INVESTIGATING THE USE OF DISCOURSE STRUCTURE-BASED GRAPHIC ORGANIZERS IN READING INSTRUCTION

A Master's Thesis

by

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The Department of
Teaching English as a Foreign Language
Bilkent University
Ankara

July 2010

To my beloved family,

INVESTIGATING THE USE OF DISCOURSE STRUCTURE-BASED GRAPHIC ORGANIZERS IN READING INSTRUCTION

Graduate School of Education
of
Bilkent University

by

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ABSTRACT

INVESTIGATING THE USE OF DISCOURSE STRUCTURE-BASED GRAPHIC ORGANIZERS IN READING INSTRUCTION

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This study investigated the effectiveness of discourse structure-based graphic organizers on intermediate level EFL students' reading comprehension of selected texts. The purpose of the study was to determine whether students who used discourse structure-based graphic organizers as a post-reading activity would perform better on post-test summaries compared to those who were involved in a discussion as a post-reading activity. This study also explored the attitudes of students towards the use of discourse structure-based graphic organizers in reading instruction.

Two intact intermediate-level EFL classes at Uludağ University School of Foreign Languages participated in the study. The data were collected through the administration of four post-test summaries and a questionnaire that was in a Likert-scale format.

The statistical analysis of the post-test scores revealed that the students who completed discourse structure-based graphic organizers as a post-reading activity

performed significantly better in the post-test summaries of the four selected texts than the students who participated in discussion as a post-reading activity. The analysis of the participant students' responses to the attitude questionnaire showed that the students had mixed attitudes towards the utilization of discourse structure-based graphic organizers in reading instruction.

Key words: Discourse structures, spatial graphic displays, discourse structure-based graphic organizers.

ÖZET

OKUMA EĞİTİMİNDE PARÇALARIN ANA FİKİR YAPILARINI YANSITAN GRAFİK ORGANİZATÖRLERİN KULLANIMI

Sedef Akgül

Yüksek Lisans, Yabancı Dil Olarak İngilizce Öğretimi Bölümü
Tez Yöneticisi: Yrd. Doç. Dr. JoDee Walters

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Bu çalışma, metnin ana fikir yapısını ve esas söylemini baz alan grafik organizatörlerin, seçilmiş okuma parçaları üzerinde çalışan orta düzeye sahip İngilizce öğrencilerinin, okumadaki kavrayışlarına olan etkilerini araştırmak için yapılmıştır. Bu çalışmanın amacı okuma sonrası aktivitesi olarak grafik organizatörleri dolduran öğrencilerin, okuma sonrası parçadaki fikirleri tartışan öğrencilere nazaran, okuma parçası özeti çıkarma testinde daha iyi performans sergileyip sergileyemeyeceklerini görmekti. Bu çalışmanın diğer bir amacı da öğrencilerin okuma eğitiminde bu tür grafik organizatörlerin kullanımına karşı olan tutumlarını anlayabilmekti.

Bu çalışmada Uludağ Üniversitesi Yabancı Diller Yüksekokulu'nda eğitim gören orta düzeyde İngilizce bilgisine sahip iki sınıf yer almıştır. Bu çalışmadaki veri her öğrenciye okuma sonrası testi olarak uygulanan dörder özet ve öğrenci tutumunu ölçen Likert skalasını esas alan anket uygulamasından gelmektedir.

Uygulama sonrası elde edilen test skorlarının istatistiksel analizi göstermiştir ki okuma sonrası grafik organizatörler dolduran öğrenciler, söz konusu olan dört

parçanın özetinde, tartışma içinde yer alan öğrencilere kıyasla istatistiksel olarak anlamlı bir başarı düzeyi sergilemişlerdir. Katılımcı öğrencilerin tutum anketine verdikleri yanıtların analizi ise öğrencilerin okuma eğitiminde grafik organizatör kullanımına karşı karışık tavırları olduğunu göstermiştir.

Anahtar kelimeler: Metin yapıları, uzaysal grafik gösterim, grafik organizatörler.

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CHAPTER 1- INTRODUCTION

Introduction

In both L1 and L2 contexts, reading is an essential skill to master for students. In formal educational settings, critical importance is attached to reading because students' success mostly depends on their reading comprehension skills (Jiang, 2007). Most of the input students are exposed to is in written form and this necessitates that they develop effective reading strategies. In an L2 situation, students should be provided with special attention because reading in L2 is naturally more challenging and demanding than reading in L1 (Jiang, 2007).

In Turkey, English is used as a medium of instruction in academically prestigious universities. What is more, most of the state universities are making an effort to offer specific content area classes in English. To exemplify, in Uludağ University, where this study was conducted, 30 percent of the classes in various departments are offered in English. It can be claimed that tertiary level students in Turkey are required to read large amounts of informative texts to follow their classes and to pursue academic success. Reading to learn from texts makes certain demands on students such as making use of their background knowledge, identifying the interrelatedness of main ideas and supporting details, distinguishing facts from opinions, being able to make inferences, and understanding the writer's tone or purpose (Grabe, 2009; Jiang & Grabe, 2007).

In order to scaffold EFL learners in their approach to reading tasks, the discourse structures of reading passages might be exploited. Since focusing on discourse structures facilitates following the flow of ideas in a text in an effective

manner, teachers might guide their students to be alert to text structures and text organization. Findings of the studies in the literature help to justify the rationale behind this strategy. It has been found that knowing about text organization and reading comprehension skills are positively inter-related. Another strategy to use in reading instruction is to provide students with visual support. Visual support has the capacity to enhance the effectiveness of linguistic input. Using discourse structure-oriented graphic organizers in reading instruction is a product of the aforementioned two arguments. Cleverly-designed graphic organizers that reflect text structures might serve different purposes in the classroom environment. First of all, they set a purpose for reading. Secondly, through their use teachers can encourage their students to deal with the reading text under focus in a meaningful and active way by trying to pinpoint the text structures. One way of looking at graphic organizers is to see them as the skeleton of the text. Once the skeleton is available, the rest of the task becomes easier.

This study aims to investigate the effectiveness of discourse structure-based graphic organizers on EFL students' reading comprehension of selected texts at the School of Foreign Languages at Uludağ University. It also aims to examine the attitudes of students towards graphic organizers as instructional resources. The findings may be of benefit to classroom teachers in helping them decide whether or not to include discourse structure-based graphic organizers in their reading instruction.

Background of the Study

In today's world, being able to read in a proficient manner in both L1 and L2 is of utmost importance because we are bombarded with print everywhere we go.

The ultimate aim for readers is to understand what information the writer has intended to convey in the specific context they encounter. However, it should not be forgotten that there exist some prerequisites to achieve this, such as exploiting some background knowledge, recognizing main ideas and supporting details, and pinpointing connections between relevant information. Only in this way can readers form meaningful representations of the text content in their minds (Grabe, 2009).

It might be simplistic to think of a text as comprising only linguistic elements such as semantics and syntax. Structure, pragmatic nature, intentionality, content and topic have roles to play in the reconstruction of the intended meaning of the author by the reader (Bernhardt, 1998). Grabe (2009) highlights the importance of discourse structure awareness in relation to this reconstruction of meaning. Discourse structures are viewed as "knowledge structures, text structures or basic rhetorical patterns in texts" (Grabe, 2003, as cited in Jiang & Grabe, 2007, p. 36). In this thesis, discourse structures and text structures will be used interchangeably. An understanding of these top-level structures might be associated with having an insight into the inter-relatedness of ideas in a text and forming a correct interpretation of what the writer has set out to express (Jiang & Grabe, 2007). Skilled readers of L1 and L2 with discourse structure sensitivity are alert to the specific ways in which information is organized and identify the signaling mechanisms for this, as well as able to distinguish main ideas from the minor ones as they read. Moreover, they use their text structure knowledge to guide their comprehension, which in return equips them with an organized, a coherent and a more global understanding of the text (Grabe, 2009). However, not all EFL readers are proficient enough to perform such a challenging task without outside intervention and support. Taking this observation

into consideration, it makes sense in EFL settings to make use of graphic organizers in order to provide a visual scaffold for text organization and foster reading comprehension.

Graphic organizers are defined as "visual and spatial displays designed to facilitate the teaching and learning of textual material through the use of lines, arrows and a spatial arrangement that describe text content, structure and key conceptual relationships" (Darch & Eaves, 1986, as cited in Kim, Vaughn, Wanzek, & Wei, 2004, p. 105). In educational settings, they have been perceived as valuable instructional tools because "a good graphic representation can show at a glance the key parts of a whole and their relations, thereby allowing a holistic understanding that words alone cannot convey" (Jones, Pierce, & Hunter, 1989, as cited in Jiang & Grabe, 2007, p. 34). Since there is a manageable number of repeating patterns (description, definition, sequence, procedure, cause-effect, classification, comparison-contrast, problem-solution) in expository texts, they lend themselves to being used along with graphic organizers to direct students' attention to text structures and help to enhance reading comprehension (Grabe, 2009; Jiang & Grabe, 2007).

A review of recent articles indicates that the use of spatial graphic representation of textual information in the construction of reading activities is likely to create positive results in terms of increased comprehension, and the employment of a greater number of strategies (Kools, Van De Wiel, Ruiter, Crüts, & Kok, 2006; Lin & Chen, 2006; Suzuki, 2006; Suzuki, Sato, & Awazu, 2008). The findings of these studies show that graphical displays can reduce the cognitive burden on students because of their two-dimensional spatial arrangement. On the basis of the

findings of a very recent study, Liu, Chen and Chang (2010) claimed that graphic representation of information in a text narrowed the reading proficiency gap between good and poor readers and boosted EFL learners' confidence in learning to read in English. Tang (1992) investigated the effect of graphic representation of the knowledge structure of classification on reading comprehension. In this study, the majority of the subjects were positive about using a graphic organizer and they brought up the idea that it helped comprehension. In the same vein, Jiang (2007) carried out a longitudinal large-scale study which aimed at understanding the possible effects of graphic organizer completion on reading comprehension skills. Jiang (2007) found that graphic organizer instruction which lasted for 16 weeks caused a significant improvement in Chinese EFL students' reading comprehension. The analysis of the participant students' responses to the short attitude survey, which was given at the end of the instruction period, revealed that the students held positive attitudes towards the use of graphic organizers in reading instruction. Another study by Carrell, Pharis and Liberto (1989) had similar findings in terms of the subjects' reaction to graphic organizers. The effect of visual representation of knowledge has also been explored in content area instruction. Stull and Mayer (2007) found out that the integration of graphic organizers into scientific texts helped students in transferring their understanding of content to problem solving-based tasks.

Another line of research has been concerned with the link between L2 readers' text structure awareness and their reading comprehension. A study conducted by Wang and Cao (2009) has provided empirical evidence for the assumption that structure awareness has a positive effect on the quality and quantity of information recalled after reading. In the same vein, Chung (2000) explored the

link between increasing students' awareness of signaling mechanisms of coherence and cohesion in discourse organization and their reading performance and found evidence in favor of it. Martinez (2002) found that when readers were alert to the structure of the text and used it to scaffold their recall, the knowledge of structure had a positive effect on reading comprehension and reproduction of information present in a text.

Statement of the Problem

Studies in the literature have highlighted the link between drawing students' attention to discourse structures in texts and facilitating reading comprehension (Bernhardt, 1998; Carrell, Devine, & Eskey, 1996; Grabe, 2009; Grabe & Stoller, 2002; Jiang & Grabe, 2007; Urquhart & Weir, 1998). One line of research involves the direct impact of text structure awareness on students' reading comprehension (Carrell, 1984, 1985; Martinez, 2002; Wang & Cao, 2009). A second line of research looks into the link between reading comprehension and the use of various types of visual representations such as semantic maps, tree diagrams, concept maps, and hierarchical summaries (Carrell, et al., 1989; Kools, et al., 2006; Liu, et al., 2010; Suzuki, 2006; Suzuki, et al., 2008; Tang, 1992). However, the possible effects of the use of discourse structure-based graphic organizers on L2 learners' reading comprehension is in need of exploration. With the exception of Tang (1992) and Jiang (2007), very few empirical studies have been conducted in this area. There is a need for further research in order to broaden and deepen our understanding of the role of discourse structure-oriented graphic organizers in reading instruction. The purpose therefore of this study is to explore the link between using discourse structure-based graphic organizers as a post-reading activity and EFL students'

reading comprehension of selected texts. The present study also aims at examining students' attitudes towards their exposure to discourse structure-based graphic organizers in reading instruction.

In the School of Foreign Languages at Uludağ University, I have observed that students display difficulties in actively engaging with the text as they read. Identifying the key concepts in the text and recognizing the inter-relatedness of major and minor ideas is problematic at times because they do not know what parts of the text to look at to form relevant connections. They might waste time focusing on unimportant details and might fail to come up with a global picture of the text in hand. They are not aware of the fact that there are different but repeating discourse patterns in the texts they are exposed to so they cannot develop an understanding of how to approach text structures. It is clear that they need some guidance in this respect. Discourse structure-based graphic organizers might scaffold the students in their approaches to reading tasks.

Research Questions

This study will investigate the following research questions:

1. How does the use of discourse structure-based graphic organizers affect students' reading comprehension of selected texts?

2. What are students' attitudes towards the use of discourse structure-based graphic organizers in reading instruction?

Significance of the Study

Although the field has seen a considerable amount of research conducted on the link between discourse structure awareness and reading comprehension, as well as the relationship between using visual representations of textual information and

reading performance, none has explored the effectiveness of discourse structure-based graphic organizers in reading instruction in a Turkish EFL context before. The results of this study will fill a gap in the literature and provide empirical evidence for the effectiveness of discourse structure-based graphic organizers on students' reading comprehension of selected texts. This study will also reveal students' attitudes towards the use of discourse structure-oriented graphic organizers. At the local level, this study has set out with the aim of discovering whether the use of discourse structure-based graphic organizers will affect the reading comprehension of the students at Uludağ University. The findings of the study may help the teachers of Uludağ University to restructure their reading activities. The results of the study are likely to be significant not only for the teachers in my institution, but also for teachers in other institutions in Turkey as well as text-book developers. They might or might not decide to incorporate graphic organizers into the designs of the text-books they develop on the basis of the findings of this study.

Conclusion

In this chapter, the background of the study, statement of the problem, research questions, and significance of the problem have been discussed. The next chapter reviews the literature on reading by discussing the models of the reading process, schema theory, reading in the first and second languages, as well as synthesizing the literature on discourse structure awareness, and graphically (visually) representing information. In the third chapter, the research methodology, including the participants, materials and instruments, data collection and data analysis procedures, is presented. In the fourth chapter, data analysis procedures and

findings are presented. The fifth chapter discusses the findings, pedagogical implications, limitations of the study, and suggestions for further research.

CHAPTER 2 – REVIEW OF THE LITERATURE

Introduction

This study set out to investigate the effectiveness of discourse structure-based graphic organizers on students' reading comprehension of selected texts. It also examined the attitudes of students towards the use of discourse structure-based graphic organizers. This chapter will first focus on the importance, definition and nature of reading and then it will proceed to synthesize the literature on reading by discussing the models of the reading process, schema theory and reading in the first and second languages. In the following sections, this chapter will highlight discourse structure awareness, graphically (visually) representing information and graphic organizers along with the related bodies of research.

Importance, Definition and Nature of Reading

It is a well-accepted fact that reading is of utmost importance. In our modern world, where we are inundated by print, being a good reader is a prerequisite to deal with large amounts of information that is made available to us. In short, possessing reading skills is a means of survival. However, being a skilled L1 reader is not enough to be an active and successful participant of society. If one is to pursue a career and achieve advancement, L2 reading skills constitute a significant challenge. Therefore, a very large percentage of people around the world are encouraged to learn to read a second language as students in formal academic settings. Most school systems around the world demand that their students learn English because it is a global language that could guarantee the capacity for economical and professional competition (Grabe, 2009).

Reading has varying definitions and interpretations in the literature. Aebersold and Field (1997) define reading as "what happens when people look at a text and assign meaning to the written symbols in that text" (p. 15). Grabe and Stoller (2002) add one more component into this definition. In their interpretation, reading comes forward as "the ability to draw meaning from the printed page and interpret the information appropriately" (p. 9). However, these definitions fail to reflect the complex nature of reading. A more comprehensive viewpoint is necessary if we are to fully define what reading is. Grabe (2009) claims that in order to appropriately define what reading is, one needs to clarify the characteristics of reading by fluent readers. Under the umbrella of Grabe's (2009) interpretation, the true definition of reading comprises some salient characteristics which could be observed in the act of reading performed by fluent readers. Firstly, reading is a rapid and efficient process which aims at comprehending; that is, understanding what the writer has intended to convey in writing. Reading is also interactive in the sense that it is an interaction between the writer and the reader. Another feature of reading is its strategic nature because a reader has to employ a number of skills and processes to anticipate text information, select key information, and organize and mentally summarize information (Grabe, 2009). Reading is at the same time a flexible process. A fluent reader adjusts his or her reading processes and goals to the shifting purposes and interests in reading. The evaluative quality of reading stems from the fact that it is combined with readers' attitudes and emotional responses to the text as well as a strong set of inferencing processes and the use of background knowledge. Apart from the aforementioned qualities, reading is inherently a linguistic process because the

processing of linguistic information is central to reading comprehension. Finally, all reading activity is a learning process in one sense or another (Grabe, 2009).

In order to gain a comprehensive understanding of reading, it is important to dwell on the nature of reading. When people read, they read for a purpose and this purpose is usually determined by the genre of what they are reading. To exemplify, people do not read newspapers in the same way they read research articles (Grabe & Stoller, 2002). Grabe and Stoller (2002) highlight seven purposes for reading, which include reading to search for simple information, reading to skim quickly, reading to learn from texts, reading to integrate information, reading to write, reading to critique texts and reading for general comprehension.

According to Schramm (2009), good readers of a foreign language have clear goals in their minds concerning the reading process. They define their goals before starting the reading process and activate their pre-knowledge accordingly. They also think about what the author's goal is and observe the steps the author takes. If some parts of the text are not likely to help them in reaching their reading goals, they skim or skip those sections. In addition to employing the aforementioned strategies, they are alert to the ideas that seem unrelated to other ideas in the text. If, in the end, they decide that these ideas seem relevant, they spend more time to question their connections to the text.

