Girls

The analysis of the reading strategy questionnaire demonstrates that 14 out of 35 strategies are most frequently employed by girls. The most commonly preferred strategy type is cognitive and then compensation, memory and metacognitive strategies. The most commonly used strategy type by girls is "changing reading speed depending on the difficulty of a text" which conflicts with the findings of Young and Oxford's (1997) study which states that males monitor their reading pace more often than females.

Reading Strategies Employed by Boys

The results demonstrate that male students use 11 out of 35 strategies the most frequently. They generally prefer cognitive strategies, and then compensation and memory strategies. The most frequently applied strategies by the males are about solving vocabulary problems which does not support the findings of Young and Oxford's (1997) study which claims that females are good at solving vocabulary problems and use more vocabulary strategies than male students.

Difference between the Use of Reading Strategies and Gender

The findings of the present study suggest that female students employ more reading strategies than their male counterparts. This conclusion supports Starna (1990), Green and Oxford (1995), Goh and Kwah (1997), and Schueller's (1999) study about the difference between the use of reading strategies and gender. On the contrary, the present study is a contradiction to Young and Oxford's (1997) and Brantmeier's (2000) research which claims that there is not a significant difference between strategy use and gender.

In addition, the present study demonstrates that the means of reading strategy use by females are higher than the means of male students. In other words, girls employ reading strategies more frequently than boys. This finding supports Green and Oxford's (1995) study which states that there are significant gender differences in the frequency of the use of specific strategies favoring females.

Still another finding of the present study shows there is a significant difference between the use of specific strategies by male and female students, favoring the females. Although both the males' and females' most frequently applies strategy type is cognitive, they differ significantly in terms of other strategy types. This conclusion is also drawn in Starna's (1990) study who finds out that males and females use different reading strategies and states that research results imply a larger sample of students to be studied to establish more conclusive claims about the relationship between gender and reading which is one of the aims of the present study.

Furthermore, Green and Oxford (1995) find out that men and women differ on nearly one-third of the strategies which include memory, cognitive, metacognitive, affective and social strategies. On all strategies except for three, such differences are constant across proficiency levels, with women using higher levels of them, which is also supported by the present study. Different results are concluded from Goh and Kwah (1997) who found significant differences between males and females in the categories of compensation and affective strategies, yet not in the other four categories. This result conflict with the present study since it is stated that males and females differ in many categories, especially in cognitive strategies. However, regardless of whether or not significant differences are found in each category, females apply more strategies in all of them as Goh and Kwah state.

In the area of strategy training, Schueller's (1999) study also reveals that females get higher scores than males in strategy training and they profit more. This may be due to the fact that, as a lot of research indicates, the frequent use of strategies also affects achievement in reading comprehension. Females tend to use more strategies, thus are more successful than males in reading comprehension.

The research question about the reading strategy use and achievement will be dealt with in the following section.

The Analysis of the Reading Comprehension Test

Difference between the use of Reading Strategies by Science and Social Science Students and their Achievement in Reading Comprehension

The analysis of the reading comprehension test shows that there is a significant difference between the use of reading strategies by science and social science students and their achievement in reading comprehension. Science students are more successful than social science students in reading comprehension. Therefore, it can be concluded that science students who use more reading strategies and employ these strategies more frequently than their social science counterparts, are more successful in reading comprehension than social science students who apply less reading strategies. The higher achievement scores of science students may be due to their more frequent use reading strategies and the effect of textbook as it appeals to science students more than the social science students.

This conclusion about the positive effect reading strategies on achievement in reading comprehension supports many research in literature such as Block's (1986), Sarig's (1987), Barnett's (1988), Cheng's (1998), Bennett's (2003), Phakiti's (2003), Al-Nujaidi's (2003), Kung's (2007), etc. studies all of which state that the more reading strategies the learners employ, the more proficient they become. These studies also emphasize the importance of reading strategy instruction on the readers' achievement of reading comprehension.

On the other hand, the findings of the present research are contradictory with Anderson's (1991) results which indicate that there is not a statistically significant relationship between the number of particular strategies reported and overall comprehension scores on the reading tasks. Similarly, the findings do not support

Campbell and Malicky's (2002) study which reveals that adults at all stages of literacy development are able to make effective use of their knowledge as they read, and that there are few differences in reading strategies used by adults at different levels of reading proficiency.

Pedagogical Implications

The conclusions drawn from the present study show that science and social science students utilize different reading strategies. This finding might be considered by ELT teachers and instructors. They may realize the individual differences of the students, such as gender, department, background knowledge, etc. in the various applications of reading strategies. The study also reveals that science students apply more reading strategies than social science students. Therefore, the teachers may encourage the students at social science departments to use more reading strategies, which emphasizes the importance of the strategy training on students. In addition, gender differences in reading strategy application should be taken into consideration. As a lot of research (Starna (1990), Green and Oxford (1995), Goh and Kwah (1997), Schueller (1999), etc.) states, males always utilize less reading strategies than females. Thus, male students should be encouraged and trained about the importance of strategy use since it leads to better comprehension and achievement.

By understanding the weak or strong points of the students, the teachers may make use of extra and appropriate materials with different teaching methods to develop the weak points of the students and to facilitate their learning. The instructors may also teach more effective strategies since the more strategy the students utilize the more proficient readers they become. Furthermore, the teachers and the instructors may evaluate the reading textbooks which they benefit from and they may add extra activities which can lead to better comprehension; adjust them or even change them. Moreover, the teachers may use different textbook for different departments' students. At the same time, this study may draw the textbook writers' attention to the individual differences in reading strategy employment; thus they may be able to take these into account while developing reading textbooks. As the

findings of the study also reveal, there must be a correlation between the textbook and the strategies of the students if the aim of the syllabus is to improve learning and reading comprehension.

From another point of view, in an attempt to familiarize students with strategies and with efficient use of them, reading strategy questionnaires might provide teachers with an effective, useful and flexible technique for finding out what strategies students employ. Through questionnaires, students' reading strategies can be identified. Besides, students may become aware of their own strategies and also the strategies employed by their classmates from other departments and gender. How much students know about and how much control they have over the strategies can be detected in the classroom through these questionnaires and class discussions, and the conclusions may be considered for more appropriate teaching techniques and procedures. Students already use strategies to understand what they read. What counts, however, is whether students are conscious of the strategies they utilize, and whether they can regulate their strategies to block or to correct comprehension failures. Since strategies such as setting a goal for reading or activating background knowledge positively contribute to reading comprehension, lack of knowledge of these strategies and ability to control and adjust them by students from different departments may result in serious comprehension failures. Thus, defects in planning activities can be identified and suitable techniques to promote strategy utilization may be applied in the classroom. Once deficiencies in reading strategy applications have been identified, a strategy training program can be initiated in the classroom. Students can be trained through types of reading strategies to improve their reading abilities. In addition, students can be taught to take responsibility for their reading behavior through reading strategy instruction.

To summarize, ELT teachers and instructors should be aware of the different strategy use of students. When teachers understand students' reading processes, they can adjust their teaching skills to facilitate reading. Knowledge about students' strategy use and learning preferences by the teachers as well by the students should lead to an increase in student reflection about their individual learning processes.

Hopefully, this will empower students to adopt a more versatile approach to learning not only in the English language classes but in other learning situations as well. In this way the students may develop more confidence and have greater control over their own learning predicaments. In addition, the differences in the use of reading strategies caused by fields of study and gender should be considered while preparing a textbook as the textbooks presumably facilitate and reinforce the learning process. Furthermore, according to students' reading situations, teachers and authors can arrange, refine and expand the appropriate teaching materials and textbooks for the students. Finally, as the finding suggests that the frequent use of reading strategies improves students' achievement in reading comprehension, the teachers can encourage their students to use more and effective reading strategies to promote their reading comprehension.

Suggestions for Further Research

Future studies could include the investigation of the effect of appropriate reading textbook on science and social science students' achievement in reading comprehension. The study may aim at exploring whether the students' success will improve with the use of a textbook which includes various strategy types the students may apply and which appeals to both science and social science students. In addition, an experimental study may be conducted to find out whether science or social science students in two different classrooms benefit more from the reading textbook after being taught for an academic year and taking a proficiency test. Furthermore, research about science and social science students in high schools can be conducted to see whether age is an important factor in affecting reading strategy use and thus achievement. Finally, further research could include reading strategy training to science and social science students to investigate the effect of training on achievement in reading comprehension and to conclude which departments' students make more use of this training.