Good readers of a language activate two kinds of processes while reading. These are lower-level and higher-level processes. While the lower-level processes are more automatic linguistic processes and are typically seen as skills-directed, the higher-level processes generally require comprehension processes that make use of the reader's background knowledge and inferencing skills (Grabe & Stoller, 2002).

Lower-level processes include lexical access, syntactic parsing, semantic proposition formation and memory activation. In lexical access, the reader focuses on a word and recognizes its meaning in an automatic way. If the ultimate aim in reading is to achieve comprehension, then the importance of word recognition cannot be underestimated. Grabe and Stoller (2002) use a metaphor to explain the relation between word recognition and reading comprehension. Word recognition is "like the gasoline of the car which is made up of reading comprehension skills" (Grabe & Stoller, 2002, p. 22). Syntactic parsing makes it possible for the readers of a language to clarify the meanings of words that have different meanings in different contexts (Grabe & Stoller, 2002). Readers combine words in order to derive basic grammatical information and support clause-level meaning. Grabe and Stoller (2002) view semantic proposition as the task of putting together word meanings and structural information in order to form basic clause-level meanings. When the aforementioned processes are operating well, they work together effortlessly in working memory, which is best understood as "the network of information and related processes that are being used at a given moment" (Grabe & Stoller, 2002, p. 24). Grabe and Stoller (2002) liken the working memory to the "engine of the car which is called reading comprehension" (p. 25). In a study carried out by Walter (2004), L2 readers' ability to build well-structured mental representations of texts was linked to the development of working memory in L2.

Higher-level processes related to reading include the text model of comprehension, the situation model of reader interpretation, background knowledge use, and inferencing and executive control processes. One of the salient higher-level processes is the text model of reading comprehension. During the processing of text

information, the reader starts to see the ideas that are repeatedly used and that facilitate useful linkages to other information as the main ideas of the text. In short, the text model amounts to an internal summary of the ideas present in a text. In this model of comprehension, attempts are made by the reader to link the main idea from the first sentence to the one emerging in the second one, while the less important ideas get "pruned off" in the process (Grabe & Stoller, 2002, p. 26). However, in the situation model of reading comprehension, the reader interprets the information from the text in terms of his or her own goals, feelings and background expectations. Both the background knowledge and inferring skills of the reader have important functions in this interpretation process. Readers are likely to be misguided in cases where they interpret the text wrongly, have insufficient background knowledge or draw wrong inferences. Executive control processing represents the way in which the readers of a language assess their understanding of a text and evaluate their success, so it can be argued that, as readers, how well we comprehend a text depends on an executive control processor (Grabe & Stoller, 2002).

Models of the Reading Process

The literature suggests that three reading comprehension models have been influential in reading research: bottom-up, top-down and interactive (Celce-Murcia & Olshtain, 2004; Grabe & Stoller, 2002; Nunan, 1999; Nuttall, 1996; Urquhart & Weir, 1998). Different cognitive processes are emphasized in these models.

In the bottom-up model, the reader deals with letters, words and then sentences in an orderly fashion (Urquhart & Weir, 1998). If the idea is taken to an extreme, the reader can be thought of as processing "each word letter-by-letter, each sentence word-by-word and each text sentence-by-sentence" (Grabe & Stoller, 2002,

p. 32). In this model, there is little influence from the reader's background knowledge (Grabe & Stoller, 2002). Overreliance on text-based or bottom-up processing is referred to as "text-biased processing" or "text-boundedness" (Carrell, 1996, p. 102). As a result of this text-boundedness, readers may remember only isolated facts without integrating them into a cohesive understanding, which in turn brings the drawback of focusing on trees rather than paying attention to the whole forest (Nunan, 1999; Nuttall, 1996). This model has been criticized from the perspective that it underestimates readers' ability to think and the effects of background knowledge on the reading process (Grabe & Stoller, 2002; Urquhart & Weir, 1998).

Whereas the bottom-up model emphasizes lower-level processing at the textual level, the top-down model of reading is concerned with higher-level processing (Celce-Murcia & Olshtain, 2004; Nunan, 1999; Nuttall, 1996; Urquhart & Weir, 1998). In this model, the reader relies on his intelligence and experience while using the text data to confirm or deny the hypotheses he or she brings to the text (Nuttall, 1996; Urquhart & Weir, 1998). According to Nuttall (1996), a reader using top-down processing assumes an eagle's eye view of the text so it can be claimed that it is useful in order to understand the overall meaning of the text. Not only does the reader's background knowledge about the content area of the text play a significant role in this top-down view of reading but also the rhetorical structures of the text are to be considered as important (Nuttall, 1996). It can be argued that there is a clear distinction between the bottom-up and top-down models of reading. In the former, the reader processes the text word for word, accepting the author as the authority, while in the latter the reader puts a previously formed plan into practice

and has the option of omitting parts of the text which seem to be irrelevant to his or her purpose in the reading process (Urquhart & Weir, 1998). The top-down view of reading, also known as Goodman's model or the reader-driven model, has also been criticized by some researchers on the grounds that what a reader can learn from a text is questionable if the reader must first have expectations about all the information in the text. As a result, few reading researchers support strong top-down views (Grabe & Stoller, 2002).

Interactive models of reading stand out in more recent research as a combination of top-down and bottom-up models. In the interactive model of reading, interaction is thought to take place on two levels. While the first interaction can be observed between the reader and the text, the second one occurs between bottom-up and top-down processing (Dubin, Eskey, & Grabe, 1986). This model assumes that readers employ both bottom-up and top-down processing simultaneously while making sense out of a text (Nuttall, 1996). Eskey and Grabe (1996) suggest that in the interactive model of reading both lower-level processes, like the recognition of words and linguistic structures, and higher level skills, like the use of background knowledge, expectations, and context, contribute to an efficient reading process.

According to Celce-Murcia and Olshtain (2004), good readers of a language integrate top-down and bottom-up processing techniques constantly. To achieve this, they not only bring their prior knowledge and experience to the process of reading but they also make use of their linguistic knowledge and individual reading strategies in order to establish an interaction with the text (p. 123). In the interactive model of reading, the bottom-up and top-down models might also compensate for one another. To exemplify, a reader with poor linguistic ability can rely on top-down processing

to make sense out of a text whereas a reader who lacks sufficient or necessary background knowledge to comprehend a given text can use bottom-up processing. The background knowledge of readers, the type of text under focus, motivation, language proficiency, strategy use, and culturally shaped beliefs about reading all have roles to play in the use of interactive processing (Carrell, et al., 1996).

Schema Theory

Schema theory has been mentioned and researched under the umbrella of an interactive approach to reading. Given the fact that our assumptions about the world are shaped by what we have experienced and how our minds have organized our experiences, a useful way of understanding the reading process is provided by schema theory (Nuttall, 1996). Carrell and Eisterhold (1983) highlight the idea that a text does not carry meaning by itself, it only provides directions for the reader, so the reader's responsibility is to construct meaning by using his or her previously acquired knowledge, which is called "background knowledge", and the previously acquired knowledge structures, which are called "schemata" (p. 556). Nuttall (1996) defines schemata as "organized mental structures" that represent general concepts in our memory (p. 7). To exemplify, to interpret the sentence 'The policeman held up his hand and stopped the car.', the most likely schema that is to be triggered would involve a traffic cop who is signaling to a driver of a car to stop. In fact, the interpretation of this is embedded in our prior cultural knowledge about the way traffic police are known to communicate with automobile drivers (Nuttall, 1996).

There are two kinds of schemata: content schemata and formal schemata. Whereas content schemata refer to the background knowledge a reader brings to the text, formal schemata represent knowledge regarding rhetorical organizational

structures of different types of texts (Carrell, 1987). Content schemata provide readers with a foundation, a basis for comparison. For example, readers of a text about a wedding can compare it both to specific weddings they have attended and also to the general patterns of wedding in their culture (Aebersold & Field, 2003). Concerning the importance of content schemata, one of the best-known studies is that of Steffensen, Joag-Dev and Anderson (1979). This study compared the comprehension of readers from two different cultural backgrounds, one group from North America and one group from India. The researchers looked at the ability of their subjects to recover meaning from two texts, one describing a North American wedding, and one describing an Indian wedding. It was found that American subjects had higher levels of comprehension on the passage describing the American wedding, and the Indian subjects did better on the passage concerning an Indian wedding. This study can be said to highlight the importance of cultural content schemata on reading comprehension.

Since formal schemata refer to the organizational forms and rhetorical structures of written texts, a reader with the knowledge of formal schemata knows that a newspaper article is structured differently from a personal note. Moreover, a reader with formal schemata sensitivity is aware of the fact that the language used in academic text is different from that of a novel. In short, the knowledge that the reader brings to the text about structure, vocabulary, grammar and level of formality constitutes his or her formal schemata (Aebersold & Field, 2003). One prominent study that provides empirical evidence for the effect of formal schemata on reading was conducted by Carrell (1984). In her study, she found that students coming from different cultural backgrounds were more able to recall information from the texts

they were exposed to if the texts had structures closer to those of their own native languages, and some of the subjects' failure to identify the rhetorical structures of texts was attributed to their lack of appropriate formal schemata. In another study, Carrell (1987) tested the effects of both content and formal schemata on ESL students' reading comprehension. The results showed that when both form and content were familiar, the reading was relatively easy. However, when both form and content were unfamiliar, the reading was relatively difficult. Another finding highlighted by this study was that familiarity with the rhetorical form of a text was a significant factor in comprehending the top-level structure of a text.

Having described the overall reading process, which is applicable to reading in both L1 and L2, the purpose of the next section is to highlight reading in L2 by making comparisons with reading in L1.

Reading in the First and Second Languages

Although reading in a first language shares numerous important basic elements with reading in a second language, the processes also display significant differences (Aebersold & Field, 2003). It might make sense to claim that "the real nature of reading is unobservable" (Aebersold & Field, 2003, p. 23). However, research on the process of reading in an L2 provides us with an insight into the factors that might influence L2 reading (Grabe, 1991). Grabe and Stoller (2002) explore the differences between L1 and L2 reading under three different headings: linguistic and processing differences, individual and experiential differences, and socio-cultural and institutional differences.

L1 learners can be thought as having already learned six thousand words on average before they begin their formal reading instruction. They also have an

intuitive sense of the grammar and discourse of the language (Grabe, 1991). However, for L2 learners, the case is very different. Since not all words L2 students read are represented in their mental lexicon, a challenge to overcome awaits them. They have the options of ignoring the unknown words or trying to guess them from context (Schramm, 2009). In other cases, they have to broaden their linguistic knowledge by the use of L2-specific resources such as glosses and bilingual dictionaries (Grabe & Stoller, 2002). Even when L2 readers encounter words that are represented in their mental lexicon, their lexical access is not as automatic as that of L1 readers (Schramm, 2009). In addition, L2 readers' lack of tacit L2 grammatical knowledge and discourse knowledge necessitates their being provided with some foundation of structural knowledge and text organization in L2 for more effective reading comprehension (Grabe & Stoller, 2002; Urquhart & Weir, 1998).

What is more, in many L2 settings, students begin to read after they have learned literacy skills and content knowledge for several years in their L1s. As a result, they have a greater awareness of how they have learned to read and what learning strategies are likely to work for them. Since a good part of their knowledge of the L2 results from direct instruction in the classroom, L2 students gain a greater meta-linguistic awareness and they can use their meta-linguistic knowledge to their benefit in cases where there is a need for strategic support or to compensate for comprehension failure. However, it would not be realistic to assume that all the reading strategies in L1 are transferred automatically to L2 (Grabe & Stoller, 2002).

L2 proficiency plays a major role as a foundation for L2 reading and this has been discussed in the context of the Language Threshold Hypothesis. This hypothesis posits that students must have a sufficient amount of L2 knowledge in

order to effectively employ skills and strategies that are part of their L1 reading comprehension abilities (Bernhardt & Kamil, 1995; Grabe & Stoller, 2002). One study that supports this hypothesis was conducted by Lee and Schallert (1997). The findings of their study have demonstrated that learners need to establish some knowledge of an L2 per se before they can successfully draw on their L1 reading ability to help with reading in the L2.

On the other hand, the Linguistic Interdependence Hypothesis, which is considered as the opposing view to the Language Threshold Hypothesis, argues that L1 linguistic knowledge and skills play an instrumental role in the development of corresponding abilities in L2. Simply put, in reading comprehension, L1 reading skills can be transferred to the L2 reading process (Bernhardt & Kamil, 1995). The data gathered from the study conducted by Bernhardt and Kamil (1995) seem to indicate that first language reading ability is a very important variable in second language reading achievement.

Another difference between L1 and L2 reading is the amount of exposure to print that a student experiences. While L1 students have years to develop automaticity and fluency in reading, most L2 readers are not exposed to enough L2 print to achieve fluent processing (Grabe & Stoller, 2002; Koda, 1996).

Apart from linguistic and processing differences, individual and experiential differences, and socio-cultural and institutional differences could be observed between L1 and L2 readers (Grabe & Stoller, 2002). An important point to be considered is that L2 readers are influenced by their levels of L1 reading abilities, so students who are weak in L1 literacy abilities might fail to transfer many supporting resources to L2 contexts (Grabe & Stoller, 2002). In a comparison of L1 and L2

reading contexts, one is likely to find different individual motivations for reading as well as varying senses of self-esteem, interest, involvement with reading, and emotional responses to reading (Grabe & Stoller, 2002). L1 and L2 readers' reading comprehension differences might also be attributed to the fact that they have different experiences with various text genres. It is the case that L2 students have fewer chances to be exposed to the full range of text genres that are commonly read by L1 students. In addition to these, the value attached to the concept of literacy in different cultural backgrounds where L2 students come from has a prominent effect on L2 reading (Grabe & Stoller, 2002). While some cultures have great respect for the printed word and accept it as the authority without questioning, others have reservations about the implications of putting their opinions in print (Alderson, 2000).

Another major distinction between L1 and L2 reading environments is that L2 text resources may not always be organized in ways that match students' L1 reading experiences. Literate societies of the world develop their preferred ways of organizing information and using linguistic resources in written texts (Grabe, 2009; Grabe & Stoller, 2002). For instance, Anglo-American texts are more explicit about their structure and purpose, use more sentence connectors and are generally less tolerant of digressions (Hyland, 2006). This issue of contrastive rhetoric, which uses the notion of culture to explain differences in written texts and writing practices, suggests the benefits of exploring the discourse organization of texts as part of reading instruction and raising awareness of the ways in which information is presented in L2 contexts (Grabe & Stoller, 2002; Hyland, 2006). In a study aimed at exploring whether culture-specific rhetorical conventions affect the reading recall of

Chinese EFL college students, Chu, Swaffar and Charney (2002) found out that "different rhetorical conventions had a significant overall effect on Chinese students' reading comprehension in both immediate and delayed recall" (p. 511). As Schramm (2009) suggests, "readers in a target language need to build their knowledge about culture-specific text forms in order to be able to make top-down use of it in their target language reading" (p. 234).

An elaboration on discourse structure awareness seems necessary if the function that discourse structure-oriented graphic organizers might carry out in reading instruction is to be highlighted. Thus, the next section will focus on the concept of discourse structure awareness.

Discourse Structure Awareness

It can be claimed that reading comprehension depends on a reader's discourse or text structure awareness. Good readers master pinpointing the ways that information is organized and identifying the signalling devices that provide clues to this organization. Good readers can also recognize the main or topic sentences as they appear in a text. What is more, they are alert when new themes and concepts are introduced or when the topic is shifted by the author. Another distinguishing characteristic of good readers is that they are able to recognize the vocabulary that shows maintenance or shifts in discourse information as well as lexical forms that identify specific organizational patterns in texts such as cause-effect, comparison and contrast, and problem-solution (Grabe, 2009, p. 243).

Van Dijk and Kintsch (1983) highlight the concept of levels of text structure by classifying them under two headings: macro- and micro-structures in texts. Whereas the concept of macro-structure is associated with the global coherence of

the discourse and the hierarchical organization of texts, micro-structures are used to define sentence and multi-sentence level structure in a text (Van Dijk & Kintsch, 1983).

Mohan (1986) adds another perspective to text structure by introducing the term knowledge structures. The most salient characteristic of Mohan's work is his emphasis on developing text structure knowledge in the realm of content-based instruction. Mohan (1986) highlights six basic structure types including *description, sequence, choice, classification, principles* and *evaluation.* While the first three are distinguished by their specificity and practicality, the last three are considered general and theoretical. The functions these six patterns carry out in texts differ from one another. The collection of *description, sequence* and *choice* are employed to describe particular objects, narrate events and elaborate on processes and procedures. On the other hand, the collection of *classification, principles* and *evaluation* are used to structure principles and present abstract information. Mohan (1986) claims that the aforementioned patterns of organization are embedded in all texts in different combinations.

Another approach to text structures to be presented is genre theory. When groups of people begin to rely on specific norms for organizing texts in ways that are representative of group goals and purposes, genre conventions emerge (Grabe, 2009). Genres can be defined as collections of rhetorical choices made by the authors (Hyland, 2006). This approach assumes that there are different types of discourse structures with their own linguistic features and ways of organizing ideas. For example, the rhetorical organization of a business letter differs from that of a research article. Readers of a language can make use of their familiarity with a

single elemental genre such as a procedure, to understand different macro-genres like recipes, scientific lab reports or instruction manuals (Hyland, 2006). Having an insight into genre conventions is necessary for skilled reading because genres communicate vital information about the text. Effective readers of a language identify the specific attributes of genres that are likely to meet their needs and help to achieve their goals (Grabe, 2009).

Research on discourse structure has shown that texts include a great amount of discourse information at multiple levels and it is this information that enables readers to establish coherent representations of texts in their minds. Good readers are known for their ability to pinpoint major ideas which are placed at higher levels in the text hierarchy. Furthermore, "top-level structural information", or "rhetorical macropropositions" have an impact on comprehension and recall (Grabe, 2009, p. 244). Better readers are said to recognize and use top-level structuring to enhance their recall and comprehension. This ability of better readers is scaffolded by varied linguistic systems that interact with comprehension processing. These linguistic systems involve cohesive signaling, information structuring, lexical signaling, anaphoric signaling, topic continuity systems and text coherence (Grabe, 2009).