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APPENDICES

APPENDIX A: READING STRATEGY QUESTIONNAIRE

Reading Strategy Questionnaire (Oxford et al., 2004)

Name:

Department: Gender:

Directions: *Show how often you use the strategy when reading, by checking the appropriate box. 1 means "almost never" while 5 means "almost always".*

Almost never				Almost always
1	2	3	4	5

It is important to answer in terms of how well each statement describes you, NOT in terms of what you think you should do, or what other people do. THIS IS NOT A TEST. There are no right or wrong responses to these statements. The score you obtain will not affect your grade.

Depending on your language learning experience and needs, you may be using different types of strategies. The learning strategies presented here are general. Not everyone needs the same kind of strategies. A "low" score does not mean you are a bad learner.

Before I read a text,

1. I use the title to help predict the contents.	1	2	3	4	5
2. I consider what type of text it is, such as a newspaper article, a scientific paper, or a novel.	1	2	3	4	5
3. I skim it first, and later I read for details.	1	2	3	4	5

While I am reading a text,

4. I pay attention to parts of sentences such as phrases and clauses.	1	2	3	4	5
5. I pay attention to the beginning and the end of each paragraph.	1	2	3	4	5
6. I focus on the tense of a verb, such as present tense and past tense.	1	2	3	4	5
7. I try to understand the meaning of every word in a text.	1	2	3	4	5
8. I translate each sentence into my native language.	1	2	3	4	5
9. I start reading from the first paragraph and read all the way through the last paragraph.	1	2	3	4	5

10. I pay attention to sentence structure, such as subjects and objects.	1	2	3	4	5
11. I continue reading even if I have difficulty.	1	2	3	4	5
12. I change reading speed depending on the difficulty of a text.	1	2	3	4	5
13. I read aloud the difficult parts of a text.	1	2	3	4	5
14. I skip unknown words.	1	2	3	4	5
15. I link the content with what I already know.	1	2	3	4	5
16. I try to understand the meaning of an unknown word by dividing it into parts.	1	2	3	4	5
17. If I don't understand something such as word or phrase, I guess its meaning using clues from the text.	1	2	3	4	5
18. If I don't understand something such as word or phrase, I guess its meaning using information I know about the topic.	1	2	3	4	5
19. I check what each pronoun refers to.	1	2	3	4	5
20. I underline important parts.	1	2	3	4	5
21. I mark important parts, using colored pens or drawing stars.	1	2	3	4	5
22. I go over difficult parts several times.	1	2	3	4	5
23. I read aloud the entire text.	1	2	3	4	5
24. I make a picture in my mind about what the text is saying.	1	2	3	4	5
25. I try to understand the meaning without translating the text into my native language.	1	2	3	4	5
26. If I'm having trouble, I go back to previous sentences.	1	2	3	4	5
27. I follow the line I am reading with my finger or my pen.	1	2	3	4	5
28. I use slashes to divide a sentence grammatically.	1	2	3	4	5
29. When I can not understand a sentence even if I know every word, I skip that sentence.	1	2	3	4	5
30. I predict what will come next.	1	2	3	4	5
31. I pay attention to linking words such as "however" and "besides" so that I can understand the structure.	1	2	3	4	5
32. I write down key words.	1	2	3	4	5
33. I try to figure out the main idea of each paragraph.	1	2	3	4	5
34. I read the comprehension questions first and then read the text.	1	2	3	4	5

After I read a text,

35. I summarize it in my own words.	1	2	3	4	5

Thank You.

APPENDIX B: OKUMA STRATEJİLERİ ÖLÇEĞİ

Okuma Stratejileri Ölçeği (Oxford ve diğer., 2004)

Ad / Soyad:

Bölüm: Cinsiyet:

Yönerge: *İngilizce bir metni okurken ne kadar sıklıkla strateji kullandığınızı uygun numarayı yuvarlak içine alarak gösteriniz. 1 "hemen hemen hiç" anlamındayken 5 "hemen hemen daima" anlamına gelmektedir.*

Hemen hemen hiç				Hemen hemen daima
1	2	3	4	5

İfadeleri, sizin ne yapmanız gerektiği ya da başka insanların ne yaptıklarına göre DEĞİL, her bir ifadenin sizi ne kadar iyi anlattığına göre seçmeniz önemlidir. BU BİR SINAV DEĞİLDİR. Aşağıdaki ifadelerin doğru ya da yanlış cevabı yoktur. Elde ettiğiniz puan ders notlarınızı hiçbir şekilde etkilemeyecektir.

Dil öğrenme tecrübeleriniz ve ihtiyaçlarınıza göre farklı stratejiler kullanıyor olabilirsiniz. Burada sunulan stratejiler genel stratejilerdir. Herkesin aynı türde stratejilere ihtiyacı olmayabilir. "Düşük" bir puan kötü bir dil öğrencisi olduğunuz anlamına gelmez.

Bir metni okumadan önce,

1. Metnin içeriğini tahmin etmek için konu başlığını kullanırım.	1	2	3	4	5
2. Ne çeşit bir metin olduğunu (gazete makalesi, bilimsel yazı, hikaye, vb.) göz önünde bulundururum.	1	2	3	4	5
3. Metni önce ana hatlarıyla okurum daha sonra geri döner detaylı bir şekilde okurum.	1	2	3	4	5

Bir metni okurken,

4. Cümlelerin içindeki sözcük grubu(phrase) ve yan cümlecik (clause) gibi parçalara dikkat ederim.	1	2	3	4	5
5. Her bir paragrafın başlangıç ve sonunu dikkatlice okurum.	1	2	3	4	5
6. Fiillerin zamanlarına dikkat ederim (geniş zaman, geçmiş zaman,vb.)	1	2	3	4	5
7. Metindeki her kelimenin anlamını kavramaya çalışırım.	1	2	3	4	5
8. Metindeki her cümleyi Türkçe'ye çeviririm.	1	2	3	4	5
9. Okumaya birinci paragraftan başlayıp metni sonuna kadar okurum.	1	2	3	4	5

10. Cümle yapılarına (özne, nesne, vb.) dikkat ederim.	1	2	3	4	5
11. Okurken zorluk yaşasam da okumaya devam ederim.	1	2	3	4	5
12. Okuma hızımı, metnin zorluk derecesine göre değiştiririm.	1	2	3	4	5
13. Metnin zor bölümlerini yüksek sesle okurum.	1	2	3	4	5
14. Metnin içindeki bilmediğim kelimeleri atlarım.	1	2	3	4	5
15. Metnin içeriğiyle o konuyla ilgili önceden bildiklerim arasında bağlantı kurarım.	1	2	3	4	5
16. Bilmediğim bir kelimenin anlamını kelimeyi parçalarına bölerek anlamaya çalışırım.	1	2	3	4	5
17. Bir sözcük ya da sözcük grubunu (phrase) anlamadığım zaman, metindeki ipuçlarını kullanarak anlamını tahmin ederim.	1	2	3	4	5
18. Bir sözcük ya da sözcük grubunu (phrase) anlamadığım zaman, metnin konusuyla ilgili bildiklerimi kullanarak anlamını tahmin ederim.	1	2	3	4	5
19. Her bir zamirin (pronoun) neyi kastettiğini kontrol ederim.	1	2	3	4	5
20. Önemli yerlerin altını çizerim.	1	2	3	4	5
21. Önemli yerleri renkli kalem kullanarak ya da yanına yıldız çizerek işaretlerim.	1	2	3	4	5
22. Metnin zor bölümlerini birkaç kere gözden geçiririm.	1	2	3	4	5
23. Bütün metni sesli bir biçimde okurum.	1	2	3	4	5
24. Metinde anlatılanları kafamda canlandırmaya çalışırım.	1	2	3	4	5
25. Metni Türkçe'ye çevirmeden anlamaya çalışırım.	1	2	3	4	5
26. Anlamakta zorluk çekersem önceki cümlelere dönerim.	1	2	3	4	5
27. Okumakta olduğum satırı parmağımla ya da kalemle takip ederim.	1	2	3	4	5
28. Bir cümleyi gramer kurallarına göre parçalarına ayırmak için çizgiler (/) çizerim.	1	2	3	4	5
29. İçindeki bütün kelimeleri bilmeme rağmen bir cümleyi anlamadıysam, o cümleyi atlarım.	1	2	3	4	5
30. Metinde daha sonra neler anlatılacağını tahmin ederim.	1	2	3	4	5
31. "*Buna rağmen*" ve "*bunun yanında*" gibi bağlaçlara dikkat ederim, böylece cümlenin yapısını anlayabilirim.	1	2	3	4	5
32. Anahtar kelimeleri yazarım.	1	2	3	4	5
33. Metindeki her bir paragrafın ana fikrini çıkarmaya çalışırım.	1	2	3	4	5
34. Önce soruları okuyup sonra metni okurum.	1	2	3	4	5

Bir metni okuduktan sonra,

35. Metni kendi cümlelerimle özetlerim.	1	2	3	4	5

Anketi cevaplandırdığınız için teşekkür ederim.