The first linguistic system to be mentioned, cohesion, is associated with surface level signals that serve to reflect the discourse organization of the text and what the writer has set out to communicate. These signals are repetition, synonymy, hyponymy, paraphrase, anaphora, transition markers, substitution, ellipsis, parallelism and other lexical relations that link parts of the text. The second linguistic system which guides the reader is information structuring. As a reader, in order to reconstruct the information in the text appropriately, it is important to pay attention

to the influence of given and new information in texts, the relations between lexical coreferents, and certain transition devices (Grabe, 2009). The third system, lexical signaling, is best understood by an example: Causal structure in texts is signaled by words and phrases such as *as a result, because, since, for the purpose of, thus, in order to, if/then, so* and *therefore.* While anaphoric signaling involves linking back to a prior reference in a text by means of pronouns or demonstratives, topic continuity systems are important in terms of understanding how the topic is maintained. Finally, text coherence is related to the logical flow of ideas in a text. Text structuring and the semantic relationships signaled by a text contribute strongly to the concept of text coherence (Grabe, 2009).

For expository prose, possible discourse structures are *description, definition, sequence, procedure, cause-effect, classification, comparison-contrast* and *problem-solution*. One can encounter these structures organized in different combinations. For example, a text with a problem-solution organization is likely to have cause-effect patterning as a part of the problem section. In expository texts, definitions are also common. After new concepts or terms are defined, an extended explanation or example usually follows (Grabe, 2009). Jiang and Grabe (2007) claim that making an effort to highlight these discourse structures is a meaningful act on teachers' part because they will appear consistently across the texts students are exposed to. They further support their claim by stating that when students are taught that paragraphs in a text can be organized according to comparison-contrast, cause-effect or problem-solution, this awareness improves their reading comprehension. A study carried out by Carrell (1985) demonstrated that explicit teaching about top-level rhetorical organization of texts can facilitate ESL students' reading comprehension and enable

them to remember supporting details of a text as well as major topics and subtopics. The qualitative findings of her study showed that providing instruction about different forms of rhetorical organization patterns helped to boost students' confidence as ESL readers. Another study conducted by Carrell (1984) concluded that certain types of expository organization such as comparison, causation and problem/solution were more likely to facilitate encoding, retention and retrieval of information because of their tightly-organized nature. On the basis of the findings of her study, Carrell also claimed that ESL readers who were able to identify the discourse type of a given text performed better in written recall protocols which were administered as post-tests. This was due to the fact that these readers were better able to organize their written recall protocols by using their text knowledge.

More recent studies have looked into the inter-relatedness of text structure and text features, text structure awareness and reading comprehension. Chung (2000) investigated whether signalling of coherence and cohesion in a text had an effect on ESL learners' reading comprehension at a global and local level. In the study, four versions of an authentic text with the same content and the same level of difficulty were produced. While the first version was a non-signalled passage, the second, third and fourth versions were embedded with logical connectives, paragraph headings and these two signals in combination respectively. Chung (2000) found out that paragraph headings contributed to both macro and micro structure understanding of a text. As to logical connectives, they aided significantly in understanding macrostructures of texts. The results of the study also showed that those poorest in reading comprehension benefited most from signals during reading. Given the results

in favor of signals for less able readers, it might be recommended that the teaching of the use of signals in a given text may aid reading comprehension.

Wang and Cao (2009) examined the effects of text structure and structure awareness on EFL learners' reading performance. The results of their research indicated that subjects who possessed text structure awareness tended to produce more total ideas and more top-level and global ideas in their written recall protocols than those without this awareness, no matter what the type of text structure was. These subjects were also able to produce a more coherent reconstruction of the passsage they were exposed to.

Along the same line of research, Martinez (2002) investigated the use of text structure as a tool to facilitate and improve EFL students' comprehension of a text written in English. The tools used in the study were five reading passages with different rhetorical organization patterns, and written recall protocols were employed as post-tests. After completing their written recall protocols, the subjects were asked whether they could identify the rhetorical structures of the texts used in the study. Martinez found that when EFL readers consciously recognized the structure of the text and used it to organize their recall, their performance in reading comprehension and reproduction of ideas presented in a text was better. Martinez proposes that in an EFL setting teaching reading comprehension should be based on the exploitation of the text structure. In this way, students can be made aware of and capable of interpreting the rhetorical information existing in a text.

The aim of this study is to explore the effectiveness of text structure oriented graphic organizers. Having dwelled upon discourse structures and the role of

discourse structure awareness in reading instruction, it seems appropriate now to proceed to discussing graphically representing information and graphic organizers.

Graphically (Visually) Representing Information and Graphic Organizers

Graphically representing information helps students to see links among concepts and provides them with a map of the passage that is being dealt with. Maps serve travellers wishing to arrive at a desired place without getting lost. In the same way, graphic representations of text enable readers to navigate their way through what they read. Webbing, graphic organizers and outlines show the organization of textual material and draw students' attention to what is important to learn and remember (Readence, Moore, & Rickelman, 2000). While the Word Map highlights nuances of word meanings by exploring them through graphical analysis, K-W-L, I- Charts, and Talking Drawings can be used as a means of activating students background knowledge prior to reading. The common feature they share is that they all enable students to be engaged in higher-level thinking activities and understand the reading materials they are exposed to in a better way (Readence, et al., 2000). Graphically representing information through the aforementioned techniques provides students with a framework for reading a passage. Students learn to anticipate expected learning outcomes and these expectations can form the basis for making judgements while reading. This is likely to facilitate enhanced comprehension because information can be processed more easily than if students are thrust into a passage with no preparation other than being told to read the passage and be ready to discuss it (Readence, et al., 2000).

As noted previously, comprehension can be boosted by identifying the schematic framework of a text and giving students the tools necessary for structuring

that information. For example, expository text is structured in a factual, objective way. On the other hand, a literary text usually engages students' interest by drawing them into a story. Students who can identify the differences between these structures can more easily form expectations on which to base their reading predictions. Graphic depictions of text structure enable students to become familiar with this structure while reading, allowing them to become independent readers, learners and thinkers (Readence, et al., 2000).

The term graphic organizer is extended to encompass a variety of mapping strategies, including semantic organizers, semantic maps, concept maps, networking and other various schematic designs. Although different terminologies might be used to specify types of graphic organizers, the skeleton format for each one is the same (Bromley, Irwin-De Vitis, & Modlo, 1995). Graphic organizers can be defined as schematic tools that are made up of both verbal information and visual images (Bromley, et al., 1995; Tang, 1992). The availability of lines, arrows and spatial arrangement is a major feature that distinguishes graphic organizers from simple outlines. The inter-relations between the major and more local ideas in a given text can be reflected in a structured pattern through the use of graphic organizers, which in turn equips the reader with a coherent and complete representation of verbal information (Bromley, et al., 1995; Jiang & Grabe, 2007).

When the aim is to choose a format of organizer that best matches the features of the text structure in hand, teachers have different alternatives at their disposal. Figures 1 through 10 below show examples of graphic organizers developed by Strangman, Hall, & Meyer (2003). For example, a *Descriptive* or *Thematic Map* (Figure 1) is effective in presenting generic information and lends

itself to highlighting hierarchical relationships. While reflecting a hierarchical set of information, a teacher might want to draw students' attention to superordinate and subordinate elements in the text. In this situation, the most appropriate format to construct would be a *Network Tree* (Figure 2). When the information that is linked to a main idea or theme cannot be integrated into a hierarchical structure, a *Spider Map* (Figure 3) could be useful to organize information (Strangman, et al., 2003).

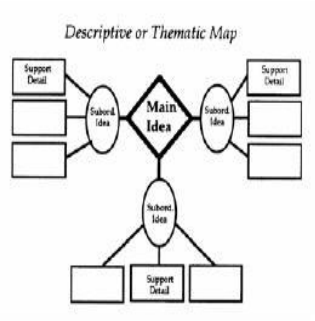


Figure 1 - Descriptive map

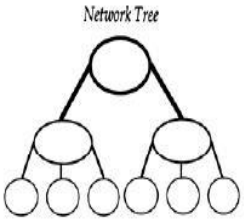


Figure 2 - Network Tree

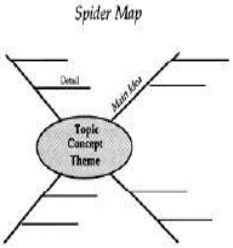


Figure 3 - Spider Map

In order to display cause and effect relationships or to make students focus on possible problems and solutions that emerge out of a text, teachers are equipped with three options: a *Problem and Solution Map* (Figure 4), a *Problem-Solution Outline* (Figure 5), or a *Sequential Episodic Map* (Figure 6) (Strangman, et al., 2003).

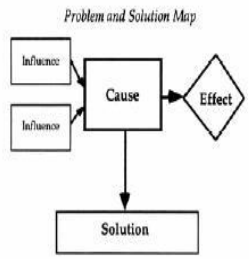


Figure 4 - Problem and Solution Map

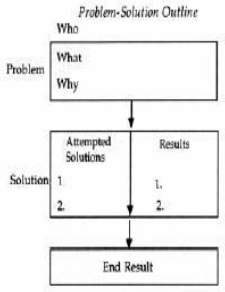


Figure 5 - Problem-Solution Outline

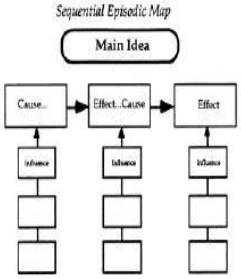
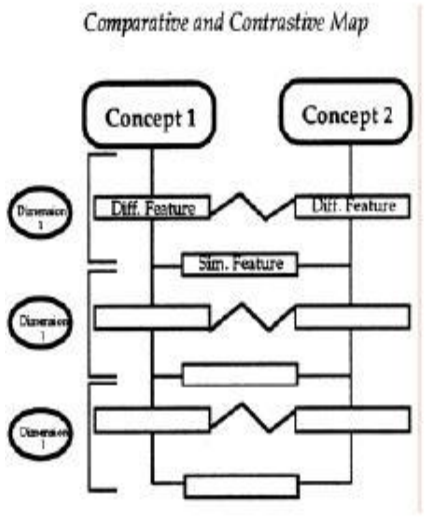


Figure 6 - Sequential Map

A *Comparative and Contrastive Map* (Figure 7) or a *Compare-Contrast Matrix* (Figure 8) allows students to compare and contrast two concepts, approaches, opinions or things by taking their distinguishing features and attributes as major criteria (Strangman, et al., 2003).



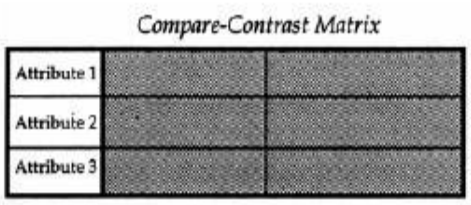
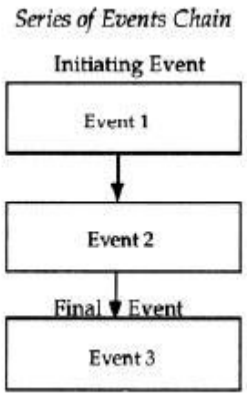


Figure 7 - Comparative and Contrastive Map

Figure 8 - Compare-Contrast Matrix

If text structure is organized on the basis of various steps and stages, exploiting a *Series of Events Chain* (Figure 9) might be a good idea. On the other hand, a *Cycle Map* (Figure 10) is likely to produce positive results while reflecting information that is circular or cyclical, with no clear beginning or ending (Strangman, et al., 2003).



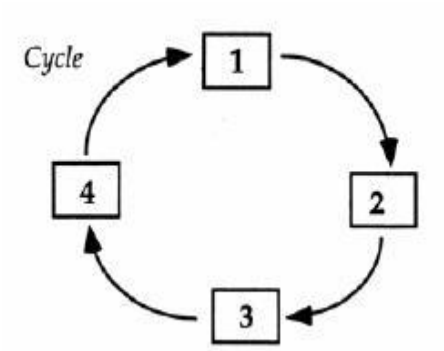


Figure 9 - Series of Events Chain Figure 10 - Cycle

Constructing graphic organizers is a matter of creativity and all text structures can be represented effectively through these visual language tools. Grabe (2009) claims that basic graphic organizer formats are available to teachers for commonly used text structures including *definitions, comparison-contrast, cause-effect, process/sequence, problem-solution, description/classification, argument, for-against* and *timeline.* However, it is crucial for teachers to meet certain demands while undertaking the task of developing discourse or text structure-based graphic organizers. Grabe and Jiang (2010) propose a list of guidelines that teachers should take into consideration during the development and evaluation process of discourse structure-based graphic organizers. They suggest that graphic organizers should present both the main ideas and the macro level structure of the text effectively. Since the ideas in a given text are ideally logically developed in a sequential manner, the same pattern should be simulated in the organization of graphic organizers. Local structures are as important as macro level ideas and they should be able to find a place for themselves. However, it is the teacher's responsibility to pay utmost attention to picking out the most salient information to reflect through graphic

organizers. Ideal graphic organizers aim at enabling students to recognize the interrelationships and patterns of organization in a text. Apart from these, it is necessary to present the content of the text in a way that is closest to the original. If the graphic organizers in question are partially completed, then teachers should make sure that they have effective clues for the blanks. Last but not least, graphic organizers should be simple and easy to follow (Grabe & Jiang, 2010).

Teachers can make use of graphic organizers in different periods of their reading instruction as pre-reading, during-reading and post-reading tasks. The teacher can use a graphic organizer as an adjunct aid to brainstorming in advance of students' exposure to the reading material. With the help of graphic organizers, the teacher can help students retrieve their background knowledge about a particular topic and facilitate discussion of ideas. Students could be asked to focus on both the semantic relationships among the words they produce and the inter-relationships of their statements (Carrell, et al., 1989). As a during-reading activity, graphic organizers might work well when students are required to find key points and note information in the text. Graphic organizers improve active processing and reorganization of information, so they might be considered a support or an alternative to note-taking and summarizing (Suzuki, 2006). Moore and Readence (1984) claim that the point of the lesson at which graphic organizers are used determines the extent of their effectiveness. It has been found that when graphic organizers are integrated into the lesson as a pre-reading activity, possible effects on learning outcomes are relatively minor. However, when they are used as a follow-up to reading, they are likely to lead to bigger improvements. Thus, Moore and Readence (1984) suggest that graphic organizers should be used after students encounter and

process the reading text. As a post-reading activity, graphic organizers might be used to review information in the text or to check whether students have grasped the content (Carrell, et al., 1989; Moore & Readence, 1984).

Grabe (2009) highlights Dual Coding Theory as an important rationale behind the use of graphic organizers. The strengths of graphic representations have been supported by this theory. To explain Dual Coding Theory, Paivio (1991) proposes that human cognition is made up of two systems that carry out the function of storing, processing and retrieving information in the brain. Whereas the first system is specialized in managing verbal processing and handling linguistic information in the long-term memory, the second system channels non-verbal processing and copes with visual (mental-picture) information. Linguistic and visual information are stored and processed in different ways. The former is stored in a linear fashion in terms of hierarchies. In contrast, the latter is believed to be holistic based on part-whole relationships. The two systems in question, which are interconnected, involve representational units that are called logogens and imagens. These representations can work either independently or cooperatively to process verbal and non-verbal input. The theory posits that there can be enhanced processing of information if linguistic input is presented with congruent visual input because this facilitates dual coding of information (Paivio, 1991).

The findings of a study conducted by Suzuki et al. (2008) are consistent with the rationale behind Dual Coding Theory. In their study, the 56 Japanese EFL students students were divided into two groups. The 28 students in the control group were provided with four English sentences, all of which included one or more coordinating conjunctions, in a linear sentential representation. The same four

sentences were presented to the 28 experimental students in a spatial graphic display. After the students read the English sentences with coordinating conjunctions, they were given four multiple choice questions in Japanese, which were constructed to test whether the participant students could understand the sentences correctly. The test results confirmed that the experimental group outperformed the control group in their comprehension of the four English sentences with coordinating conjunctions. In the second phase of their experiment, the researchers found out that when given the appropriate training, the Japanese EFL learners who took part in the study had the capacity to convert textual information into spatial graphic displays in order to scaffold their reading comprehension in self-study situations. The researchers explain their findings by referring to the strengths of spatial graphic displays. They claim that spatial graphic displays ease the process of making connections while reading. In addition, these displays decrease the cognitive load of interpreting complex relations between the ideas in a given text.

In another study by Suzuki (2006), five Japanese high school students were required to construct graphic organizers and another five were asked to produce summaries while reading a passage written in English. They were then supposed to report what they were thinking while reading the passage and producing adjunct aids so that their reading strategies could be examined. The results gained from think-aloud protocol analysis showed that the graphic organizer group reported more general comprehension strategies than the summary group. Suzuki concluded that being involved in converting textual information into spatial graphic displays enabled the experimental students to employ more general comprehension strategies.

Apart from the aforementioned studies, which draw attention to the advantage of a visual display over a sentential one, a number of studies related to visual organizers have aimed at both testing the effectiveness of these organizers and exploring students' attitudes towards them. Tang (1992) reported on an experiment which investigated the effect of graphic representation of the knowledge structure of classification on reading comprehension. The participants of the study, who were intermediate level ESL students, were divided into two groups: the graphic and the non-graphic group. Each group was required to deal with the same passage which had classification as its rhetorical pattern. The graphic group, after being presented with the content of the passage in a classification tree graph, were required to complete a partially complete tree graph. The non-graphic group, on the other hand, focused on some key vocabulary and interacted with the reading material by answering some questions. Written recall protocols were used for each group as post-tests. The results of the post-tests showed that the graphic group did significantly better than the non-graphic group in the written recall test in terms of the information recalled from the text. In addition to this, the majority of the subjects in the experimental group were positive about using a graphic organizer and claimed that it helped comprehension.

Another study by Carrell et al. (1989) aimed at testing the effect of semantic mapping as a pre-reading and post-reading activity. Before reading a passage about culture shock, the students in the experimental group were asked to brainstorm some ideas about culture shock. The instructor helped to stimulate discussion by asking some key questions about this theme. As a next step, the instructor organized the ideas gathered from the students into a semantic map on the board. The organization

of the map was discussed as a whole class in terms of the relationship between main ideas and supporting details and new vocabulary and then the students copied this map. After reading the passage, the teacher and the class discussed it. Finally, one of the students was asked to develop a class post-reading map on the board by gathering input from the rest of the class. For the second passage, which was about stress caused by homework, the students constructed their own pre- and post-maps. The control group did not use semantic mapping and dealt with the passages in a traditional way. When the students were given open ended questions as part of a post-test, the group who used semantic mapping performed significantly better than the control group. However, the same difference was not observed in the 'multiple-choice questions' section of the post-test, which did not require very elaborate textual processing.The subjects in the semantic mapping group brought up the idea that this technique might be useful while reading passages with detailed information.