APPENDIX C: READING COMPREHENSION TEST

READING COMPREHENSION TEST

Name: Class:
Read the passages and answer the related questions.

Ever since Nobel Prize owner Dr. L. Pauling first advocated vitamin C as a common-cold war weapon about 20 years ago, researchers have been busy trying to confirm that claim._____ , up to now, they have found little evidence that vitamin C prevents colds, in fact, there are more studies that say it doesn't, but there is evidence that it can keep coughing and sneezing to a minimum, and that low levels of vitamin C in the body may be related to bronchitis.

1. Which sentence best summarizes the text?
Dr. Paulings's view concerning vitamin C _____.
a) aroused very little interest among medical exports
b) has caused a revolution in medical studies
c) has greatly improved the treatment of bronchitis
d) was based on the results of years of research
e)has not been proved scientifically

2. According to the text, coughing and sneezing _____.
a) are now being effectively treated without vitamin C
b) are the early symptoms of bronchitis.
c) should be taken seriously and treated accordingly
d) can be reduced to a minimum with the help of vitamin C
e) do not respond to any treatment whatsoever

3. Which connector can be put in the blank?
a) In addition b) Although c) Apart from d) However
e) Furthermore

4. "confirm" means:
a) prove b) appeal c) deny d) improve e) recommend

5. "it" means:
a) claim b) common-cold c) evidence d) weapon e) vitamin C

Have you ever wondered whether fishes drink or not? All living things must drink, and they require a fresh supply of water often. A person can go without food for many days, but he or she cannot go for long without water. Fishes drink, and fishes that live in salt water must drink salt water. _____ , when we watch them in an aquarium and see them opening and closing their mouths, we must not assume that they are drinking. Fishes need water for its oxygen. The water that they seem to be gulping gives them oxygen, which is in the water. On the other hand, when a fish drinks, it swallows water, just in the way we do.

6. It is stated in the passage that a fish opens and closes its mouth _____.
a) in order to get oxygen
b) so as to gulp
c) to drink to stay alive
d) to swim in an aquarium
e) so that it can suffice salt

7. Which connector can be put in the blank?
a) Despite b) However c) Finally d) Moreover e) Even though

8. When a fish drinks water, _____
a) it requires fresh water
b) it swallows water just like us
c) it requires salt water
d) it drinks water for its oxygen
e) it stays motionless for a while to swallow

9. The main idea of the passage is:
a) Fishes use water not only for its oxygen but also for a drink
b) A person can go long without food but not without water
c) Fishes swallow water just like people do
d) Fishes in aquarium use water for its oxygen
e) Fishes in the salt water gulp to use it as a drink

10. “assume” means:
a) wonder b) understand c) feel d) think e) conclude

Researchers suggest that there are creatures that do not know what light means at the bottom of the sea. They don't have either eyes or ears; they can only feel. There is no day or night for them. There are no winters, no summers, no sun, no moon, and no stars. It is as if a child spent its life in darkness in bed, with nothing to see or hear. How different our own life is! Sight shows us the ground beneath our feet and the heavens above us - the sun, moon, and stars, shooting stars, lightning, and the sunset. It shows us day and night. We are able to hear voices, the sound of the sea, and music. We feel, we taste, we smell. How <u>fortunate</u> we are!

11. Judging from the passage, we can say that this story is mainly about _____
a) life of sea creatures at the bottom of the sea
b) how changes in the seasons are perceived by the deep-sea creatures
c) how wonderful our lives were and will be
d) the differences among creatures of the earth and those of the sea
e) the superiority of human beings over some creatures in terms of senses

12. We can infer from the passage that the writer is _____
a) curious about the creatures
b) worried about people
c) grateful about his life and body
d) happy with the child in darkness
e) upset about all the creatures

13. The topic of this passage is:
a) how people see and feel
b) how fortunate people are comparing to creatures
c) how creatures see, hear and feel
d) the research about people and creatures
e) the similarities between people and creatures

14. The antonym (opposite) of “fortunate” is
a) unhappy b) irresponsible c) unlucky d) dishonest e) ungrateful

15. The best title for this passage is:
a) The importance of sight
b) The creatures in the sea
c) The significance of life
d) How creatures feel
e) The difference of life

Official records state that the Pueblo Indians lived in New Mexico and Arizona . The word "Pueblo" comes from the Spanish word "pueblo," meaning town or village. The Spaniards found these Indians living in apartment houses, some of them on the side of a cliff in order that they could be reached only by ladders. Whenever they were attacked by Apaches, the Pueblos would pull up the ladders. They grew corn, which they watered with water flowing down in ditches. Also they are generous. They share these corns with their neighbors. They wove cloth, made wonderful baskets, and created jars and pots out of clay proving how skilful they were at handcraft.

16. From the passage we understand that the Pueblo Indians were afraid of _____
a) cliff dwelling
b) Apache Indians
c) apartment houses
d) water flowing down the ditches
e) solitary life

17. The antonym for “generous” is:
a) scared b) hardworking c) lazy d) mean e) brave

18. The Pueblo Indians lived on the side of a cliff _____

a) although they had apartment houses
b) to observe the stars in the sky for rain season
c) so that they could provide themselves with shelters
d) and they didn’t have a lake, a stream, or a pond
e) as long as they were all together

19. “them” refers to:
a) Apaches
b) ladders
c) Pueblo Indians
d) apartment houses
e) Spaniards

20. The best title for this passage is:
a) Where Indians come from
b) The hand-crafts of Pueblos
c) The products of Indian Pueblos
d) The attack of Pueblos by Apaches
e) Some information about Indian Pueblos

GOOD LUCK!

ANSWER KEY

1. E
2. D
3. D
4. A
5. E
6. A
7. B
8. B
9. A
10. D
11. E
12. C
13. B
14. C
15. A
16. B
17. D
18. C
19. C
20. E

APPENDIX D: UYGULAMA İZİN BELGESİ

T.C.
DOKUZ EYLÜL ÜNİVERSİTESİ
YABANCI DİLLER YÜKSEKOKULU MÜDÜRLÜĞÜ

Sayı : : B.30.2.DEÜ.0.Y4.03.00.71.00/ 406 11.3.2010
Konu:

REKTÖRLÜK MAKAMINA

İLGİ: a- 27 Ekim 2010 Tarih ve B.30.2.DEÜ.0.70.72.01./504-02105 Rektörlük sayılı Makamı yazısı

b- 19 Şubat 2010 Tarih ve B.30.2.DEÜ.0.71.00/1895-259 sayılı yazımız.

İlgi yazınızda İngiliz Dili Okutmanı Zahide Sezin ERTEKİN 'in "A Study on the Use of Reading Strategies by Students in Science and Social Science Departments " konulu tez çalışması kapsamında uygulama yapma isteği Yüksekokulumuz tarafından uygun görülmüştür.

Bilgilerine arz ederim.

Yrd.DoçDr.Kadim ÖZTÜRK
Yüksekokul Müdürü

Dokuzçeşmeler Kampüsü,
B Blok 35160
Buca / İZMİR / TÜRKİYE
Tel & Fax : +90 (232) 420 44 25

E-Posta: yabancidiller@deu.edu.tr
Web Sitesi: www.ydy.deu.edu.tr

APPENDIX E: PERMISSION FOR READING STRATEGY QUESTIONNAIRRE

Görüntülenen Klasör: Gelen Kutusu | **Oturumu Kapat**

Mesaj Yaz **Adresler** **Klasörler** **Seçenekler** **Ara** **Yardım** **Takvim** | **SquirrelMail**

Mesaj Listesi | **Sil** **Önceki** | **Sonraki** **İlet** | **Eklenti Olarak İlet** | **Yanıtla** | **Tümünü Yanıtla**

Konu:	**Re: Yüksek lisans teziniz, okuma stratejileri anketi**
Gönderen:	**uzpinar@metu.edu.tr**
Tarih:	**21 Nisan 2009, Salı, 2:10 pm**
Alıcı:	**sezin.ulusan@deu.edu.tr**
Öncelik:	**Normal**
Seçenekler:	**Tüm Başlıkları Göster** | **Yazdırılabilir Şekilde Göster**

Merhabalar,

Kusura bakmayın bır suredır maıllerıme bakamadıgım ıcın bu kadar gec cevap yazabılıyorum.Anketı tabı kı kullanabılırsınız. Umarım ısınıze yarar. Kolay gelsın..