In a very recent study, Liu et al. (2010) investigated the effects of a computer-assisted concept mapping learning strategy on EFL college learners' English reading comprehension. The findings of the study indicated that the computer-assisted concept mapping reading strategy improved poor readers' reading ability and narrowed the reading proficiency gap between good and poor readers. On the basis of the qualitative data gathered in the study, the researchers arrived at the conclusion that the training in the concept mapping strategy enhances EFL learners' confidence in reading in English. The most salient finding of the study was that the instruction provided about concept mapping improved the learners' use of English reading strategies such as listing, inferring, summarizing, reviewing and evaluating.

Jiang (2007) carried out a longitudinal large-scale study which aimed at testing the possible effects of graphic organizer-completion on reading comprehension and improvement in reading skills. Her subjects were 340 Chinese EFL college sudents from 12 intact classes. These students were exposed to graphic organizer instruction in reading classes for 16 weeks. Students at differing levels were assessed through graphic organizer completion and TOEFL reading comprehension tests to find out whether graphic organizer instruction had an impact. The findings of the study showed that graphic organizer completion training had a significant effect on students' reading comprehension. The experimental group that took part in the study was also required to fill in a short attitude survey when the instruction period was over. The results of the survey demonstrated that students held positive attitudes towards the use of graphic organizers. On the basis of the findings of her study, Jiang (2007) suggests that graphic organizer training should be made a part of EFL reading curriculum.

The effect of using graphic organizers in content-area instruction in EFL settings has also been examined. In a study conducted by Kools et al. (2006), multiple graphic organizers that reflected macro-level information were integrated into a brochure text about asthma. The participants, who were first year university students, read the text either with or without graphic organizers. The results of the study showed that the graphic organizers used in the study had a strong effect on text comprehension at both macro and micro levels. Another study related to the use of graphic organizers in content area insruction was done by Stull and Mayer (2007). The findings of their study showed that integration of graphic organizers (hieararchies, lists and flowcharts) into scientific texts helped students in transferring

their understanding of content to problem solving based tests. Moreover, viewing author-generated graphic organizers facilitated deeper understanding of scientific passages and shortened the learning time necessary to grasp the content. In this study, graphic organizers functioned as a visual scaffold for students.

The effects of spatial graphic representations of English sentences on discourse comprehension, the effect of graphic representation of the knowledge structure of classification on students' reading comprehension, the effects of concept mapping and semantic mapping as pre-reading and post-reading activities, and the impact of multiple graphic organizers in content area instruction have all been explored in the literature. However, the field lacks studies conducted to explore the effectiveness of discourse structure-based graphic organizers. Only two studies have been carried out to look into the impact of graphic organizers in reading instruction. While Tang (1992) worked with ESL students, Jiang (2007) tested her organizers on Chinese EFL students. No Turkish studies have been conducted in order to investigate the effectiveness of discourse structure-based graphic organizers in reading instruction. The current study is the first study to explore the effectiveness of discourse structure-based graphic organizers on students' reading comprehension of selected texts in a Turkish EFL context. The methodology described in the next chapter intends to fill this gap in the literature.

Conclusion

In this chapter, areas such as the definition, nature and importance of reading, models of the reading process, schema theory and reading in the first and second languages have been covered. In addition, a review of the literature on discourse

structure awareness, graphically (visually) representing information and graphic organizers was presented.

The study that is described in this thesis aims to provide empirical evidence for the effectiveness of discourse structure-based graphic organizers on students' reading comprehension of selected texts in an EFL setting. This study also explores students' attitudes towards the use of discourse structure-based graphic organizers in reading instruction. In the next chapter, the research tools and methodological procedures of the study will be discussed. In addition, information about the setting and the participants will be provided.

CHAPTER 3 – METHODOLOGY

Introduction

The first aim of the study was to investigate the effectiveness of using graphic organizers that reflect the discourse structures of texts on students' reading comprehension of those texts. In addition, the study was intended to explore the attitudes of students regarding the use of discourse structure-based graphic organizers. During the study, the researcher attempted to answer the following questions:

1. How does the use of discourse structure-based graphic organizers affect students' reading comprehension of selected texts?
2. What are students' attitudes towards the use of discourse structure-based graphic organizers in reading instruction?

In this chapter, the setting, the participants and, the materials and instruments of the study will be described, and information about the data collection procedures and data analysis will be given.

Setting

This study was carried out at Uludağ University, School of Foreign Languages (UUSFL) in the second term of the 2009-2010 Academic year. UUSFL provides compulsory intensive language education for one academic year. Before the beginning of the academic year, all incoming students are given a placement test. If they score at least 60 out of 100 on the placement test, they gain the right to take the proficiency test that is held afterwards. The students are expected to score 70 out of 100 on this proficiency test in order to pass and have the right to start studying at

their own departments. Those who cannot score 70 or above are placed in an appropriate level among the three levels, Elementary, Pre-Intermediate, and Intermediate on the basis of the results of the original placement test.

At UUSFL, one academic year is divided into two terms, thirty-two weeks in total. Students attend classes thirty hours per week in the elementary level, twenty-five hours per week in the pre-intermediate level, and twenty-two hours per week in the intermediate level. During the thirty-two weeks of English instruction, students take main course, grammar, reading and writing lessons. Listening and vocabulary skills are a part of the main course lesson. At the end of the academic year, all the levels are expected to have completed an upper-intermediate level main course book to be able to take the proficiency test given to assess the students' overall performance. Each week, whereas the elementary and pre-intermediate students have four hours of reading, the intermediate level students attend three hours of reading classes. In the reading classes, the teachers use activities such as open-ended questions, multiple choice questions, true-false items, matching exercises and discussion of the key points to test their students' understanding of the reading passages. One reading course book is used throughout each semester and reading is assessed through midterms and quizzes.

Participants

Seventy students from two intact intermediate level classes took part in the study. The same reading teacher carried out the reading tasks related to the study in both classes. This reading teacher held a bachelor's degree and had nine years of teaching experience. In Intermediate Class 3, out of 36 students 27 completed all four of the tasks. In Intermediate Class 4, out of 34 students 24 completed all four of the

reading tasks. Thus, while conducting the data analysis, the results of these 51 students were taken into consideration. Thirty of these 51 students were female and 21 of them were male.

The study used a counter-balanced research design in which the same group of subjects serves in more than one treatment (Aron & Aron, 2003). The two classes involved in the study received both kinds of treatments and they both acted as their own experimental and control groups. This design was employed with the aim of reaching the target of the study using a smaller number of participants and to control for the possible effects of individual factors.

The reading teacher who participated in the study was chosen because she was qualified and was willing to experiment with graphic organizers in her reading classes. She taught four classes. Out of these four classes, Intermediate Class 3 and Intermediate Class 4 were deemed appropriate to take part in the study because it was found that there was no significant difference between these two classes in terms of their average grades from the first semester. In order to ensure that the level of proficiency in English was equal in both classes, the means of the seventy students' average grades from the first semester were compared by conducting an independent samples t-test. On average, the participant students from Class 4 received higher scores in the first semester ($M= 70.6$, $SE= 12.5$) than the students from Class 3 ($M= 69.7$, $SE= 10.6$). However, this difference was not significant $t(64)= -.32$, $p>.05$ and it represented a small effect size $r= .04$.

Materials and Instruments

The materials and instruments used in this study were four different reading texts and various graphic organizers that reflected the discourse structures of these texts, a post-test, and a questionnaire that was in a Likert-scale format.

Reading texts

The four reading texts used in the study were chosen from a reading textbook called Reading for the Real World 1 (Malarcher & Janzen, 2004). All four of the texts can be seen in Appendix A. While selecting the reading passages, the researcher made an effort to create a combination of texts that had different discourse structures as the aim was to expose the students to as many discourse patterns as possible during the course of the study. The text structures of the four reading passages that were used in the study included *description, definition, sequence, procedure, cause-effect, classification, comparison-contrast,* and *for* & *against*. In each text, two or three of these structures were nested within one another. The text structures included in each reading text are presented in Table 1 below:

Table 1 - The text structures of the four passages used in the study

TEXTS	TEXT STRUCTURES
Text A (Studying Headaches)	procedure, definition, classification
Text B (The History of the Death Penalty)	sequence, comparison, for & against
Text C (Cheating in Sports)	cause-effect, definition, classification
Text D (Ideas about Beauty)	description, for & against

The reading passages used in the study were of almost equal length. The results of the word counts for the four passages are presented in Table 2 below:

Table 2 - The word counts of the four passages used in the study

Texts	Word Count
Text A (Studying Headaches)	600
Text B (The Death Penalty)	577
Text C (Cheating in Sports)	577
Text D (Ideas about Beauty)	576

It was also found that the texts were at about the same difficulty level and the researcher thought that they were suitable for intermediate level students who were working on an upper intermediate book at the time of the study. The readability of the texts was analyzed through the readability statistics feature included in the word processing program Microsoft Word[1]. The readability statistics for the four texts can be seen in Table 3 below:

[1] In Microsoft Word, the "Tools" menu has the feature of "Spelling and Grammar" check. When all the spelling and grammar mistakes are checked and corrected, Microsoft Word will present the readability statistics result table.

Table 3 - Readability results of the four texts

Texts	Flesch-Kincaid reading ease score	Flesch-Kincaid grade level
Text A (Studying Headaches)	61.4	8.4
Text B (The Death Penalty)	52.2	8.7
Text C (Cheating in Sports)	61.2	9.5
Text D (Ideas about Beauty)	53.9	9.7

In Table 3 above, the Flesch-Kincaid reading ease score and the Flesch-Kincaid grade level for each text can be seen. The Flesch-Kincaid Reading Ease Score is between 0 and 100 (0-29: very confusing, 30-49: difficult, 50-59: fairly difficult, 60-69: standard, 70-79: fairly easy, 80-89: easy, 90-100: very easy) and the Flesch Kincaid Grade Level is between 1 and 12 (ReadibilityFormulas.com, n.d.).

The researcher aimed to ensure that the vocabulary of the four texts was at an appropriate difficulty level for intermediate level students. Thus, the vocabulary profiles of the four texts were analyzed using Vocabprofile (Cobb, n.d.). The vocabulary profiles[2] of the four texts can be seen in Table 4 below:

[2] K1 words: the list of the 1000 most frequently used word families in English
K2 words: the list of the 2000 most frequently used word families in English
Academic Word List: the list of words commonly seen in academic texts
Off-list words: words that do not appear on the above lists. (Cobb, n.d.)

Table 4 - Vocabulary profiles of Texts A, B, C and D

Types of Words	Text A: Studying Headaches	Text B: The Death Penalty	Text C: Cheating in Sports	Text D: Ideas about Beauty
	Percent	Percent	Percent	Percent
K1 Words (1-1000)	78.96	78.52	73.63	81.25
K2 Words (1001-2000)	5.18	7.90	9.08	4.86
AWL Words (Academic)	4.51	3.26	6.68	9.20
Off-list Words	11.35	10.31	10.62	4.69
	100	100	100	100

The researcher wanted to ensure that the percentages of K1 and K2 words amounted to approximately equal numbers for each text under focus. As presented in Table 4 above, the percentages of K1 and K2 words in texts A, B, C and D amount to 84.14%, 86.42%, 82.71%, 86.11% respectively. It was seen that the readings were fairly equal in terms of the percentages of K1, K2, AWL and off-list words.

Text B and Text D seemed a little more difficult in terms of reading ease and grade level and this fact was taken into consideration. The readings were paired in such a way that in each week the students were exposed to a more difficult text and an easier text. In this way, it was ensured that the students did not have one set that was more difficult than the other. Thus, Text A was paired with Text B while Text C was paired with text D. What is more, this pairing seemed appropriate as regards the vocabulary profiles of the texts. The opinions of several teachers at Uludağ University were also sought and they agreed that the intermediate level students could handle the four texts in question.

Graphic Organizers

As mentioned previously, the text structures of the four reading passages that were used in the study included *description, definition, sequence, procedure, cause-effect, classification, comparison-contrast,* and *for & against.* In each text, two or three of these structures were nested within one another. The researcher developed graphic organizers that directly reflected the discourse structures of the selected texts. The graphic organizers for each text can be seen in Appendix B. In order to understand whether these graphic organizers were appropriately designed, the opinions of five teachers from Uludağ University were sought. They all agreed on the appropriateness of the graphic organizers developed by the researcher. In order to test the practicality of the graphic organizers, four reading teachers from the Intermediate level were asked to sit down and complete the graphic organizers with the texts. They all successfully completed the graphic organizers. The researcher also required two of these teachers to do some of the graphic organizer activities of the study in their classes. These two reading teachers reported that the Intermediate level students could do the activities without any difficulty. In this way, the researcher made sure that the graphic organizers would work in the classroom environment.

The measure of reading comprehension

Considering the techniques that are used to assess reading comprehension, one cannot claim that there is one best method to test reading comprehension. No method can alone serve all the purposes of testing because every testing technique brings along its advantages, disadvantages and drawbacks (Alderson, 2000). Due to their suitability for easy administration as well as rapid and economical scoring,

multiple-choice test items are commonly preferred, although this technique tests only recognition knowledge and severely restricts what can be tested (Hughes, 2003). What is more, a good reader is not always successful in a multiple choice test given the fact that this kind of test taking necessitates a separate ability (Alderson, 2000). There is another risk inherent in a multiple-choice reading comprehension test: Test-takers may find the correct answer by educated guessing (Hughes, 2003). As to matching tasks, as Brown (2004) suggests, they can "become more of a puzzle solving process than a genuine test of comprehension" (p. 198). Gap filling tasks were also excluded because of their low validity in assessing reading comprehension (Brown, 2004). Cloze tests are more appropriate for assessing the grammatical and discourse functions of specific words in a given reading passage (Brown, 2004). Thus, the aforementioned methods were not employed.

Since the aim of the researcher was to evaluate the subjects' reading comprehension on the basis of their understanding of macro or micro level ideas present in the selected texts, the students were asked to write summaries as a post-test. What is more, it was thought that this technique had more authenticity in terms of testing when compared with all of the aforementioned techniques because there was a greater match between what was to be assessed and what was being administered. However, the drawback of using a summary as a technique to assess reading comprehension becomes recognizable when students understand the text they read but fail to express what they have comprehended in written form (Alderson, 2000). In order to overcome this problem, the participants of the study were required to produce their summaries using their L1, as suggested by Alderson (2000). The rationale behind this choice was to eliminate the difficulty inherent in expressing

oneself in an L2. In this study, the exploitation of discourse structure-based graphic organizers and discussion activities took place in the same class hour as the L1 summary. Thus, for the purpose of this study, recall of the ideas in the texts to include in the summaries and comprehension refer to the same attribute because "recall is commonly accepted as the operational definition of comprehension" (Carrell, 1985; Connor, 1984, as cited in Tang, 1992, p. 180).

Before the summaries were scored, the first step taken was to identify the important ideas in each text that should be included in an ideal summary, through a pilot study that was carried out with ten teachers from Uludağ University. The teachers who took part in the study were asked to read the four texts and then summarize them by focusing on the key ideas that they found important for the comprehension of the texts. All the summaries produced by the participant teachers were read by the researcher and the key ideas that had been written down were gathered. In order to score the summaries of the students, a scale that included the key ideas the participant teachers had focused on in their summaries was developed. These teachers were asked to rate the key ideas they had come up with from 1 to 4 (1= not important, 2= almost important, 3= important, 4= very important) for each text used in the study. It was made sure that the participant teachers who were required to develop a rating scale for each text were not involved with graphic organizers or graphic organizer activities in order to gain an unbiased and more reliable rating scale. The scale and the ratings were used to score the summaries of the students. The highest scores that could be obtained by the participant students in each post test can be seen in Table 5 below.

Table 5 - Maximum scores for post-tests

Post-tests	Maximum scores
Post-test for Text A	37
Post-test for Text B	39
Post-test for Text C	38
Post-test for Text D	37

In the scale, the scores that should be assigned to each idea included in the students' summaries were specifically listed and a total score for each text was calculated. A sample scoring scale with the list of key ideas and a sample coded student summary (both the Turkish and English versions) can be seen in Appendices C and D.

The scoring was done by two blind raters independently. The first and the second raters read and rated all the summaries of the students' separately by using the scale. Since the data in hand were quantitative and the measurement was continuous, Pearson correlation coefficients were used to determine inter-rater reliability for the scoring of each set of data. In cases of disagreement, the raters discussed until they agreed on a single score for the summary in question. Table 6 below presents the inter-rater reliability statistics for each set of post-test scores:

Table 6 - Inter-rater reliability statistics for each set of post-test scores

Class & Post-test	Correlation between Rater 1 and Rater 2
Class 3/ Post-test for text A	.984
Class 3/ Post-test for text B	.987
Class 3/ Post-test for text C	.986
Class 3/ Post-test for text D	.972
Class 4/ Post-test for text A	.977
Class 4/ Post-test for text B	.990
Class 4/ Post-test for text C	.991
Class 4/ Post-test for text D	.989

The post-treatment questionnaire

Following the two-week treatment, the students were asked to complete a questionnaire that was designed to target their attitudes towards graphic organizers. Researchers use questionnaires so that they can obtain information about the thoughts, feelings, attitudes, beliefs, values, perceptions, personality and behavioral intentions of research participants (Johnson & Christensen, 2004). Questionnaires are seen as versatile tools of research due to their efficiency in collecting information and their inherent capacity to provide data amenable to easy analysis and quantification (Johnson & Christensen, 2004). Therefore, it was deemed appropriate to use a questionnaire whose content and organization would correspond to the second research objective of the study. All the items in the attitude questionnaire, which was in a Likert Scale format, were constructed by the researcher. It included fourteen items rated on a 3-point scale. In order to respond to the first 13 statements

in the questionnaire, the students were to select one of the following three options: *I agree, I am not sure,* and *I don't agree.* The last item was worded in order to require the students to directly specify their preferences regarding the types of post-reading activities used in the experiment (*filling in graphic organizers, discussion* or *it doesn't matter*). While the first ten items were intended to tap into the students' attitudes concerning the use of graphic organizers in reading classes, the last four items were designed to make the subjects compare the use of graphic organizers with the use of discussion as a post-reading activity. As to the appropriateness of the content, wording, clarity of expression and design of the questionnaire, the consent of the thesis supervisor was obtained. It was thought that it would be more viable to administer the questionnaire in Turkish in order to ease the task of responding for the students and to gather more reliable data. Therefore, the method of back translation was employed. The questionnaire, which was originally designed in English, was translated into Turkish by a colleague in the MA TEFL program. Then the Turkish version was translated back into English by another MA TEFL student. A native speaker of English was consulted in order to find out if the English version that was originally designed by the researcher and the version that was back-translated were similar in terms of content, wording and clarity of expression. The native speaker of English agreed that the two versions were similar to one another. Both the Turkish and English versions of the questionnaire can be seen in Appendix E.

The participant students' responses to the questionnaire were analyzed by using statistical measures. The frequency percentages that were obtained for each of the items in the questionnaire were interpreted in order to make a decision about the students' attitudes towards the graphic organizer treatment.

Data Collection Procedure

Prior to the initiation of the study, the necessary arrangements with the institution to conduct the study in reading lessons and the adaptation of the existing curriculum to the procedure of the study were completed by the researcher. The researcher also made the arrangements with the participant teacher and gave her training sessions about how to carry out the study in her classes. In these training sessions, the participant teacher was also informed about the rationale behind the use of graphic organizers.

Before the experiment started, the participant teacher had tried to make the students familiar with the procedure of the study by using several samples of text structure-based graphic organizers for some texts in their course books and by asking the students to fill them in. Both the selection of the texts and the development of the related graphic organizers were done by the researcher. The students also practiced writing a summary in their L1 for some of the texts in their course books. In this way, the researcher attempted to eliminate the novelty effect of filling in graphic organizers as a post-reading activity and of writing summaries in L1.

The participants of the study, Intermediate Class 3 and Class 4, participated in both the graphic organizer and the discussion treatments so it can be claimed that they acted as their own experimental and control groups. After the preparation sessions, in the first week of the experiment, Class 3 read text A and text B and filled in discourse structure-based graphic organizers as a post-reading activity whereas Class 4 read the same passages but took part in a discussion instead of working with graphic organizers. In the second week, these classes changed roles. After reading

text C and text D, Class 4 filled in discourse structure-based graphic organizers and Class 3 used discussion as a post-reading activity.

Since discussion is inherently a collaborative activity, the researcher wanted to make sure that the students who were supposed to fill in graphic organizers completed this activity in a collaborative manner. Thus, the students were required to complete the graphic organizers in pairs. While the students were busy filling in the graphic organizers, the teacher drew the same organizers on the board. In order to check whether the students had carried out their task correctly, individual students were asked to take turns to complete the graphic organizers on the board. The questions that were posed by the participant teacher during the discussion activities were also in line with the ideas explored with the graphic organizers. Discussion questions of the four texts can be seen in Appendix F. First, the students discussed the answers to the questions in pairs and then they were involved in a whole-class discussion activity that was led by the teacher. Individual students took turns to answer the questions posed by the participant teacher. After reading the texts and completing either the graphic organizers or discussion activities, the students were asked to write a summary in their L1 about the texts, as a post-test. Their summaries were scored and the data were entered into SPSS for analysis. In this way, the researcher could assess whether using discourse structure-based graphic organizers made a difference in the students' comprehension of the four reading passages.

Data Analysis

In this study, data were collected through the administration of post-tests and the questionnaire that was in a Likert-scale format. In the analysis of this quantitative data, the Statistical Package for Social Sciences (SPSS 11) was used. In order to

examine the effects of the discourse structure-based graphic organizers on students' reading comprehension, parametric statistical methods were used for the analysis as the data were normally distributed. Independent samples t-tests and a paired samples t-test were conducted in order to explore how the discourse structure-based graphic organizer treatment affected the participant students' comprehension of each text as well as the students' overall reading performance in the study. The data obtained through the students' responses to the attitude questionnaire were also entered into SPSS and the frequency percentages obtained for each of the items were examined for the analysis related to the second research objective of the study.

Conclusion

This chapter provided information about the research questions, setting, participants, materials and instruments, the treatment period, and the data collection procedure. In the following chapter, the data analysis procedure and the results will be discussed.

CHAPTER 4- DATA ANALYSIS

Introduction

The first aim of this study was to investigate the use of graphic organizers that reflect discourse structures of texts in reading instruction. In addition to this, the study was designed to explore the attitudes of students regarding the use of discourse structure-based graphic organizers as a post-reading activity. The answers to the following questions were sought in the study:

1. How does the use of discourse structure-based graphic organizers affect students' reading comprehension of selected texts?
2. What are students' attitudes towards the use of discourse structure-based graphic organizers in reading instruction?

Seventy students from two intact intermediate level classes took part in the study. The same reading teacher carried out the reading tasks related to the study in both classes. In Intermediate Class 3, out of 36 students 27 completed all four of the tasks. In Intermediate Class 4, out of 34 students 24 completed all four of the reading tasks. Thus, while conducting the data analysis, the results of these 51 students were taken into consideration. Over the two weeks of the study, the students from Class 3 and Class 4 were provided with four reading texts, which were incorporated into the current reading syllabus. In the first week of the study, Class 3 read text A and text B and filled in discourse structure-based graphic organizers as a post reading activity, whereas Class 4 read the same passages but took part in a discussion. In the second week, these classes changed roles. While working on texts C and D, Class 4 filled in discourse structure-based graphic organizers and Class 3 used discussion as a post-

reading activity. After studying each text, the participant students were required to write an L1 summary as a post-test. When the treatment period was over, the students were asked to fill in an attitude questionnaire that aimed at exploring their attitudes towards the utilization of discourse structure-based graphic organizers in reading classes.

Data Analysis Procedure

In order to investigate the first research question of the study, the post-reading test scores of the students from the two classes were analyzed. Before starting the actual data analysis process, the data were analyzed by using Kolmogorov Smirnov normality test to see whether they were normally distributed. Upon the administration of Kolmogorov Smirnov normality test, it was decided that the data gathered through post-tests were normally distributed so parametric methods were considered appropriate to use. Among the parametric methods, t-tests were selected. The means of the post-test scores that were obtained by Class 3 and Class 4 after reading text A were compared by using an independent samples t-test in order to explore whether the graphic organizer treatment made a difference in the experimental group's understanding of the text. The same procedure was followed for the post-test scores of Texts B, C and D respectively. In order to make a final decision about the effectiveness of the graphic organizer treatment, it was decided that one single comparison should be made. Thus, a mean graphic organizer score and a mean discussion score were calculated for each participant student and a paired-samples t-test was conducted in order to compare the effectiveness of the graphic organizer and the discussion treatments.

In order to explore the students' attitudes towards the use of graphic organizers in reading instruction, the data gained from the students' responses to the attitude questionnaire were entered into SPSS. The frequency percentages that were obtained for each item in the questionnaire were used to analyze the responses.

Results

Results of the post-test summaries

Comparison between the experimental and the control group, week 1

In Table 7 below, the means and standard deviations for the first week are presented.

Table 7 - Means and standard deviations, post-test scores, week 1

	TEXT A (max. score 37)		TEXT B (max. score 39)	
	Mean	Standard Dev.	Mean	Standard Dev.
CLASS 3 (Graphic organizers)	18.15	3.23	16.48	3.72
CLASS 4 (Discussion)	13.33	2.88	12.21	2.41

The means presented in Table 7 above appear to show that the experimental group (Class 3) received higher scores on the post-test summaries of both Text A and Text B than the control group (Class 4). The mean scores of the experimental and control groups for Text A were compared by using an independent samples t-test. On average, the students who worked with graphic organizers as a post-reading task (Class 3) performed better ($M= 18.15$, $SE= .62$) than the group of students who used discussion as a post-reading activity (Class 4) ($M= 13.33$, $SE= .59$). The difference between the two groups was significant $t(48)= 5.62$, $p<.05$, and it represented a large effect size $r= .63$. Another independent samples t-test was conducted for the mean

scores of Text B. As was seen for Text A, the graphic organizer group performed significantly better (M= 16.48, SE= .72) than the discussion group (M= 12.21, SE= .49, t(45)= 4.91, p< .05, r= .59). From these results, it can be claimed that the graphic organizer group outperformed the discussion group in both of the summary tasks in the first week of the experiment.

Comparison between the experimental and the control group, week 2

In Table 8 below, the means and standard deviations for the post-test scores of the second week can be seen.

Table 8 - Means and standard deviations, post-test scores, week 2

	TEXT C (max. score 38)		TEXT D (max. score 37)	
	Mean	Standard Dev.	Mean	Standard Dev.
CLASS 3 (Discussion)	13.44	3.47	12.04	2.44
CLASS 4 (Graphic Organizers)	17.71	3.24	18.46	3.92

The means presented in Table 8 above appear to show that Class 4, the experimental group of the second week, obtained higher scores than Class 3, the control group, on the post-test summaries of both Text C and Text D. An independent samples t-test was conducted in order to compare the difference between the mean scores of the experimental and control groups for Text C. On average Class 4, who received the graphic organizer treatment, performed better (M= 17.71, SE= .66) than the discussion group, Class 3 (M= 13.44, SE= .67). The difference between the two groups was significant t(48)= -4.54, p< .05, and it represented a large effect size r= .55. Another independent samples t-test was conducted for the post-test scores of Text D. As was seen for text C, the experimental group performed

significantly better (M= 18.46, SE= .80) than the control group on the post-test summary task of text D (M= 12.04, SE= .47, t(37)= -6.92, p<.05, r= .75). From these results, it can be claimed that the graphic organizer group fared better than the discussion group on both of the summary tasks in the second week of the study.

Comparison of all graphic organizer scores with all discussion scores

It was thought that it would be appropriate to make one single comparison by comparing all of the graphic organizer scores with all of the discussion scores obtained by the participant students. The aim was to arrive at a final conclusion about the effectiveness of the graphic organizer treatment. In order to achieve this, a mean graphic organizer and a mean discussion score were calculated for each participant student. In Table 9 below, the means and standard deviations for all of the graphic organizer and discussion scores can be seen.

Table 9 - Means and standard deviations, all graphic organizer and discussion scores

	Graphic organizer Performance	Discussion Performance
Mean	17.68	12.76
Standard Deviation	3.57	2.88

As presented in Table 9 above, the difference between the means of graphic organizer and discussion performances for the entire group (Class 3 + Class 4) seems to be in favor of the graphic organizer treatment. A paired samples t-test was conducted in order to compare the means of both performances. It was found that the participant students performed significantly better on the post-tests they took after the graphic organizer treatment (M= 17.68, SE= .35) than they did on the post-tests they were given after the discussion activities (M= 12.76, SE= .28, t(193)= 10.85, p< .05, r= .61). It can thus be claimed that using graphic organizers as a post-reading

activity caused the participant students to produce more accurate and complete summaries of the selected texts.

Analysis of the Post-Treatment Questionnaire

Following the two-week treatment, the 51 students who completed all four of the summary tasks were required to fill in a questionnaire that was designed to target their attitudes towards the use of graphic organizers in reading instruction. The questionnaire, which was in a Likert-scale format, included 14 items rated on a three-point scale. In order to respond to the first 13 statements in the questionnaire, the students were to select one of the following three options: *I agree, I am not sure, I don't agree.* The last item was worded in order to require the students to directly specify their preferences regarding the types of post-reading activities used in the study (*filling in graphic organizers, discussion* or *it doesn't matter)*. Whereas the first ten items were intended to tap into the students' attitudes and perceptions concerning the use of graphic organizers in reading classes, the last four items were designed to make the participant students compare the use of graphic organizers with the use of discussion as a post-reading activity. The data obtained from the students' responses to the questionnaire were entered into SPSS and the frequency percentages for each of the responses to the items were examined for the analysis related to the second research objective of the study. Table 10 below presents the frequency percentages for Items 1-10 in the post-treatment questionnaire.

Table 10 - Frequency percentages for Items 1-10 in the post-treatment questionnaire

Items	I agree Percentage	I am not sure Percentage	I disagree Percentage
1. I liked using graphic organizers in reading classes.	41.2	25.5	33.3
2. Graphic organizers helped me to Understand the reading material better.	47.1	33.3	19.6
3. Working with graphic organizers in the reading lesson was a good use of my time.	47.1	31.4	21.6
4. I believe using graphic organizers helped me to write a better summary.	39.2	41.2	19.6
5. If I had not used graphic organizers, I could have understood the reading material just as well.	33.3	56.9	9.8
6. Using graphic organizers enabled me to see the information that was included in the reading passage as a whole.	43.1	45.1	11.8
7. I could not understand the logic of using graphic organizers in a reading class.	21.6	19.6	58.8
8. Using graphic organizers made reading more meaningful and purposeful.	33.3	33.3	33.3
9. The reading classes in which graphic organizers were used were really effective.	54.9	25.5	19.6
10. I would like to work with this type of graphic organizers in the upcoming reading classes.	37.3	49.0	13.7

Table 10 shows that more students liked using graphic organizers in their reading classes than were not sure or did not like it (Item 1). However, more than half of the students had either mixed feelings or negative feelings towards the use of graphic organizers. This might be due to the fact that 'liking' something is associated with fun in the students' minds. Filling in graphic organizers requires a considerable amount of effort on the part of the students. Those who did not choose *'I agree'* might have been affected by this fact.

Almost half of the students agreed with the idea that graphic organizers helped them to understand the reading material better as well as the idea that working with graphic organizers in the reading lesson was a good use of their time. The other half of the respondents either disagreed with or were not sure about the validity of

the aforementioned functions of the graphic organizers used in the study (Items 2 and 3).

The frequency percentages for Item 4 reveal that only 39.2 percent of the students responded that using graphic organizers helped them write a better summary. It can be claimed that a great number of students (41.2 percent) were not sure about whether the graphic organizer treatment contributed to improving the quality of their end-products. On the basis of the responses that the students gave to Item 5 in the questionnaire, it can be claimed that a great majority of the respondent students do not tend to see graphic organizers as a critical tool to understand the reading passages. This might stem from the fact that graphic organizers are considered to be supplementary tools by the participant students that could be replaced by other reading tasks such as discussion.

It should be remembered that one of the rationales behind the use of graphic organizers in reading instruction is to make students see the information that is included in the reading passage as a whole. However, it is interesting to note that only 43.1 percent of the students agreed that graphic organizers achieved this function (Item 6), whereas 45.1 percent of the students were not sure about whether graphic organizers enabled them to see the content of the reading passages as a whole.

Upon being asked to respond to '*I could not understand the logic of using graphic organizers in a reading class' (Item 7),* 58.8 percent of the students expressed their disagreement. This means that the majority of the students could grasp the overall rationale behind the use of graphic organizers in reading lessons. However, it was seen that the students had really mixed attitudes regarding their

perceptions of graphic organizers as an element bringing purpose and meaning to the reading act (Item 8). The frequency percentages for this item show that equal numbers of students selected the *I agree, I am not sure* and *I disagree* options.

The frequency percentages for Item 9 show that the majority of the respondent students found the classes in which graphic organizers were used really effective. This result might be linked to the participant reading teacher's effective handling of the graphic organizers in class. Although more than half of the students held a positive opinion about the reading lessons in which they received the graphic organizer treatment (Item 9), the majority of the respondents did not express a desire to work with similar graphic organizers in their upcoming reading classes (Item 10). This might be linked to the fact that it takes extra effort and time to fill in graphic organizers and it requires a great deal of note-taking and writing as well. The students could have perceived this as an extra burden.

Table 11 below presents the frequency percentages for Items 11-13 in the post-treatment questionnaire.

Table 11 - Frequency percentages for Items 11-13 in the post-treatment questionnaire

Items	I agree Percentage	I am not sure Percentage	I disagree Percentage
11. I felt more involved in what I was doing while filling in graphic organizers than I did during the discussion activities.	39.2	35.3	25.5
12. Filling in graphic organizers made me remember more ideas from the reading passage while writing a summary than the discussion activities did.	45.1	29.4	25.5
13. Having a discussion after reading a passage was just as effective as filling in graphic organizers.	35.3	21.6	43.1

As seen in Table 11 above, Items 11, 12 and 13 in the questionnaire aim at making the students compare the graphic organizer activities with the discussion activities. When the students were asked to compare the feelings of involvement that they experienced during the graphic organizer and discussion activities (Item 11), it was seen that the students who felt more involved in what they were doing during the graphic organizer activities outnumbered those who experienced more involvement during the discussion activities. However, a great number of students (35.3 percent) expressed their uncertainty as regards this issue.

Almost half of the students (45.1 percent) agreed that their involvement with graphic organizers enabled them to remember more ideas from the texts in the process of summary writing in comparison with the discussion activities (Item 12). It can be claimed that almost half of the participant students perceived graphic organizers as a contributing factor to the summary writing task. To the item (Item 13) that required a comparison of the effectiveness of the graphic organizer and the discussion activities, the students gave mixed responses. However, the number of students (43.1 percent) who believe that having a discussion after reading a passage was not as effective as filling in graphic organizers surpasses the number of students (35.3 percent) who hold the opinion that they were equally effective.

Table 12 below presents the frequency percentages for Item 14 in the post-treatment questionnaire.

Table 12 - Frequency percentages for Item 14 in the post-treatment questionnaire

	Graphic Organizers Percentage	Discussion Percentage	It doesn't matter Percentage
14. Which activity would you prefer to do as a post-reading activity?	49.0	27.5	23.5

When the students were asked to specify their preferences as regards the post-reading activities that were used in the study, it was seen that 49 percent of the students were in favor of the graphic organizer activities. Those who preferred the discussion activities made up the 27.5 percent of the whole population of participant students.

Conclusion

This study explored the effectiveness of using discourse structure-based graphic organizers as a post-reading activity on intermediate level students' reading comprehension of selected texts and the attitudes of students towards the use of this type of graphic organizers in reading instruction.

On the whole it can be claimed that the graphic organizers used in this study facilitated better comprehension of the texts. It was seen that the students performed better on the post-tests when they used the graphic organizers as a post-reading activity rather than the discussion activities. The success of the experimental group was consistent across the four texts.

The participant students had mixed attitudes towards the use of discourse structure-based graphic organizers in reading instruction. Although they did not see these graphic organizers as of critical importance for the comprehension of the reading passages, almost half of the respondents agreed with the idea that the graphic

organizers helped them to understand the reading material better as well as the idea that working with discourse structure-based graphic organizers in reading lessons was a good use of their time. The majority of the respondent students found the reading classes in which discourse structure-based graphic organizers were used really effective. However, only a small number of students expressed a desire to work with similar graphic organizers in their upcoming reading lessons. From the participant students' point of view, one advantage of the graphic organizer activities over the discussion activities was that they enabled them to remember more ideas from the reading passage while writing a summary.

In the next chapter, the findings of the study and implications for discourse structure-based graphic organizers will be discussed. Chapter 5 will also consider the limitations of the study and directions for future research.

CHAPTER 5- CONCLUSION

Introduction

This study investigated the effectiveness of using discourse-structure based graphic organizers as a post reading activity on students' reading comprehension of selected texts, and the attitudes of students towards the use of discourse structure-based graphic organizers in reading instruction. In order to seek answers to the research questions, the required data were gathered through the students' summaries of the four texts (texts A, B, C and D), which were administered to 51 participant students from two intermediate classes at Uludağ University School of Foreign Languages. In addition, following the two-week treatment, these students were required to fill in a questionnaire which aimed to explore their attitudes towards the use of graphic organizers in reading instruction.

In the following sections of this chapter, the findings, pedagogical implications and limitations of the study are discussed. Finally, suggestions for further studies and overall conclusions are presented.

Findings and Discussion

The findings of the current study regarding the effects of discourse structure-based graphic organizers on students' reading comprehension of selected texts will be presented and discussed with reference to the literature. Then, the findings related to student attitudes towards discourse structure-based graphic organizers will be presented and discussed.

The effects of the discourse structure-based graphic organizers on students' comprehension of selected texts

The quantitative data gathered from the students' summaries which were administered at the end of each procedure during the two-week treatment shed some light on the use of the discourse structure-based graphic organizers in reading instruction. The post-test scores of the two groups for both the graphic organizer and the discussion performances were calculated and compared with each other to see the effects of the graphic organizer treatment. This comparison indicated that the students performed better on post-tests when they completed discourse structure-based graphic organizers as a post-reading activity in comparison to when they took part in a discussion as a post-reading task. The success of the graphic organizer treatment was consistent across the four texts used in the study. This finding supports what the literature indicates about the use of graphic organizers in reading instruction.

According to Suzuki (2006), graphic organizers might work well when students are required to find key points and note information in the text. Graphic organizers improve active processing and reorganization of information so it is recommended that they should be exploited as a support or an alternative to note-taking and summarizing (Suzuki, 2006). The success of the experimental group could be explained from two perspectives on the basis of this information. While completing the graphic organizers, the students felt an urgent need to find the key points in the text so they had an opportunity to reorganize the information in the reading passage. The post test used in this experimental study was writing an L1 summary. Since the experimental group, which was given the graphic organizer

treatment, was more successful in all four of the summary tasks, it can be claimed that the graphic organizers used in this study acted as a scaffold to the summary tasks.

The findings of the current study are also in line with the propositions of the Dual Coding Theory. The theory posits that enhanced processing of information can take place if linguistic input is presented with congruent visual input because this facilitates dual coding of information (Paivio, 1991). Since the graphic organizers used in the present study included lines, arrows and spatial arrangement, the students had an opportunity to store the contents of the texts in the form of both verbal information and visual images. This might be one of the reasons that led to the higher scores in the post-tests given after the students had been involved in graphic organizer activities. A study carried out by Suzuki et al. (2008) found that the spatial graphic display enhanced EFL readers' comprehension of sentences more than the sentential display did. The results of the current study appear to support their finding.

Tang (1992) carried out an experiment that explored the effect of graphic representation of knowledge structure of classification on intermediate level ESL students' comprehension of content knowledge. The subjects dealt with the same passage in two different groups: the graphic and the non-graphic group. The written recall protocols, which were used as post-tests, showed that the graphic group performed significantly better than the non-graphic group in terms of the information recalled from the text. Similarly, in the current study, the post-test summaries indicated that the graphic organizer group was able to produce a higher number of macro and micro level ideas when compared with the discussion group. This finding also supports the conclusions of a study conducted by Kools et al. (2006). The results

of their study showed that graphic organizers had a strong effect on text comprehension at both macro and micro levels.

A study by Carrell, Pharis and Liberto (1989) attempted to test the effect of using semantic mapping as a post-reading activity. After reading the passage, one of the students in the experimental group was asked to develop a class post-reading map on the board by gathering input from the rest of the class. When the students were required to answer open- ended questions as part of a post-test, the semantic mapping group did significantly better than the control group. In the present study, after the students completed the graphic organizers on their worksheets in pairs, individual students took turns to fill in the same graphic organizers on the board. This activity might have facilitated more exposure to and more involvement with the four texts. The aforementioned possibility could be taken into consideration while explaining the higher post-test scores gained after the graphic organizer performances.

Grabe and Jiang (2010) propose a set of guidelines that teachers should pay utmost attention to while developing graphic organizers. According to Grabe and Jiang (2010), well-developed graphic organizers should highlight the most salient information in the text. One of the aims should be to reflect the macro level structure of the text as well as the local structure. Moreover, the teacher should be sensitive about making the interrelationships and patterns of organization in the text clear to the students. Apart from these, it is a necessity to present the content of the text in a way that is closest to the original while developing discourse structure-based graphic organizers. If the graphic organizers in question are partially completed, the teacher should make sure that they have effective clues for the blanks (Grabe & Jiang, 2010). If the texts and the related graphic organizers used in this study are scrutinized, it

could be observed that the graphic organizers meet the criteria proposed by Grabe and Jiang (2010). This might have been one of the reasons that caused the experimental group to perform significantly better than the control group in all four of the summary tasks.

The present study also confirms the findings of previous studies that have highlighted the link between drawing students' attention to discourse structures in texts and facilitating improved reading comprehension (Carrell, 1984, 1985; Martinez, 2002; Wang & Cao, 2009). Martinez (2002) investigated the use of text structure as a tool to facilitate and improve EFL students' reading comprehension of a text written in English. Martinez (2002) concluded that when EFL readers were made to consciously focus on the discourse structure of a text, their performance in reading comprehension was positively affected and they were able to reproduce more ideas from the text in question. Similarly, in the current study, the experimental students were able to reproduce more macro and micro level ideas from the texts in the summaries they wrote after completing the discourse structure-oriented graphic organizers.

Student attitudes

The second research question, which was related to student attitudes towards the use of discourse structure-based graphic organizers in reading instruction, was addressed through the questionnaire that was given to the 51 participant students. The students' responses revealed that they had mixed attitudes towards the use of graphic organizers in reading instruction.

From the students' responses, it was seen that more students liked using graphic organizers in their reading classes than were not sure or did not like it.

However, more than half of the students were neutral or negative towards graphic organizers. Almost half of the students agreed with the idea that graphic organizers helped them to understand the reading material better as well as the idea that working with graphic organizers was a good use of their time. From these responses, it can be claimed that a considerable number of students (47.1 percent) saw graphic organizers as a supplementary tool to understand the texts and filling in graphic organizers meant being involved in a useful activity. However, a great majority of the students did not tend to see graphic organizers as a critical tool to understand the content of the reading passages. This could stem from the fact that the students saw graphic organizer activities as replaceable by other reading tasks that could produce equally effective results in terms of comprehension of the ideas present in the texts.

Two of the items in the questionnaire (Items 4 and 12) aimed at understanding whether the graphic organizer treatment affected the students' summary performance. Most of the respondent students expressed their uncertainty when they were asked whether the graphic organizer treatment caused them to produce better summaries. However, when the students were asked whether the graphic organizer treatment helped them to remember more ideas from the texts during the summary writing task in comparison with the discussion treatment, almost half of the students (45.1 percent) answered in the affirmative. This might be related to the visual argument regarding graphic organizers. Lines, arrows and spatial representation that come with graphic organizers make it possible to represent the content of the reading passage in a combination of both visual images and verbal information. This fact might have facilitated the retrieval of more ideas during the summary writing process. From another perspective, completing graphic organizers

might be seen as a kind of preparation for a summary task because students are expected to note down the key information in the text to fill in graphic organizers. The students who stated that the graphic organizer treatment helped retrieval of more ideas might have created mental images of the graphic organizers during the summary writing task.

The majority of the students could grasp the overall rationale behind the use of graphic organizers and more than half of the students held a positive opinion about the reading lessons in which they were involved in graphic organizer activities. Interestingly, the majority of the students did not express a desire to work with similar discourse structure-based graphic organizers in their upcoming reading classes. This might be linked to the fact that it takes extra effort and time to fill in graphic organizers and it requires a great deal of note-taking and writing as well. The students could have perceived this as an extra burden.

The item in the questionnaire that required a comparison of the effectiveness of the graphic organizer and the discussion activities elicited mixed responses. However, the number of students (43.1 percent) who believed that having a discussion after reading a passage was not as effective as filling in graphic organizers surpassed the number of students (35.3 percent) who held the opinion that that they were equally effective. Similarly, when the students were asked to specify their preferences as regards the post-reading activities that were used in the study, it was seen that 49 percent of the students were in favor of the graphic organizer activities. Those who preferred the discussion activities made up only 27.5 percent of the whole population of participant students. This difference in percentages might be attributed to the learning styles of the participant students. The possibility is that the students

with visual learning orientations outnumbered those with auditory learning orientations. As stated by Lightbown and Spada (2006), learning takes place in many different ways: by seeing and hearing; reflecting and acting; reasoning logically and intuitively; and memorizing and visualizing. Thus, each student might have stated a preference in line with his or her learning orientations. A single post-reading activity is doomed to fail to address the needs of all learners.

In the literature, only two studies have explored student attitudes towards graphic organizers. In Tang's (1992) study, 18 of the 22 students in the experimental group were positive about using graphic organizers to study textual information and claimed that graphic organizers helped comprehension; one student did not find the graphic organizer treatment helpful, and three students were undecided. In Jiang's (2007) study, the experimental group was required to fill in a short attitude survey when the instruction period was over. The results of the survey demonstrated that the 179 students, who received the graphic organizer treatment over a period of 16 weeks, tended to have positive attitudes towards graphic organizers with an average rating of 3.93 on a rating scale that had 5.00 as its highest point. Both the students' general impression of graphic organizer treatment and their perception of its immediate impact were positive with average ratings above 4. However, the students' perception of the long-term effects of graphic organizer instruction tended to be neutral with an average rating of 3.09. The experimental students claimed that the exploitation of graphic organizers as classroom activities helped to boost comprehension. Moreover, graphic organizers were considered to be an effective support for text comprehension by the experimental students. Similarly, in the current study, more participant students agreed that graphic organizer activities

helped comprehension of the texts than disagreed or were unsure. In addition, the item that asked whether filling in discourse structure-based graphic organizers was a good use of time (Item 3) elicited more positive responses than negative or neutral responses. Most of the participant students found the reading classes in which graphic organizer activities were done effective. Almost half of the students stated that filling in discourse structure-based graphic organizers helped retrieval of more ideas during the summary writing task in comparison to the discussion activities. The aforementioned findings of the current study verify what the literature suggests about student attitudes towards graphic organizer instruction.

Given the fact that the graphic organizer treatment caused the participant students in this study to perform significantly better on the post-tests, one would expect more positive answers from the students regarding their attitudes towards graphic organizers. However, the analysis of the post-treatment attitude questionnaire showed that the students did not seem to be aware of the positive effect of the treatment on their summary writing performance. This might be due to the fact that the participant students were not informed about the results of the post-tests during the course of the study. Another point that is worth highlighting is that the students gave contrasting answers to some of the items in the questionnaire. To exemplify, although almost half of the students found the graphic organizer activities effective and facilitative in terms of comprehension, a great majority did not express a specific desire to work with similar graphic organizers in their upcoming reading classes. This phenomenon might be indicative of two possibilities. The students' lack of understanding of the questions might have caused them to give contrasting answers. This could also be related to some problems in the wording of the items in the

questionnaire. The other explanation to this phenomenon is that the students might have responded without giving much thought to the ideas expressed in the items of the questionnaire.

The responses of the Turkish EFL students' to the attitude questionnaire could also be interpreted from a cultural perspective. Turkish culture is a culture that does not value printed word as much as it values oral tradition. This cultural attribute might have caused the Turkish EFL students who took part in the study to give less positive answers than expected since graphic organizer activities necessitate a lot of writing and note-taking.

While Tang (1992) worked with ESL students, Jiang (2007) tested her organizers on Chinese EFL students. It can be claimed that, in both of the aforementioned studies, the experimental students tended to have more positive attitudes towards the use of graphic organizers in reading instruction in comparison to the Turkish EFL students who took part in the current study. It makes sense to suggest that the subjects of the present study had mixed attitudes towards the graphic organizer treatment. Several points need to be considered to explain the mixed attitudes of the experimental students in the current study.

In Tang's (1992) study, the experimental students were exposed to only one reading passage and were asked to fill in the related text structure-based graphic organizers. Thus, the novelty effect of the treatment might have caused the respondents to give more positive answers. In the present study, the students had already been familiarized with graphic organizers by the time the experiment started. Therefore, the novelty effect of the graphic organizer treatment can be said to have worn off by the time of the study.

Jiang's (2007) study was a longitudinal one that extended over a period of sixteen weeks. It can be claimed that the experimental students had enough time to examine the full impact of the graphic organizer treatment on their reading comprehension skills. Each week, the participant students dealt with one text coming from their own course books and were required to fill in the related text structure-based graphic organizers. In addition, the completion of the graphic organizers had a positive washback effect on the participants of the study because the students' success in these tasks affected their school grades and overall performance. However, the current study was carried out over a two-week period so the participant students did not have enough time to observe the full impact of the graphic organizer treatment. What is more, the intense nature of the treatment (four texts over a period of two weeks) might have strained and tired the students. As a result, the students might have developed less positive attitudes towards the graphic organizer instruction. It could also be suggested that the participants of the current study would have better perceived the value of the graphic organizer activities and would have given more positive responses if success in the graphic organizer treatment meant higher school grades.

Pedagogical Implications

The present study has provided evidence of the effectiveness of graphic organizer activities in improving students' reading comprehension of selected texts. With regard to utilization of graphic organizers, a number of implications for reading instruction and materials development could be discussed.

The researcher of the current study was able to develop graphic organizers for four texts coming from a published reading textbook called Reading for the Real

World 1 (Malarcher & Janzen, 2004). The present study demonstrates that discourse structures of texts as well as textual content can be presented to students effectively by exploiting basic graphic organizer designs and by paying attention to basic principles. If teachers are informed about these designs and principles, they can create their own graphic organizers to accompany the texts they have selected. As a result, the completion of discourse-structure based graphic organizers in order to comprehend reading passages might become common practice for EFL students.

Publishers should also give thought to the inclusion of discourse structure-based graphic organizers in published reading materials. If publishers make graphic organizers available, teachers can use them in the classroom effectively and efficiently after a brief training period.

The present study also shows that requiring active involvement from students is necessary in order to facilitate effective teaching and learning. In the current study, the completion of the graphic organizers caused the students to be more actively involved with the texts and to take charge of their own learning. Classroom teachers should make sure that the tasks they have devised are engaging enough and necessitate active participation of their students.

The fourth pedagogical implication of the present study is that discourse structure-based graphic organizers might be utilized in a preparation session for a summary task by classroom teachers and students because graphic organizers have the attribute of organizing textual information and giving it additional coherence.

In the present study, the participant teacher used graphic organizers to facilitate the students' comprehension of the reading passages in the classroom environment and this technique worked efficiently. This could be taken one step

further and graphic organizers can be utilized as an assessment tool in actual testing situations. Since filling in graphic organizers requires seeing the inter-relationships between ideas, understanding main ideas, focusing on key vocabulary and making some inferences, they might be used to test a number of reading constructs.

The sixth pedagogical implication of the current study is that the graphic organizer treatment should be extended over a period of time much longer than two weeks. Teachers should ensure that students are consistently and continuously exposed to graphic organizer tasks. In this way, students can be given an opportunity to observe the full impact of visual facilitation on their language performance and they might develop more positive attitudes towards graphic organizer activities.

Limitations of the Study

Although the findings of the present study have revealed that filling in discourse structure-oriented graphic organizers as a post-reading activity caused intermediate level students to perform significantly better on post-tests when compared with the discussion activities, several limitations need to be considered.

First of all, the participants of the study were EFL students attending an intensive one-year language program at a university. In this respect, the findings are limited to participants with a similar profile. Second, although the number of participants involved in the study was 70, the number of students who completed all four of the post-test summary tasks was only 51. Thus, the number of participants involved in the study was limited. It would be more insightful to replicate the study with a greater number of participant students. Third, the study investigated only one level of language proficiency, the intermediate level. A study that included different proficiency levels could have facilitated seeing whether the effects of the graphic

organizer treatment varied across different proficiency levels. Fourth, the study was conducted over a short time period with only four different texts because of institutional restraints and time constraints. Seeing the long term effects of discourse structure-oriented graphic organizers, with more texts, would have been more helpful to broaden and deepen our understanding of graphic organizers. Fifth, in the present study, the effectiveness of the graphic organizers was compared with only one type of post reading activity, discussion. A comparison with one or two additional types of post-reading activities might have provided more insight into the effectiveness of the graphic representation of textual information. Sixth, it should be taken into consideration that in the literature, graphic organizers have been recommended to be used as a preparation for a summary task. Thus, administering a different type of post test like a multiple choice test could have produced different results. It should also be noted that this study lacks any qualitative research attempts to explore student attitudes towards discourse structure-based graphic organizers more comprehensively.

Suggestions for Further Research

Based on the findings of the present study, various important areas can be suggested for further research related to the use of discourse-structure oriented graphic organizers in reading instruction. First of all, the study was limited to 51 students from intermediate level. It is necessary to conduct the study with a larger number of students from different levels, such as elementary, pre-intermediate and upper-intermediate levels, to investigate any differences between the aforementioned levels. In addition, instead of giving students a questionnaire, semi- structured interviews might be conducted with the participant students in order to have a deeper

insight into their perceptions regarding the exploitation of graphic organizers in reading classes.

Third, because this study lasted for only two weeks due to time constraints and institutional restraints, it is essential to conduct this study over a longer period of time so more texts and a higher number of graphic organizers can be included.

Fourth, this study used only one type of post-reading activity (discussion) to compare with the effectiveness of discourse structure-oriented graphic organizers. Further studies are necessary to determine whether the students still do better on post-tests after completing graphic organizers when the graphic organizer activities are compared with post-reading tasks other than discussion. Future studies could also address the effects of student-created graphic organizers on text comprehension.

Sixth, a study that explores whether the inclusion of discourse-structure based graphic organizers has any effect on students' reading comprehension skills would be enlightening. Finally, it would be interesting and informative to learn the results of experimental studies that explore the effectiveness of the graphic organizer treatment in improving language skills other than reading.

Conclusion

This study has attempted to explore the use of discourse structure-oriented graphic organizers in reading instruction. The study has also investigated the attitudes of the students regarding the use of graphic organizers in reading instruction. The results of the study revealed that the students did significantly better on post-test summary tasks after filling in graphic organizers when their post-test scores obtained after the graphic organizer performances were compared with those obtained after the discussion performances. The success of the experimental group was consistent

across the four texts used in the study. In addition, the data gathered from the administration of the attitude questionnaire showed that the students had mixed attitudes towards the use of discourse structure-based graphic organizers in reading instruction. The results of the study and the pedagogical implications discussed in this chapter might assist teachers in organizing the tasks in their reading classes and helping students to better comprehend reading texts.

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APPENDICES

Appendix A: Reading Texts

Studying Headaches (Text A)

Headaches are a big problem. But they are not just a problem for the person suffering from the headache. They are a problem for society as well. Each year, millions of people suffer from severe headaches that keep them from doing their jobs. In fact, according to one estimate, headaches cost individuals and businesses more than fifty billion dollars each year! This is one of the reasons research into headaches has become a worldwide effort.

Although he did not know much about how headaches work, Hippocrates was the first doctor to find a way to treat them. Before 400 B.C., Hippocrates discovered that the bark from willow trees was useful in treating pain. He made a white powder from the tree's bark and gave it to his patients.

Hippocrates did not know about it, but he was actually prescribing a natural chemical in willow bark called salicin. When a person eats salicin, the chemical is changed inside her or his body into salicyclic acid. It turns out that salicyclic acid is good for stopping pain, including headache pain, but it is bad for a person's stomach. In the 1800s, a chemist in Germany changed the acid's form a little to make it easier for people to take. This new form of the chemical was called acetylsalicylic acid, commonly known as aspirin today.

Aspirin was used throughout most of the 1900s to treat headaches, but doctors had little idea about what really caused headaches. When doctors knew the cause of a disease, they can find better ways to treat it. Therefore, as medical

technology developed, doctors began to use the technology to learn more about the human brain and about headaches.

Currently, doctors classify headaches into two general types: primary and secondary. A primary headache is a condition suffered as only the headache itself. On the other hand, a secondary headache is one caused by another condition. For example, someone who catches the flu may suffer from headaches along with other symptoms of the illness. Flu headaches are thus secondary headaches.

For primary headaches, doctors have determined three possible causes. One kind of primary headache is caused by stress. Doctors usually call these tension headaches. Such headaches are characteristically felt on both sides of the head as a dull, steady pain.

Another kind of primary headache is the migraine headache. Doctors believe that these headaches are caused by reduced flow of blood to certain parts of the brain. A migraine sufferer usually feels intense pain on one side of the head. The sufferer also becomes sensitive to light and noise. If the migraine is severe, the sufferer may vomit repeatedly.

The third kind of primary headache is known as the cluster headache. Cluster headaches typically occur around the same time each day for weeks and months at a time. The person suffering from this kind of headache usually feels pain on one side of her or his head, and the pain is centered around one of the person's eyes. Doctors do not know much at present about cluster headaches but they seem more common among men and could be related to alcohol or other things that affect a person's blood flow.

Using computers and more advanced medical equipment, doctors continue to learn more about what happens in the brain before and during headaches. Especially in the case of migraines, some doctors believe they have found the part of the brain that sets off the reaction for severe attacks. With this new insight into brain processes, doctors hope new ways will be discovered for stopping disabling headaches before they begin.

The History of the Death Penalty (Text B)

In the United States, the death penalty is sometimes given to people who are guilty of committing very serious crimes. These crimes could include first-degree murder and treason, or betraying one's country. Capital punishment was brought to America by early settlers from Europe. In early America, people who were found guilty of murder and rape were routinely executed, either by hanging or firing squad. Convicted burglars, thieves and even counterfeiters often received the death penalty. This was thought to be a deterrent to other criminals.

However, people began to disagree with the severity of the death penalty. Some people thought that society was to blame, blaming the criminal's environment instead of blaming the criminal. People began to feel that criminals were not evil. Instead, they were victims of poverty, poor education and lack of opportunity. Society should help criminals, rather than kill them they thought.

Another reason for the change in thinking was economic. Prisons were very expensive. Early American states could not afford to keep many people in prison. Rather than keep them in prison, convicted criminals were executed. But as society became richer during the Industrial Revolution, prisons became more affordable for society. Because of this and other reasons, keeping criminals in prison rather than executing them became a viable option.

By the mid-1800s, many states banned the death penalty except in the case of convicted murderers. But those states were mostly the northern states. Southern states kept the death penalty for many crimes. That trend continues in modern America. Even today, most executions happen in southern states. Southern states are considered more conservative than northern states. In southern states today, death by

injection is the standard form of execution. It is considered the most humane form of death penalty.

In the last few years in America, the debate over the death penalty has grown more widespread. A recent argument against the death penalty is that some of the people who are found guilty and sentenced to die are not actually guilty. New methods of verifying evidence, such as DNA testing, have helped free many death-row inmates. Because in many cases, criminals cannot be proven 100 percent guilty, it is not right to sentence them to death, opponents say. There is a chance that they may be innocent. In fact, the governor of Illinois recently halted all executions in his state. In Illinois, some death-row inmates were shown later to be innocent of the crime for which they were imprisoned**.** After that, the governor was afraid that some people being executed were wrongly convicted.

Another argument against the death penalty is the high cost of executing a prisoner. Someone sentenced to die has the right to appeal the sentence several times. The state has to defend its case each time before a higher court. One study found that it costs more than a million dollars in legal costs for a prisoner to exhaust all appeals against the death penalty.

Despite the often heated national debate, the majority of Americans are still in favor of the death penalty. According to a recent study, approximately 65 percent of Americans still believe that the death penalty is appropriate for crimes such as first-degree murder**.** In cases of mass murder**,** the percent in favor of capital punishment is even higher. More than 80 percent of Americans wanted the death penalty given to Timothy McVeigh, the man who killed hundreds in Oklahama City bombing.

Cheating in Sports (Text C)

Sports are about competition. The goal of every athlete, or every team is to win. Unfortunately, two factors have been pushing American sports in an unhealthy direction. One of these factors is the obsession with winning, no matter what the cost. The other factor is money. These two factors put extreme pressure on both players and coaches to focus single-mindedly on winning. This has resulted in a problem that is spreading and becoming more serious. That problem is cheating.

Of course there are rules in all sports to penalize cheating. So coaches and players have had to come up with ingenious ways to get around the rules. Getting a competitive edge, even unfairly, is seen as a "strategy" rather than cheating. Illegal acts are now even being accepted as part of the game. Coaches encourage players to cheat or coaches simply look the other way when they know players commit illegal acts during games. And referees rarely do anything to discourage cheating, or they impose minimal penalties.

A professor of sports and recreation, Dr. James Frey, introduced the term normative cheating to refer to the methods of cheating commonly used in sports today. This refers to strategies used to create conditions of some advantage over an opponent**.** These strategies do not actually break the rules. Instead, coaches and players have learned how to use loopholes in the rules to gain a competitive advantage. There are many forms of normative cheating. In basketball, for example, it is common for a player to pretend to be fouled in order to receive an undeserved foul shot. In football, players are typically coached to use illegal techniques to hold or trip opponents without referees noticing. And in baseball, home teams often "doctor" their fields to suit their strengths and minimize the strengths of their

opponents. For example, if a home team knows they will face a fast team, they will spread water or sand between bases to slow down the runners of the other team. Other techniques used by home teams to cheat include increasing the heat in the visitors' locker room to make the athletes sluggish**.** And some schools even use psychological tricks such as painting the visitor's locker room pink, a color said to reduce strength and make people less aggressive.

Violence is another area in which normative cheating has crept into sports. Sports such as football, soccer and hockey seem to encourage player aggression beyond ethical limits. Players are taught to hit opponents, not just to block or tackle**,** but to make opponents **"**pay the price". The assumption is that physically punishing other players will increase the chances of the opponent losing control of the ball, dropping concentration, and/or executing a poor play the next time. And of course, there is always the hope that the other player is hit so hard, they must be removed from the game and will be replaced by a less talented substitute.

The "winning-at-all-costs" philosophy of sports today has had an adverse effect on athletes. Research has shown that participation in sports actually hinders the normal development of moral reasoning in athletes. In a study of 10,000 athletes in both high school and college, it was found that athletes in general scored lower on tests of moral development than non-athletes. Additionally, male athletes scored lower than female athletes. And the worst news of all, the longer athletes participated in sports, the lower their moral reasoning scores on the test.

Ideas about Beauty (Text D)

Researchers have collected convincing evidence that people tend to rate beauty in much the same way. Groups even from different cultures do not really show that much difference in judging the main factors of beauty. However, researchers do not agree on whether the factors which influence how most people judge beauty come from genetics (nature) or culture (society).

Devendra Singh, a psychologist at the University Of Texas at Austin, conducted an experiment to find out if different men found different female body shapes attractive. Dr. Singh gave drawings of different female body shapes to a variety of men and asked them to choose the most attractive body shape. Even though men came from a wide range of cultural backgrounds, they all tended to rate the "hourglass" body shape as the most attractive. In fact, Dr. Singh found that any woman whose waist is 70% as wide as her hips is judged as attractive by most men no matter how big the woman is overall. Body shape, not weight, seemed to be viewed as the critical factor for attractiveness by men in this survey.

Dr. Singh explained this result from the perspective of evolution. Women who develop an hourglass shape have a relatively higher level of estrogen, female hormone, than women who do not have this body shape. Because estrogen levels also influence fertility, men may subconsciously view a woman with an hourglass figure as a good candidate for producing children. Therefore, according to Dr. Singh, the men who choose these types of women have the potential for having more children. Over time, evolution would favor men who have inherited genes from their fathers which influence the selection of this type of "fertile" woman.

Douglas Yu, a biologist at Imperial College in London, disagrees with Dr. Sing's hypothesis. Dr. Yu thinks that culture, especially culture developed through exposure to mass entertainment and advertising, has had the largest influence on how men judge beauty. In order to test this theory, Dr. Yu travelled to Southeast Peru to interview men in an isolated community far from the reach of television, movies and magazines. Through his own survey, Dr. Yu found that the men in this isolated community preferred heavier women with a wider waist than the body shape preferred by the men in Dr. Singh's study. Because this small community has lived apart from western mass communication**,** their own culture has not been influenced by outside standards of beauty.

In order to check the reliability of his study, Dr. Yu surveyed two other groups of men from this same community. However, the second and third groups surveyed by Dr. Yu had more exposure to western entertainment and advertising. The results of these later surveys showed that as men from this isolated community came into contact with western movies and magazines, their standards of beauty began to change more toward the western standard of beauty. Dr. Yu concluded from these findings that even if evolution played a part in men's selection of mates, cultural influences are more powerful in the end and work faster in changing men's standards.

With both satellite communication and the Internet flooding every corner of the world with images and information from almost every culture, it is becoming harder and harder to find isolated communities. Soon it may be impossible to prove which side is correct in the genetics versus culture debate simply because there will be no uninfluenced groups left to ask.

Appendix B: Graphic Organizers

GRAPHIC ORGANIZERS: STUDYING HEADACHES (Text A)

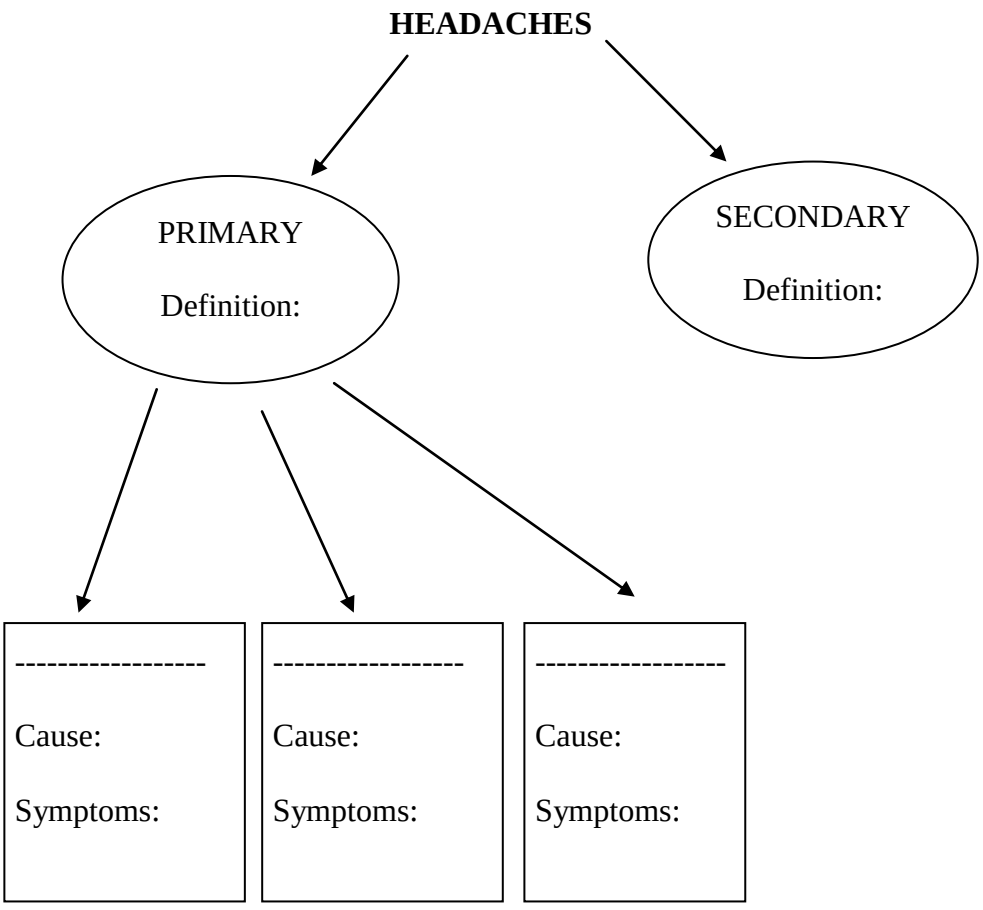
Scientists are interested in finding about headaches because they _____

Aspirin is used to t _____ headaches.

THE DEVELOPMENT OF ASPIRIN

STEP 1:
STEP 2:

CLASSIFICATION OF HEADACHES



Doctors are hopeful that they will stop headaches before they d us.

THE HISTORY OF THE DEATH PENALTY (Text B)

Today, in the United States, capital punishment is given to people who commit v s c.

In Early America, b, t, c often received the death penalty.

WHY DID PEOPLE DISAGREE WITH THE DEATH PENALTY IN TIME?

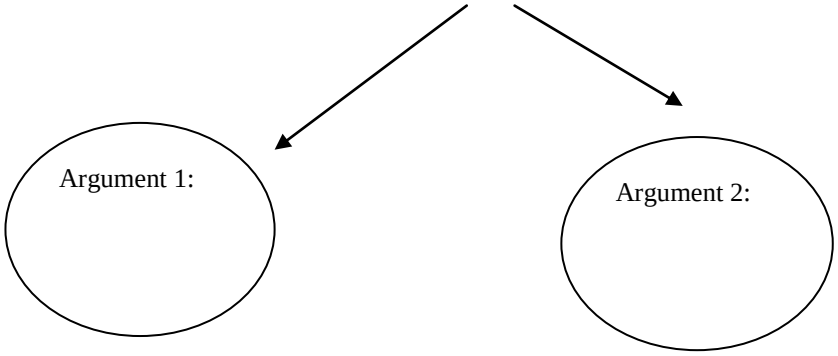
REASON 1:

REASON 2:

APPROACHES OF SOUTHERN AND NORTHERN STATES TO DEATH PENALTY

SOUTHERN STATES	NORTHERN STATES

ARGUMENTS AGAINST THE DEATH PENALTY

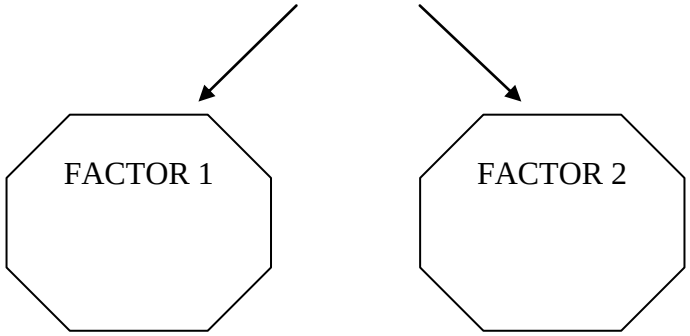


CONCLUSION

Americans today still f death penalty for very serious crimes.

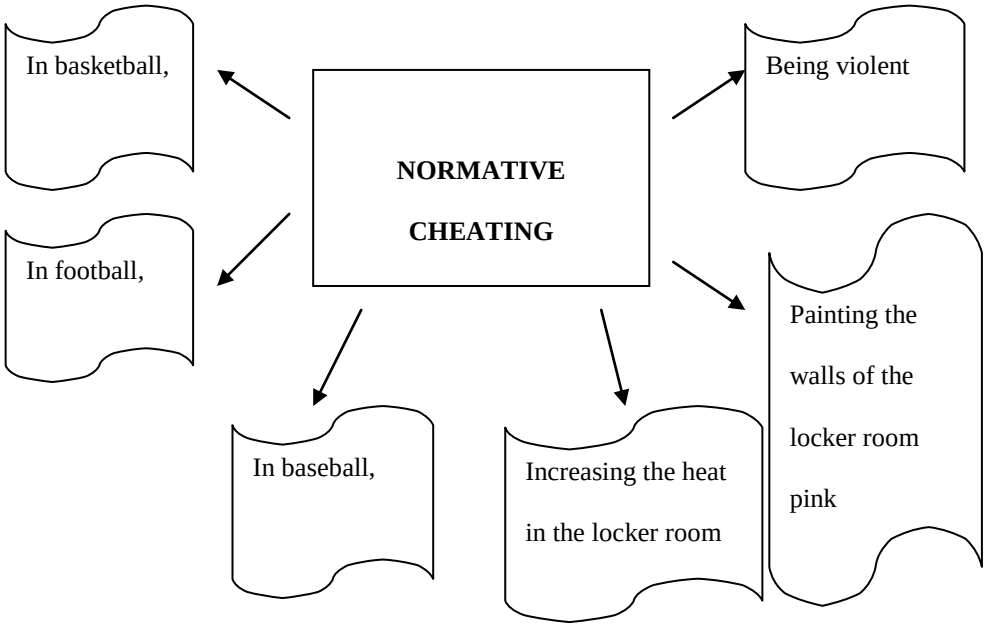
CHEATING IN SPORTS (Text C)

Two factors that push American sports in an unhealthy way



CLEVER WAYS TO BREAK THE RULES IN SPORTS

Getting a competitive edge is seen as a strategy rather than cheating.
Coaches
Referees

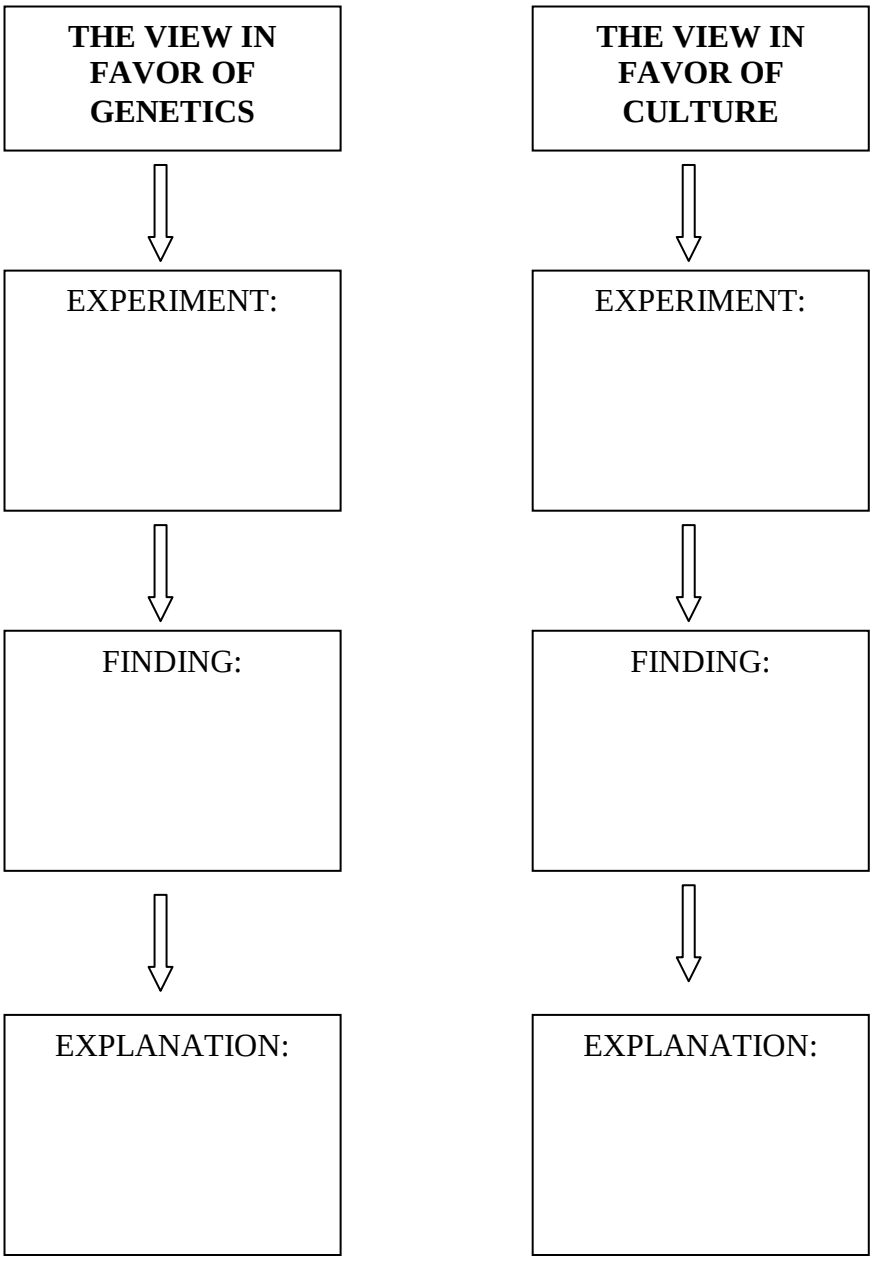


The "winning – at – all – costs" philosophy affects the [m] [d] of athletes in a negative way.

IDEAS ABOUT BEAUTY (Text D)

There is agreement that people [j] beauty in the same way.

However there is no agreement on whether this is the [i] of genetics or culture.



It is difficult to prove who is correct in the genetics [v] culture debate.

Appendix C: A Sample Scoring Scale (English and Turkish Versions)

English Version

CHEATING IN SPORTS Total points: 38

1. Two factors affect American sports in an unhealthy way: obsession with winning and money. RATE: 3

2. Both players and coaches focus single-mindedly on winning. RATE: 1

3. Cheating is a serious and spreading problem in American sports. RATE: 2

4. Coaches and players invent clever ways to get around the rules. RATE: 2

5. Coaches encourage players to cheat. RATE: 2

6. Coaches pretend not to see the illegal acts committed by their own players. RATE: 1

7. Referees do not do anything to discourage cheating. RATE: 1

8. Referees impose minimal penalties. RATE: 1

9. Normative cheating is a new term in American sports. RATE: 2

10. Normative cheating is about using strategies to have some advantage over an opponent. RATE: 3

11. There are many forms of normative cheating. RATE: 2

12. Being violent in sports is a form of normative cheating. RATE: 2

13. Some players paint the walls of the locker room pink to make athletes less aggressive. RATE: 2

14. Some increase the heat in the locker room to make athletes slower. RATE: 2

15. In baseball, players change their fields in an illegal way to suit their strengths. RATE: 2

16. In football, players use illegal techniques to hold or trip opponents. RATE: 2

17. In basketball, players pretend to be fouled to receive an undeserved foul shot. RATE: 2

18. ‘The winning at all costs’ philosophy affects the moral development of the athletes negatively. RATE: 2

19. Athletes score lower on moral development tests. RATE: 2

20. The longer athletes do sports, the less importance they give to moral values in sports. RATE: 2

Turkish Version

SPORDA ŞİKE Toplam Puan: 38

1. Amerikan sporunu olumsuz etkileyen iki faktör var: kazanma hırsı ve para. Puan:3

2. Hem oyuncular hem koçlar sadece kazanmaya odaklıdır. Puan:1

3. Şike yapma Amerikan sporunda ciddi ve yayılan bir problemdir. Puan:2

4. Kuralları kendi lehlerine çevirmek için hem oyuncular hem de koçlar zekice yollar buluyorlar. Puan: 2

5. Koçlar oyuncuları şike yapmaları için cesaretlendiriyorlar. Puan: 2

6. Koçlar oyuncuları tarafından yapılan kural dışı hareketleri görmezden geliyorlar. Puan:1

7. Hakemler şikeyi önlemek için bir şey yapmıyorlar. Puan: 1

8. Hakemler verilmesi mümkün cezanın en azını veriyorlar. Puan: 1

9. Normatif şike Amerikan sporunda yeni bir terimdir. Puan: 2

10. Normatif şike rakibe üstünlük sağlamak için birtakım stratejiler kullanmaya denir. Puan:3

11. Normatif şikenin pek çok çeşidi mevcuttur. Puan: 2

12. Sporda şiddet kullanma normatif şikeye girer. Puan: 2

13. Bazı oyuncular karşı takımı daha az agresif yapmak için soyunma odasını pembeye boyuyorlar. Puan: 2

14. Bazıları karşı takımın oyuncularını yavaşlatmak için soyunma odasındaki ısıyı yükseltiyorlar. Puan: 2

15. Beyzbolda bazı oyuncular kendi güçlü noktalarının öne çıkması için sahayı legal olmayan bir şekilde değiştiriyorlar. Puan: 2

16. Futbolda oyuncular karşı takımı tutmak ya da düşürmek için legal olmayan teknikler kullanıyor. Puan: 2

17. Basketbolda oyuncular hak edilmemiş bir atış hakkı kazanmak için kendilerine faul yapılmış gibi gösteriyorlar. Puan: 2

18. Her ne pahasına olursa olsun kazanma felsefesi atletlerin ahlaki gelişimini olumsuz yönde etkiliyor. Puan: 2

19. Ahlaki gelişim testlerinde sporcular daha düşük skorlar elde ediyorlar. Puan: 2

20. Sporcular ne kadar uzun süre sporla uğraşırlarsa ahlaki değerlere verdikleri önem de bir o kadar az oluyor. Puan: 2

Appendix D: A Sample Coded and Rated Student Summary (English and Turkish Versions)

English Version

CHEATING IN SPORTS (Total Points: 22)

In sports, every team and every player competes to win. (1) Unfortunately, two factors have created an unhealthy condition in sports. One of these factors is obsession with money and the other one is obsession with winning. (3)

Although there are penalties for cheating in sports, players and coaches have broken the rules using clever tactics and this has become a part of the game. (2) For example, coaches have been encouraging players to be involved in simple cheating (2) or referees pretend not to see cheating in the game as well as giving casual or minimal penalties when players cheat. (2)

To exemplify; in football, players using illegal techniques, without the referee noticing, pull the opponents and cause them to trip over. (2) In basketball, a player can break the rules and try to earn a shoot for his own team. (2) In baseball, when the host team meets a strong team, the players can change the condition of the field by scattering sand or water over it. (2) Apart from these, the host team might apply psychological pressure such as increasing the heat in the locker room to make players of the opponent team run slowly or painting the walls of the room pink to make the opponent players less aggressive. (4)

Shortly, these instances of cheating and the motto of winning all the time cause the players to deteriorate morally. (2)

Turkish Version

SPORDA ŞİKE: (Toplam puan: 22)

Sporda her takım ve her oyuncu kazanmak için yarışmaktadır. (1) Maalesef iki faktör Amerikan sporunda sağlıksız bir durum yaratmıştır. Bu faktörlerden birincisi para hırsı, diğeri ise kazanma hırsıdır. (3)

Bütün spor dallarında şike cezası uygulanmasına rağmen, oyuncular ve koçlar zekice yöntemlerle kuralları yıkmışlardır ve bu, oyunun bir parçasına karışmıştır. (2) Örneğin, koçlar oyuncuları basit şikeler yapmaları için cesaretlendirmiştir (2) ya da hakemler yapılan şikeleri görmezden geldikleri gibi gördüklerine de keyfi az cezalar vermişlerdir. (2)

Örneğin, futbolda oyuncular illegal tekniklerle hakem görmeden karşı takım oyuncusunu çekip düşürmektedir. (2) Basketboldaysa, bir oyuncu kuralları çiğneyip kendi takımına atış hakkı kazandırmaya çalışabilir. (2) Beyzbolda ev sahibi takım güçlü bir takımla karşılaşınca zemine su veya kum döşeyip sahayı değiştirir. (2) Bunlardan başka ev sahibi olan takımlar rakiplerine psikolojik baskı da uyguluyor. Örneğin, oyun esnasında yavaş oynamaları için soyunma odasındaki sıcaklığı arttırmak, odaları pembeye boyayarak saldırganlıklarını azaltmak gibi. (4)

Kısaca şike olayı ve oyuncuların hep kazanma psikolojisi içinde olması sporcuların ahlak mantığı gelişiminin azalmasına neden olmuştur. (2)

Appendix E: Attitude Questionnaire (English and Turkish Versions)

Please read the statements about graphic organizers below carefully and circle the option that best describes you.

1) I liked using graphic organizers in reading classes.
A) I agree. B) I am not sure. C) I disagree.

2) Graphic organizers helped me to understand the reading material better.
A) I agree. B) I am not sure. C) I disagree.

3) Working with graphic organizers in the reading lesson was a good use of my time.
A) I agree. B) I am not sure. C) I disagree.

4) I believe using graphic organizers helped me to write a better summary.
A) I agree. B) I am not sure. C) I disagree.

5) If I had not used graphic organizers, I could have understood the reading material just as well.
A) I agree. B) I am not sure. C) I disagree.

6) Using graphic organizers enabled me to see the information that was included in the reading passage as a whole.
A) I agree. B) I am not sure. C) I disagree.

7) I could not understand the logic of using graphic organizers in a reading class.
A) I agree. B) I am not sure. C) I disagree.

8) Using graphic organizers made reading more meaningful and purposeful.
A) I agree. B) I am not sure. C) I disagree.

9) The reading classes in which graphic organizers were used were really effective.
A) I agree. B) I am not sure. C) I disagree.

10) I would like to work with this type of graphic organizers in the upcoming reading classes.
A) I agree. B) I am not sure. C) I disagree.

11) I felt more involved in what I was doing while filling in graphic organizers than I did during the discussion activities.
A) I agree. B) I am not sure. C) I disagree.

12) Filling in graphic organizers enabled me to remember more ideas from the reading passage while writing a summary than the discussion activities did.
A) I agree. B) I am not sure. C) I disagree.

13) Having a discussion after reading a passage was just as effective as filling in graphic organizers.
A) I agree. B) I am not sure. C) I disagree.

14) Which activity would you prefer to do as a post-reading activity?
A) Filling in graphic organizers. B) Discussion. C) It doesn't matter.

Lütfen aşağıdaki grafik organizatörler hakkındaki bildirimleri dikkatle okuyarak size en çok uyan seçeneği yuvarlak içine alınız.

1) Grafik organizatörleri okuma dersinde kullanmaktan hoşlandım.
A) Katılıyorum. B) Emin değilim. C) Katılmıyorum.

2) Grafik organizatörleri kullanmak okuma materyalini daha iyi anlamamı sağladı.
A) Katılıyorum. B) Emin değilim. C) Katılmıyorum.

3) Grafik organizatörleri okuma dersinde kullanarak zamanımı gerçekten iyi değerlendirdiğimi düşünüyorum.
A) Katılıyorum. B) Emin değilim. C) Katılmıyorum.

4) Grafik organizatörleri kullanmanın daha iyi bir özet yazmama yardımcı olduğuna inanıyorum.
A) Katılıyorum. B) Emin değilim. C) Katılmıyorum.

5) Grafik organizatörleri kullanmasaydım da parçayı aynı derecede iyi anlayabilirdim.
A) Katılıyorum. B) Emin değilim. C) Katılmıyorum.

6) Grafik organizatörleri kullanmak okuma parçasında kapsanan bilgiyi bir bütün halinde görmemi sağladı.
A) Katılıyorum. B) Emin değilim. C) Katılmıyorum.

7) Okuma dersinde grafik organizatörleri kullanmanın mantığını anlayabilmiş değilim.
A) Katılıyorum. B) Emin değilim. C) Katılmıyorum.

8) Grafik organizatörleri kullanmak okuma eylemine anlam ve amaç kattı.
A) Katılıyorum. B) Emin değilim. C) Katılmıyorum.

9) Grafik organizatörler kullanılarak işlenen okuma dersi gerçekten verimli geçti.
A) Katılıyorum. B) Emin değilim. C) Katılmıyorum.

10) İlerideki okuma derslerinde de bu tür grafik organizatörler kullanarak çalışmayı isterim.
A) Katılıyorum. B) Emin değilim. C) Katılmıyorum.

11) Okuma sonrası tartışma aktivitelerine kıyasla, grafik organizatörleri doldururken kendimi içinde bulunduğum eyleme daha çok vererek dahil olduğumu hissettim.
A) Katılıyorum. B) Emin değilim. C) Katılmıyorum.

12) Okuma sonrası tartışma aktiviteleriyle karşılaştırdığımda, grafik organizatörleri doldurmak özet yazarken pasajdan daha çok fikir hatırlamamı sağladı.
A) Katılıyorum. B) Emin değilim. C) Katılmıyorum.

13) Okuma sonrası tartışma aktivitesi de grafik organizatörleri doldurmak kadar etkiliydi.
A) Katılıyorum. B) Emin değilim. C) Katılmıyorum.

14) Okuma sonrası aktivitesi olarak aşağıdakilerden hangisini tercih edersiniz?
A) Grafik organizatörleri doldurma. B) Tartışma. C) Fark etmez.

Appendix F: Discussion Questions

Studying Headaches (Text A)

1) Why are scientists interested in finding about headaches? Why is the research into headaches a world-wide effort?

2) Why is aspirin used? What does aspirin treat?

3) How was aspirin developed? Who found aspirin first? What did Hippocrates use to make aspirin? Is the aspirin we use today the same as the one that was developed by Hippocrates? Who improved its form? How?

4) What are the main types of headaches? How can you define them?

5) How can you classify primary headaches? What are the types of primary headaches?

6) What causes tension headaches? What are the symptoms of tension headaches?

7) What causes migraine headaches? What are the symptoms of migraine headaches?

8) What causes cluster headaches? What are the symptoms of cluster headaches?

9) Are doctors hopeful about stopping headaches?

The History of the Death Penalty (Text B)

1) In the United States today, who is capital punishment given to?

2) What about Early America? Who received the death penalty in Early America?

3) Why did people in the United States start to disagree with the death penalty in time? What were the two main reasons behind that?

4) Do Southern and Northern States in the USA approach the idea of capital punishment in the same way or different ways? In what ways do their approaches differ from one another?

5) In the United States, there is a debate about the death penalty and people have some arguments against it. What are the two main arguments against the death penalty?

6) Think about the majority of Americans. Are they against the death penalty or in favor of it?

Cheating in Sports (Text C)

1) What are the two factors that push American sports in an unhealthy way today?

2) People who are involved in sports have invented some clever ways to break the rules in sports. What are they?

3) What does *normative cheating* mean?

4) Some forms of normative cheating are these: Being violent, painting the rooms of the locker room pink, increasing the heat in the locker room. Can you give some specific examples of normative cheating from basketball, football and baseball?

5) How does the *winning-at-all-costs philosophy* affect the moral development of athletes?

Ideas about Beauty (Text D)

1) Do people judge beauty in the same way? How do you know?

2) Is this the influence of genetics or culture?

3) Dr. Devendra Singh conducted an experiment and came up with a view in favor of genetics that people can use while explaining men's standards of beauty. What was the experiment? What was the specific finding? How did Dr. Singh explain this finding?

4) Dr. Ju came up with a view in favor of culture. What was his experiment? What were his findings? How did he explain his findings?

5) Which side is right in this debate? The genetics group or the culture group?