Pınar BOKE

> İyigünler Pınar Hanım,
>
> Ben Zahide Sezin Ertekin. İzmir Dokuz Eylül Üniversitesi Yabancı
> Diller Yüksekokulu'nda İngiliz dili okutmanı olarak
> çalışmaktayım. Dokuz Eylül Üniversitesi İngilizce Öğretmenliği
> bölümünde de doktora yapıyorum.
> Tezim okuma stratejileriyle ilgili. Eğer izin verirseniz sizin
> Bilkent Üniversitesi'nde hazırladığınız tezinizde kullandığınız
> Rebecca Oxford'a dayalı olan Tükçe okuma stratejileri anketini,
> DEÜ Yabancı Diller hazırlık
> sınıfı öğrencilerine uygulamak ve tezimde kullanmak istiyorum.
>
> Cevabınızı sabırsızlıkla bekliyor, çalışmalarınızda kolaylıklar
> diliyorum.
>
> Z. Sezin Ertekin
> 0232 4204425-159
>

Bunu dosya olarak indir

APPENDIX F: INFORMED CONSENT FORM

INFORMED CONSENT FORM

Dear students,

My name is Z. Sezin Ertekin and I am a PhD student of TEFL Program at Dokuz Eylül University. I am conducting a study about the use of reading strategies by science and social science students in prep classes. The following questionnaire is designed for this study. I would appreciate it if you can answer the questions in the following questionnaire. Another version of this questionnaire will be distributed some of you again later this term.

Your responses to the items in the questionnaire will not have any positive or negative effect on your course grade. Your name is required on the questionnaire in order to keep track of individual students. However, all data collected through your responses will remain anonymous. Your identity will not be revealed in any report derived from this study.

Please read the questions carefully and answer all of them. Your answers will contribute to my study. Thank you for your participation.

Z. Sezin Ertekin
PhD TEFL Program
Dokuz Eylül University
İzmir

I have read and understood the above and agree to participate in this study.

Name:
Signature:
Date:

APPENDIX G: BİLGİ VE KABUL FORMU

BİLGİ VE KABUL FORMU

Sevgili Öğrenciler,

Adım Z. Sezin Ertekin ve Dokuz Eylül Üniversitesi Yabancı Diller Öğretimi İngilizce Öğretmenliği Doktora Programında öğrenciyim. Hazırlık sınıflarında okuyan fen ve sosyal bilimler öğrencilerinin kullandıkları okuma stratejileri üzerine bir araştırma yapıyorum. Elinizdeki anket bu araştırma için hazırlanmıştır.

Anketteki soruları cevaplarsanız memnun olurum. Bu anketin başka bir versiyonu bu dönem içinde bazılarınıza tekrar dağıtılacaktır. Anketteki ifadelere verdiğiniz cevapların ders notlarınıza hiçbir etkisi olmayacaktır. Anketi cevaplarken adınız istense de, bu yalnızca verdiğiniz cevapları başarı testinizdeki cevaplarınızla karşılaştırmak içindir. Kimliğinizle ilgili hiçbir bilgi bu araştırma sonunda hazırlanan hiçbir raporda kullanılmayacaktır. Ders öğretmeniniz dahil kimse verdiğiniz cevaplarla birlikte adınızı bilmeyecektir.

Lütfen soruları dikkatlice okuyun ve hepsini cevaplayın. Cevaplarınız araştırmaya katkıda bulunacaktır. Katılımınız için teşekkür ederim.

Z. Sezin Ertekin
İngilizce Öğretmenliği Doktora Programı
Dokuz Eylül Üniversitesi
İzmir

Bu formdaki bilgileri okudum ve araştırmaya katılmayı kabul ediyorum.

Adı ve Soyadı:
İmzası:
Tarih: