



**HACETTEPE ÜNİVERSİTESİ**  
**EĞİTİM BİLİMLERİ ENSTİTÜSÜ**

Department of Foreign Language Education

English Language Teaching Program

READING COMPREHENSION IN EFL EDUCATION: MULTIMODAL SEMIOTIC  
APPROACH, ATTITUDES AND METACOGNITIVE AWARENESS

Suna YERDELEN

Master's Thesis

Ankara, 2024

With leadership, research, innovation, high quality education and change,

*To the leading edge... Toward being the best...*



Department of Foreign Language Education

English Language Teaching Program

READING COMPREHENSION IN EFL EDUCATION: MULTIMODAL SEMIOTIC  
APPROACH, ATTITUDES AND METACOGNITIVE AWARENESS

YABANCI DİL OLARAK İNGİLİZCE EĞİTİMİNDE OKUMA ANLAMA: ÇOK MODLU  
GÖSTERGEBİLİMSEL YAKLAŞIM, TUTUMLAR VE ÜSTBİLİŞSEL FARKINDALIK

Suna YERDELEN

Master's Thesis

Ankara, 2024

### Acceptance and Approval

To the Graduate School of Educational Sciences,

This thesis, prepared by **SUNA YERDELEN** and entitled “Reading Comprehension in EFL Education: Multimodal Semiotic Approach, Attitudes and Metacognitive Awareness” has been approved as a thesis for the Degree of **Master** in the **Program of English Language Teaching** in the **Department of Foreign Language Education** by the members of the Examining Committee.

Chair	Prof. Dr. Perihan SAVAŞ	Signature
Member (Supervisor)	Prof. Dr. Nuray ALAGÖZLÜ	Signature
Member	Assist. Prof. Dr. Nilüfer CAN DAŞKIN	Signature

This is to certify that this thesis has been approved by the aforementioned examining committee members on ...../...../..... in accordance with the relevant articles of the Rules and Regulations of Hacettepe University Graduate School of Educational Sciences, and was accepted as a **Master’s Thesis** in the **Program of English Language Teaching** by the Board of Directors of the Graduate School of Educational Sciences from ...../...../.....

Prof. Dr. İsmail Hakkı MİRİCİ

Director of Graduate School of Educational Sciences

## Abstract

Reading comprehension is one of the ultimate aims of English language teaching. To achieve this aim, traditional text-bound reading instruction practices such as translation and making detailed grammatical explanations are still being used today. However, thanks to the technological advancements, today's reading tasks have gained a new semiotic environment conveying meaning to readers through various modes such as visuals and sounds alongside words. Therefore, it can be concluded that traditional reading instruction practices do not reflect authentic reading tasks. Also, previous studies conducted in various EFL contexts showed that the application of multimodal teaching approach and employing semiotic signs were effective in improving students' reading comprehension. By combining the multimodal and semiotic approaches, this study aimed to explore their combined effect on English reading comprehension through the multimodal semiotic approach (MSA), students' attitudes towards MSA, and the relationships of MSA's effect on reading comprehension levels with attitudes towards MSA and with metacognitive awareness levels of reading strategies (MARS) in Turkish EFL context, so far uninvestigated in the literature. Post-test only with nonequivalent comparison groups design was employed with two groups of students studying ELT at a state university in Turkey to explore the effect of MSA. Then, a Likert-type survey was administered to experimental group to discover their MARS and attitudes towards MSA. The findings indicated that MSA was helpful in increasing students' reading comprehension levels, attitudes towards MSA were positive, and there were positive relationships of reading comprehension levels by MSA with the attitudes and with the MARS levels.

**Keywords:** multimodality, semiotics, reading comprehension, attitude, metacognitive awareness, english language teaching

## Öz

Okuduğunu anlama, İngilizce öğretiminin temel hedeflerinden biridir. Bu hedefe ulaşmak için çeviri ve ayrıntılı dilbilgisi açıklamaları yapma gibi geleneksel, metne bağlı okuma öğretimi teknikleri günümüzde kullanılmaya devam edilmektedir. Ancak teknolojik gelişmeler sayesinde günümüz okuma etkinlikleri, sözcüklerin yanı sıra görseller ve sesler gibi çeşitli modlar aracılığıyla okuyuculara anlam ileten yeni bir göstergibilimsel ortam kazanmıştır. Bu yüzden geleneksel okuma öğretimi tekniklerinin gerçek okuma etkinliklerini yansıtmadığı sonucuna varılabilir. Ayrıca, çeşitli İngilizce öğretimi bağlamlarında yapılan önceki çalışmalar, öğretim sürecinde çok modlu öğretim yaklaşımının uygulanmasının ve göstergibilimsel işaretlerin kullanılmasının öğrencilerin okuma anlama becerilerini geliştirmede etkili olduğunu göstermiştir. Bu çalışma, çok modlu yaklaşımı ve göstergibilimsel yaklaşımı birleştirerek İngilizcenin yabancı dil olarak öğretildiği ve ana dilin Türkçe olduğu bir bağlamda çok modlu göstergibilimsel yaklaşım (ÇMGY) aracılığıyla okuma anlama üzerindeki şimdiye kadar literatürde araştırılmamış olan bu birleşik etkiyi, öğrencilerin ÇMGY'ye yönelik tutumlarını ve ÇMGY'nin okuma anlama düzeyleri üzerindeki etkisinin, ÇMGY'ye yönelik tutumlarla ve okuma stratejilerine ilişkin üstbilişsel farkındalıkla (OSİÜF) ilişkilerini araştırmayı amaçlamıştır. ÇMGY'nin etkisini araştırmak için Türkiye'de bir devlet üniversitesinde İngilizce Öğretmenliği okuyan iki grup öğrenci ile eşdeğer olmayan karşılaştırma gruplarıyla yalnızca son test deseni kullanıldı. Ardından öğrencilerin ÇMGY'ye yönelik tutumlarını ve OSİÜF'lerini ortaya çıkarmak için Likert tipi bir anket deney grubuna uygulandı. Bulgular, ÇMGY'nin öğrencilerin okuma anlama düzeyini artırmada faydalı olduğunu, ÇMGY'ye yönelik tutumların olumlu olduğunu, ÇMGY yardımıyla elde edilen okuma anlama düzeylerinin; ÇMGY'ye yönelik tutumların düzeyleri ve okuma stratejilerine ilişkin üstbilişsel farkındalıkların düzeyleri arasında pozitif ilişkiler bulunduğunu gösterdi.

**Anahtar Sözcükler:** çok modluluk, göstergibilim, okuma anlama, tutum, üstbilişsel farkındalık, ingiliz dili eğitimi

## Acknowledgements

First of all, I am grateful to my thesis supervisor Prof. Dr. Nuray ALAGÖZLÜ for her guidance, encouragement, understanding, politeness and feedback on my thesis during this tough process. I could not have written my thesis without her help.

My profound thanks belong to my dear family. I would like to thank my beloved mother and father who have always showed their unconditional affection to me and supported me in every respect to complete my thesis successfully. I am also grateful to you for always believing that I will be successful. I would like to additionally thank you for tolerating my endless bemoaning in my thesis writing process. Thanks are due also to my dear brother, Tuna Efe, who has done his best to help me and listened to my constant complaining in this process. I hope you will become a very successful English teacher in the near future.

I also would like to thank Assist. Prof. Dr. İsmail Fırat ALTAY and Özlem KHAN for their guidance and training that they provided to me during my student years at university.

I appreciate my lovely university, Hacettepe University, too for giving me the chance to experience the most beautiful years of my life and the opportunity to be the top student of education faculty.

I would like to thank The Scientific and Technological Research Council of Türkiye (TÜBİTAK) for providing me with 2210-A National M.A. scholarship.

I would like to thank myself for being able to complete the thesis in spite of all the difficult and stressful situations that I have undergone due to the COVID-19 and Kahramanmaraş earthquake that occurred on 6th February 2023.

Lastly, I would like to thank my students together with whom I have undergone hard times, yet still who could make me cheer up.

## Table of Contents

Acceptance and Approval .....	ii
Abstract .....	iii
Acknowledgements .....	v
List of Tables .....	viii
List of Figures.....	x
Symbols and Abbreviations .....	xii
Chapter 1 Introduction.....	1
Statement of the Problem .....	5
Aim and Significance of the Study.....	7
Research Questions.....	8
Assumptions .....	9
Limitations.....	10
Definitions .....	11
Chapter 2 Theoretical Basis of Research and Literature Review .....	14
Reading Comprehension .....	15
Multimodal Approach .....	27
<i>Related Studies on Multimodal Approach</i> .....	33
<i>Related Studies on Attitudes Towards Multimodal Approach</i> .....	38
Semiotic Approach.....	40
<i>Related Studies on Semiotic Approach</i> .....	43
Metacognitive Reading Strategies.....	45
<i>Related Studies on Metacognitive Reading Strategies</i> .....	47
Chapter 3 Methodology .....	53
Type of Research.....	53
Pilot Study Report on the Reading Comprehension Test Construction.....	61
Setting and Participants .....	72



Data Collection.....	77
Instruments .....	77
Data Analysis .....	87
Chapter 4 Findings, Comments and Discussion.....	91
Chapter 5 Conclusion and Suggestions .....	112
Implications.....	113
Suggestions .....	114
References .....	116
APPENDIX-A: Informed Consent Form.....	127
APPENDIX-B: Gönüllü Katılım Formu.....	130
APPENDIX- C: Reading Comprehension Post-test Items .....	133
APPENDIX- D: Attitude Survey .....	152
APPENDIX- E: MARSİ .....	155
APPENDIX-F: Ethics Committee Approval.....	162
APPENDIX-G: Declaration of Ethical Conduct .....	163
APPENDIX-H: Thesis/Dissertation Originality Report .....	164
APPENDIX-I: Yayımlama ve Fikrî Mülkiyet Hakları Beyanı.....	165

## List of Tables

<b>Table 1</b> .....	24
<i>Dimensions that Models Center Around According to McNamara and Magliano's Analysis</i> .....	24
<b>Table 2</b> .....	55
<i>Differences Between the Test Constructed with MSA and the Test with Traditional Approach</i> .....	55
<b>Table 3</b> .....	65
<i>Specific Objectives Determined for the Reading Comprehension Test</i> .....	65
<b>Table 4</b> .....	66
<i>Table of the Test Specifications</i> .....	66
<b>Table 5</b> .....	69
<i>Item Statistics of the Reading Comprehension Test</i> .....	69
<b>Table 6</b> .....	71
<i>Reliability Statistics</i> .....	71
<b>Table 7</b> Data Collection Instruments .....	78
<b>Table 8</b> Data Analysis Summary.....	87
<b>Table 9</b> .....	93
<i>Representation of GPA and English Language Proficiency in Data Analysis</i> .....	93
<b>Table 10</b> .....	94
<i>Descriptive Statistics of GPA Levels</i> .....	94
<b>Table 11</b> .....	94
<i>Independent Sampe T-test Results for GPA Levels</i> .....	94
<b>Table 12</b> .....	95
<i>Descriptive Statistics of English Proficiency Levels</i> .....	95
<b>Table 13</b> .....	95
<i>Independent Sampe T-test Results for English Proficiency Levels</i> .....	95
<b>Table 14</b> .....	96
<i>Descriptive Statistics of Experimental Group</i> .....	96
<b>Table 15</b> .....	96
<i>Descriptive Statistics of Control Group</i> .....	96
<b>Table 16</b> .....	97
<i>Comparison of Groups' Statistics</i> .....	97

<b>Table 17</b> .....	98
<i>Independent Sampe T-test Results</i> .....	98
<b>Table 18</b> .....	101
<i>Participants' Responses to the Items of Attitude Survey</i> .....	101
<b>Table 19</b> .....	104
<i>Participants' Responses to the Items of MARS/</i> .....	104
<b>Table 20</b> .....	105
<i>Participants' Responses to the Items of Global Reading Strategies</i> .....	105
<b>Table 21</b> .....	106
<i>Participants' Responses to the Items of Problem-Solving Reading Strategies</i> ...	106
<b>Table 22</b> .....	107
<i>Participants' Responses to the Items of Support Reading Strategies</i> .....	107
<b>Table 23</b> .....	109
<i>Pearson R Correlation Result for Attitudes and Reading Comprehension Levels by MSA</i> .....	109
<b>Table 24</b> .....	110
<i>Pearson R Correlation Result for MARS and Reading Comprehension Levels by MSA</i> .....	110

## List of Figures

<b>Figure 1</b> .....	16
A Heuristic for Thinking About Reading Comprehension .....	16
<b>Figure 2</b> .....	18
<i>Data-driven or Bottom-up Model</i> .....	18
<b>Figure 3</b> .....	19
<i>Hypothesis Test or Top-down Model</i> .....	19
<b>Figure 4</b> .....	22
<i>Representation of Rumelhart’s Interactive Reading Model</i> .....	22
<b>Figure 5</b> .....	29
<i>Design Elements of Different Modes of Meaning</i> .....	29
<b>Figure 6</b> .....	41
<b>Figure 7</b> Diagram of the Research Design Adopted in the Present Research .....	60
<b>Figure 8</b> Distribution of the Participants’ Age.....	75
<b>Figure 9</b> Distribution of the Participants’ Gender .....	76
<b>Figure 10</b> Distribution of the Participants’ English Language Proficiency Level...	76
<b>Figure 11</b> A Screenshot of the Front Entrance to Main Building from the Virtual Tour .....	79
<b>Figure 12</b> A Screenshot of the Great Hall from the Virtual Tour .....	79
<b>Figure 13</b> .....	80
<i>A Screenshot of the Isolation Ward from the Virtual Tour</i> .....	80
<b>Figure 14</b> .....	80
<i>A Historic Image of Medical Staff working at Ellis Island Hospital from the Virtual Tour</i> .....	80
<b>Figure 15</b> .....	81
<i>A Historic Image of Immigrants Lining Up for the Medical Inspection from the Virtual Tour</i> .....	81
<b>Figure 16</b> .....	84
<i>Photos as Examples of Multimodal Elements Provided Alongside the Reading Paragraphs</i> .....	84
<b>Figure 17</b> .....	84
<i>Icons as Examples of Semiotic Elements Provided Alongside the Reading Paragraphs</i> .....	84

**Figure 18** ..... 85  
*Audio as an Example of Multimodal Elements Provided Alongside the Reading Paragraphs*..... 85

**Figure 19** ..... 85  
*Video as an Example of Multimodal Elements Provided Alongside the Reading Paragraphs*..... 85

## **Symbols and Abbreviations**

**EFL:** English as a Foreign Language

**ESL:** English as a Second Language

**ELT:** English Language Teaching

**L1:** First Language/Mother tongue

**L2:** Second/Foreign language

**MSA:** Multimodal Semiotic Approach

**MARS:** Metacognitive Awareness of Reading Strategies

**CEFR:** Common European Framework of Reference for Languages

**MARSI:** Metacognitive Awareness of Reading Strategies Inventory

**SPSS:** Statistical Package for the Social Sciences

## Chapter 1

### Introduction

Considering the fact that reading comprehension is a complicated process even in native language, which could be confirmed by the reading performance trends of the students in Turkey over the 2003-2018 period that are statistically below the average mean performance across OECD countries according to the figures of the Program for International Student Assessment (PISA), (OECD, 2019), it would not be wrong to state that foreign language teachers have an uphill task to gain students reading comprehension in foreign language as the additional complexity of foreign language learning is involved in the process, and maybe the teachers could think that this task should be performed for only the gifted students. Nevertheless, having a high level of reading comprehension in the foreign language is a requirement for all students to receive higher education in many countries because “Now, English serves unchallenged as the main international academic language” (Altbach, 2007, p. 3608). Therefore, the teachers should enable each one of their students to read and comprehend academic publications in English (Groebel, 1980). Moreover, the better reading comprehension is, the better other language skills will be due to the interdependence of the four core language skills which can be explained with the theories of physiology, system, and learning transfer (Nan, 2018). In addition, the natural order of skills acquisition starts with the receptive skills (listening and reading) and then moves on to the productive ones (speaking and writing), so the development of the receptive skills such as reading results in improved productive skills, though this process takes place slowly (Wilkins, 1984 as cited in Al – Jawi, 2010). Similarly, Yurko and Protsenko (2020) emphasize the power of reading for improving other language skills because learners can expand their vocabulary, grammar, and discorsal knowledge by reading a variety of texts, it is not bound to be boring with interesting topics even. Furthermore, Yurko and Protsenko (2020) point out the importance of reading for different aspects of life, that is, comprehending by reading different types of texts such as news reports, letters, messages, articles and coursebooks is a vital life skill to reach some goals in

school, work, and daily life. Besides, reading comprehension skill endows learners with the abilities to look up in the dictionaries and the source books, and to analyze diagrams and schemes for obtaining the required information, which are important learning strategies (Al – Jawi, 2010). Also, it is stressed that while trying to comprehend a text, there is the opportunity to go back and forward on the text to study it unlike other language skills (Al – Jawi, 2010). Studying the text, as in intensive reading, the readers can use this opportunity to learn something new about the language, such as chunks, grammatical structures, and style, at their own pace (Al – Jawi, 2010; Yurko & Protsenko, 2020). By appreciating the significance of reading comprehension skill, scholars have sought ways to help students improve this skill more easily. The multimodal approach and the semiotic approach to teaching reading can be regarded among the results of this attempt.

The multimodal approach to literacy pedagogy assumes that meaning is made via the various configurations of multiple modes, and linguistic mode is only one of them (Jewitt, 2012). According to The New London Group (1996), there are six modes of meaning in total: linguistic mode, visual mode, audio mode, spatial mode, gestural mode, and the multimodal mode. They state that among these modes, the multimodal mode has a pivotal role in that it connects the other modes in continuously changing or developing proportions. To illustrate, the mass media combines different modes within a complex arrangement to create meaning. Therefore, a multimodal reading that depends on not only linguistic mode but also the other modes is required to comprehend the meaning created by the mass media. Indeed, the multimodal approach to literacy is not new. In other words, the text-bound reading and writing were multimodal in the past and they are still multimodal because the elements of different modes such as marks, space, color, font, and style are inherent in them (Kenner, 2004, as cited in Jewitt, 2005). However, the multimodal approach moved into a prominent place for literacy with the advance of Information and Communication Technology (ICT), which provides new affordances for the meaning-making process such as moving image (Jewitt et al., 2016). Probably that is why today most of the studies on the multimodal approach to reading in English



as a foreign language (EFL) context (Boshrabadi & Biria, 2014; Yimwilai, 2019; Pan & Zhang, 2020) employ the multimedia equipment to adopt the multimodal approach. In relation to this, Farías and Véliz (2019), and also Jewitt (2005) suggest that the multimodal nature of the new technological affordances should be used in the literacy pedagogy since they reflect today's authentic reading tasks which have become multimodal by bouncing from print-based texts to screens thanks to ICT. In addition, the previous studies (Boshrabadi & Biria, 2014; Yimwilai, 2019; Pan & Zhang, 2020) investigating the effect of the multimodal approach on reading comprehension and the students' attitudes towards the multimodal approach in educational context reported that employing the multimodal approach to reading was more effective than the traditional one in improving English reading comprehension, made the students more engaged with the reading activities and the students reflected positive attitudes towards the multimodal approach. Moreover, Royce and Bowcher (2007), in the high school Japanese EFL context, illustrate some examples of the activities, which were designed by TESOL (Teaching English to Speakers of Other Languages) Institute located in Japan, to show how to integrate visual aspects of multimodality into the reading activities of English course with the aim of both improving the students' reading comprehension and raising their metacognitive awareness. Also, it has been concluded that high level of metacognitive awareness for reading strategies was demonstrated by the students reading the multimodal texts given in a study investigating the use of metacognitive reading strategies by Indonesian academically poor high school students (Manalu & Wirza, 2021). These works suggest a positive association between the multimodal reading and the metacognitive awareness employed in the reading process.

The semiotic approach to foreign language teaching deals with the means of helping students make sense of the target language via the signs imparted by the target culture (Danesi, 2000; Semetsky, 2010; Sert, 2006). The means can be classified as the verbal and the nonverbal aspects of communication, and semiotics attracts attention to the close interrelationship between these two aspects, which leads to new insights into the language teaching (Danesi, 2000; Semetsky, 2010). For example, Danesi (2000) claims that the

nonverbal aspects inherent in communication such as gesticulation ought to be a part of the language teaching methodology as much as the rules for forming grammatically correct sentences since they form their own grammar, which Danesi calls *cultural grammar*, to be taught as well. Also, Peirce (as cited in Semetsky, 2010) points out that it is not enough to provide students with only linguistic forms while teaching new vocabulary as students need to gain the collateral experience of the things which the vocabulary stands for in order that they can comprehend the meaning of the vocabulary. To clarify collateral experience, Peirce suggests the interpreter's prior familiarity with the referent denoted by the sign (Bergman, 2010). To gain the collateral experience, it is implied that learners need to learn how to get to grips with signs in the target cultural context by experience (Bergman, 2010; Danesi, 2000; Semetsky, 2010). Taking these into account, Sert (2006) proposes that the application of semiotics in foreign language teaching requires codifying the concepts of the target language into the long-term memory via the contextualized signs that are belong to the culture of the target language in teaching the language skills and raising students' awareness of these signs. As a result, students will be able to interrelate the surface structure with the deep structure of the target language more fluently, and therefore they will be able to comprehend the texts of the target culture with automaticity (Sert, 2006) and interconnect assemblage of signs and/or signs of different codes within the texts (Danesi, 2000).

Besides, Gunter Kress, who is one of the trailblazers in social semiotics to communication with his implications for the language education, holds the view that the multimodality is constantly used in conveying messages or information (Augustyn, 2012), which could be clearly understood from his own words: "This is a social semiotic approach to representation, in which sign is central, and sign is the result of intent, the sign-maker's intent to represent their meanings in the most plausible, the apt form." (Kress, 2001, p. 72). Also, Jewitt et al. (2016) assume that each mode in multimodality contains semiotic resources which differ in the facilities that they provide people with for the meaning-making process. Obviously, this premise and the argument Kress put forth show that there is an interconnection between

the semiotic and the multimodal approaches. So far, however, there have been no studies drawing on the interconnection between these approaches to examine their combined effect on the reading comprehension within a foreign linguistic and cultural context. Therefore, by combining these two approaches, which have been adopted separately in the language teaching context up till now, into a holistic approach for which the researcher uses the term *Multimodal Semiotic Approach (MSA)*, this study primarily sets out to explore the combined effect of the multimodal and the semiotic approach on the reading comprehension in the English as a foreign language (EFL) context. Along with this, the study intends to explore the attitudes of the students towards MSA and the metacognitive awareness for reading strategies of the students exposed to MSA, and finally it aims to determine two relationships: the first one between the students' reading comprehension levels attained by MSA and their attitudes towards MSA, and the second one between the same comprehension levels and the metacognitive awareness of reading strategies of the students exposed to MSA.

### **Statement of the Problem**

Reading comprehension in the lingua franca, namely in the English language, is fundamental for students to develop English language skills as well as to grow academically because the most prestigious academic journals across the world publish the articles in the English language. However, a substantial number of EFL students at higher education from various countries still experience reading comprehension problems with English texts (Adunyarittigun, 2002; Al Seyabi & Tuzlukova, 2015; Dreyer & Nel, 2003; Kasim & Raisha, 2017). Unfortunately, the same situation applies to Turkish university students as well (Yılmaz, 2012). The main reading comprehension problems that the EFL students bump into can be listed, based on the literature, as inadequate amount of knowledge on the vocabulary, the reading strategies (Kasim & Raisha, 2017), the culture, the background knowledge (Kasim & Raisha, 2017; Yılmaz, 2012); the disengagement with reading due to the lack of interest (Yılmaz, 2012), having difficulty in carrying out a reading task because of inexperience (Dreyer & Nel, 2003), and the lack of effective reading strategy use (Yılmaz, 2012). Evidently, the

currently used methods of reading instruction fail to help EFL students comprehend English texts.

Although there is no extensive research investigating how EFL students' attitudes affect their reading comprehension success, it would not be wrong to include the negative attitudes towards EFL reading in the main reading comprehension problems by regarding the significance of the affective factors in language learning (Dörnyei, 2003) and Krashen's affective filter hypothesis.

Moreover, Falk-Ross (2014) puts forward, reading may become a challenging task for foreign language students when they are bound to only the print-based reading texts which take place especially in the traditional reading instruction. The main reason why students face a challenge due to the limitations caused by the print-based reading texts is that this leads to unauthentic reading tasks, which do not reflect the real-life reading tasks (Ganapathy & Seetharam, 2016). Despite this, the traditional practices such as translating paragraphs, making detailed grammatical explanations, and assigning students to memorize isolated lists of the target language vocabulary are still being used by a great number of English language teachers to help students comprehend what they read, and these practices have been regarded as indispensable for teaching language skills, including teaching the reading skill, in non-native environments (Gülseren, 2019; Kong, 2011; Rossiana, 2010). Consequently, a discrepancy occurs between the authentic reading tasks the students are exposed to outside the school and the traditional reading instruction practices they receive at school since authentic reading tasks draw on the multimodality by including not only the linguistic mode but also the audial, visual, spatial, and gestural modes as in the blogs, videos, websites, slideshows, and webinars that the students interact with in their daily lives (Farías & Véliz, 2019; Jewitt, 2005). Similarly, Chan and Unsworth (2011) points out that the relationship between the visuals and the writings in multimedia are not reflected in both the literacy instruction and examination of the modern education.

All these suggest that the EFL teachers need to come up with effective approaches of reading instruction that can help the EFL students overcome the above-mentioned reading comprehension problems and at the same time, can fulfill the reading needs of the students by taking into account that these students, regardless of at which level of education they study, are mainly the members of Generation Z, which means that they were born into a digital world. Therefore, a holistic approach which benefit from the multimodality and the semiotics to reading instruction could be used by the EFL teachers. While the multimodal aspect of such an approach can provide authenticity to and increase familiarity with the reading tasks, the semiotic aspect can raise the cultural awareness. Also, by presenting various semiotic resources within different multimodal ensembles, they can conjointly activate the related vocabulary, the background knowledge; stimulate the interest, and the effective reading strategy use.

### **Aim and Significance of the Study**

The present study basically attempts to investigate the combined effect of the multimodal approach and the semiotic approach on the students' reading comprehension. More precisely, this study aims to reveal whether the *Multimodal Semiotic Approach (MSA)* can help students improve their reading comprehension in the Turkish EFL context through a quasi-experimental design. Secondly, this study seeks to ascertain the students' attitudes towards MSA and the metacognitive awareness for reading strategies of the students with a Likert-type survey after they read the texts designed with MSA. Thirdly, it explores the relationship between the students' attitudes towards MSA and their reading comprehension levels through MSA, and it explores another relationship between the students' metacognitive awareness of reading strategies and their reading comprehension levels through MSA.

There are several important gaps in the literature which this study attempts to fill. So far, no studies have merged the multimodal and the semiotic approaches to EFL reading instruction to investigate their combined effect on the comprehension levels of the students. Even, some of the researchers that separately uses these approaches to examine their effect

on the reading comprehension levels have not specified the content of the multimodal or semiotic elements they incorporated into their data collection procedures, which makes impossible for the audience to judge if the elements are really relevant to the text content and if they help readers to understand the text that they accompany. Moreover, relatively little research has been carried out on the use of the EFL students' metacognitive reading strategies for reading the multimodal texts or the texts including signs. Despite the significance of the metacognitive awareness and the multimodality during the reading process, no information on the relationship between the EFL students' reading comprehension levels achieved through MSA and their metacognitive awareness of reading strategies has been found in the literature by the researcher of the current study. Therefore, by aiming to fill these gaps, the current study will make important contributions to the reading aspect of the English as a foreign language teaching and learning fields. Also, because the participants of this study will be recruited among undergraduate students of a department of ELT, namely that they will be prospective English language teachers, providing insights into their attitudes towards MSA will offer implications on EFL reading instruction that are of particular importance to the ELT field.

### **Research Questions**

Recognizing the interconnection between the multimodal approach and the semiotic approach, which the researchers so far have dealt with them in a separate manner to investigate their effect on students' reading comprehension in the target language, this study combines these two approaches, and thus implements a *Multimodal Semiotic Approach (MSA)* to examine their combined effect on reading comprehension in Turkish EFL context. Furthermore, this study seeks to provide data which will reveal the students' attitudes towards MSA, metacognitive awareness of reading strategies after reading with MSA, and it examines two relationships, the first one of which is between the students' reading comprehension levels achieved through MSA and their attitudes, and the second one of which is between the same comprehension levels and the metacognitive awareness of reading strategies of the students exposed to MSA. As a result, five research questions have been addressed:

**RQ1:** Do the students who are exposed to the *Multimodal Semiotic Approach* (MSA) outperform the students who remain text-bound on the reading comprehension test?

**RQ2:** What are the students' attitudes towards the *Multimodal Semiotic Approach* (MSA) for reading comprehension in the target language?

**RQ3:** What is the relationship between the students' attitudes towards MSA and their reading comprehension levels achieved through MSA?

**RQ4:** What are the metacognitive awareness levels of reading strategies of the students exposed to the MSA?

**RQ5:** What is the relationship between the students' metacognitive awareness levels of reading strategies and their reading comprehension levels achieved through MSA?

### **Assumptions**

The following assumptions have been made regarding this study:

1. The participants will seriously respond to the reading comprehension test items, which are included in the post-test, with the desire to answer all of them correctly.

2. The participants will respond to the reading comprehension test items in the post-test without cheating.

3. The participants in the experimental group will make use of the semiotic signs and the elements of different modes of meaning such as visuals, sounds and a virtual tour provided to them during the post-test.

4. The participants will choose the option that best fits to their opinions and feelings from the five options included in the Likert-type survey.

5. The Likert-type survey, which will be adapted from different surveys, will provide reliable and valid data for the attitudes of the participants.

6. The participants will honestly respond to the Metacognitive Awareness of Reading Strategies Inventory (MARS-I) which comprises the second section of the Likert-type survey.

7. MARSİ will provide reliable and valid data for the participants' use of the metacognitive reading strategies in Turkish EFL context.

8. The students exposed to the *Multimodal Semiotic Approach* (MSA) will outperform the students who remain text-bound on the reading comprehension test (the post-test).

9. Survey results will show that students have positive attitudes towards MSA.

10. There will be a positive relationship between the students' attitudes towards MSA and their reading comprehension levels achieved through MSA.

11. There will be a positive relationship between the students' metacognitive awareness of reading strategies levels and their reading comprehension levels achieved through MSA.

12. The findings of this study will make important contributions to research on EFL reading by filling the above-mentioned gaps in the related literature.

### **Limitations**

The present study is subject to some limitations. Firstly, the population generalizability of the results obtained at the end of this study is limited because the study was conducted with a specific and a relatively small sample, which is comprised of seventy one (71) Turkish EFL freshmen students studying in the department of English language teaching at state university in Turkey, though the target population to which the researcher ideally wants to generalize the results of the current study is all Turkish EFL freshman students studying in the department of English language teaching at state universities in Turkey. Due to the constraints of time and money, the accessible population to which the researcher is able to generalize the results can be defined as all the Turkish EFL freshmen students studying in the department of English language teaching at only one state university in Turkey. This case affects the external validity adversely because the population generalizability becomes limited to the extent that the population is narrowly defined (Fraenkel & Wallen, 2005). Therefore, dissimilar results could be yielded when the same study is conducted with the students whose mother tongue is not



Turkish or who are studying in different departments and at different education levels, and even at different universities. Secondly, different results could be attained when this study is conducted in different settings. For example, the results obtained from the private universities or with different combinations of modes or with different reading contents may differ significantly, and this limits the ecological generalizability of the study. To overcome this limitation, the replications of the study in different settings could have been designed. Thirdly, the participants in the two sections were not assigned with randomization, and this could lead to a biased sample, which harms the representativeness of the population which the researcher wishes to generalize the results. Though it does not guarantee the representativeness, a detailed account of the characteristics of the participants was given as much as possible. Finally, using the post-test only with nonequivalent comparison groups design is not without limitation because there may exist significant differences between the participants of the experimental and the control groups, and these differences may lead to the extraneous variables that may be the explanation of the change between the post-test results. To minimize this threat to internal validity, the researcher obtained as much information on the relevant characteristics of all the participants, such as their English proficiency scores, GPA, gender and so on, as she could before she applied the post-test (Fraenkel & Wallen, 2005). Indeed, the university itself had already assigned the students into different classes in a homogeneous way according to the gender and the prep school proficiency results of the students.

### **Definitions**

The definitions of the field-specific terms which are frequently used in the different sections of this dissertation are provided below to make the meaning clear for those unfamiliar with the scope of the study and to achieve precision by preventing the terms from having multiple meanings.

**Semiotics:** “Semiotics is generally described as the ‘study of signs’.” (Harrison, 2003, p. 47), and “[It] describes the process by means of which the human operates in the world, organising

experience which he/she understands as, if not indeed through, a series of signs.” (McCarthy, 1996, p. 222).

**Semiotic Approach:** “This is a way of teaching language and culture using signs, symbols, icons, and several semiotic elements.” (Şenel, 2007, p. 118).

**Sign:** “A sign can be defined simply as something that stands for something else in some way.” (Danesi, 2007, p. 29). “There are three types of signs: symbol, icon and index.” (Sert, 2006, p. 110).

**Symbol:** “Signs are considered symbols if they represent their objects by means of some conventional, habitual, dispositional, or lawlike relation” (Weninger & Kiss, 2013, p. 8).

**Icon:** “Icons are [signs] that involve resemblance to the referent. For example, most of the traffic signs are iconic” (Şenel, 2007, p. 121).

**Index:** “Index is a mode in which the signifier is not arbitrarily, but directly connected to the signified (as in the relation between fire and smoke)” (quoted by Sert, 2006, p. 110, in Chandler, 2002).

**Multimodality:** “Multimodality refers to a variety of modalities that were used in communication, such as language, color, taste, image and so on. In other words, employment of two or more senses for interactions will form multimodality” (Scollon & Scollon, 2003, as cited in Pan & Zhang, 2020, p. 99).

**Multimodal Approach:** “Multimodal perspectives on teaching and learning build on the basic assumption that meanings are made (as well as distributed, interpreted, and remade) through many forms and resources of which language is but one—image, gesture, gaze, body posture, sound, writing, music, speech, and so on” (Jewitt, 2012, p.1).

**Mode:** “A set of socially and culturally shaped resources for making meaning that has distinct affordances” (Kress, 2014, as cited in Jewitt et al., 2016, p. 9).

**Multimodal Semiotic Approach:** In this study, the *Multimodal Semiotic Approach* means adopting a way which combines the multimodal approach and the semiotic approach to foreign language teaching with the intent of benefiting from their positive impacts on the meaning-making process.

**Reading Comprehension:** “The process of simultaneously extracting and constructing meaning through interaction and involvement with written language” (RAND Reading Study Group, 2002, p. 11).

**Attitude:** “Attitude is a hypothetical construct used to explain the direction and persistence of human behaviour” (Baker, 1992, p. 10). Ajzen (1988) describes attitude as “a disposition to respond favourably or unfavourably to an object, person, institution, or event” (p. 4). Attitudes are comprised of the cognitive, affective and readiness for action constituents (Ajzen, 1988; Rosenberg & Hovland, 1960; Ajzen & Fishbein, 1980, as cited in Baker, 1992, p. 12).

**Metacognitive Awareness:** “The knowledge of the readers’ cognition about reading and the self-control mechanisms they exercise when monitoring and regulating text comprehension” (Mokhtari & Reichard, 2002, p. 249).

**Reading Strategies:** “Generally deliberate, planful activities undertaken by active learners, many times to remedy perceived cognitive failure” (Garner, 1987, p. 50).

**Foreign Language:** Any language that is different from the native language (L1) of a person and at the same time, that is not commonly spoken in the native country of the person.

**Second Language or L2:** Second language, or L2, is a language that is not the native language (L1) of a person, yet it is commonly used in the native country of the person.

## Chapter 2

### Theoretical Basis of Research and Literature Review

Especially in EFL or ESL contexts, literacy instruction in English plays a fundamental role in preparing the students for today's social, academic, and economic life in a globalized world where the English language is the global language (Barahona, 2014; The New London Group, 1996; Yimwilai, 2019). Undoubtedly, reading instruction is an essential component of literacy instruction, and today traditional teaching techniques in the grammar-translation method continue to be widely used for reading instruction in English language classes although these techniques are ineffective in having the students engage in the instruction process because these practices do not reflect today's authentic reading tasks, which have become multimodal by moving from print-based reading texts to a digital environment as a result of the advancements in information and communication technology (ICT). Therefore, it is crucial that reading instruction practices benefit from the multimodality to cater for the students' needs and interests (Ajayi, 2010; Falk-Ross, 2014, as cited in Ganapathy & Seetharam, 2016; Farías & Véliz, 2019; Varaporn & Sitthitikul, 2019; Yimwilai, 2019; Miki, 2020). Also, the students' awareness of semiotic resources should be heightened for the reading comprehension as well as that the use of these resources should be stimulated in the reading process since the multimodal reading tasks require employing various semiotic systems, which are linguistic, visual, audio, gestural and spatial systems, in the meaning-making process (The New London Group, 1996; Sert, 2006; Jewitt et al., 2016; Pan & Zhang, 2020). By considering these issues, the researcher decided to combine the multimodal approach with the semiotic approach, and thus adopt the *Multimodal Semiotic Approach* (MSA) in order to discover their combined effect on the reading comprehension. Besides, since the attitudes of the students towards the learning process are among the affective elements that EFL teachers need to pay regard to while they are renovating the way of their instruction (Baaqeel, 2020), the researcher wanted to find out about the students' attitudes towards the MSA. Moreover, the researcher looked into the MSA-exposed students' metacognitive awareness of the reading strategies because

of its the positive effect on the reading comprehension (Dabarera et al., 2014). As a last examination, the relationships between the attitudes and the reading comprehension levels, and between the self-reported metacognitive reading strategy use and the reading comprehension levels were investigated. Therefore, the review of literature deals in turn with reading comprehension, multimodal approach, semiotic approach, and metacognitive reading strategies. Finally, it highlights the gap in the existing literature and accounts for how the present study fills the gap.

### **Reading Comprehension**

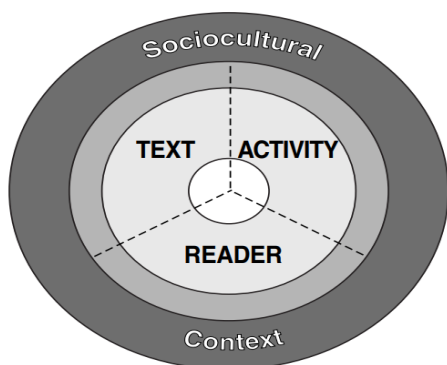
So far, many different definitions of reading comprehension have been offered by scholars, and when the definitions are synthesized, it can be stated that reading comprehension is a process in which the information contained in a written text is elicited and the meaning is interpreted through the interplay between a text and a reader, who also benefits from prior knowledge and experience as well as textual information during this process (Bensoussan & Kreindler, 1990; Dijk & Kintsch, 1983).

Despite being aware of the difficulty in offering a formally established definition for reading comprehension due to its extensive use, RAND Reading Study Group (2002) provides a broader definition for it because they believe that determining an operational definition is required to be able to undertake studies that will help the reading field develop further (Snow, 2002). In their definition for reading comprehension, “the process of simultaneously *extracting* and *constructing* [emphasis added] meaning through interaction and involvement with written language” (Snow, 2002, p. 11), the emphasized words are used to denote that the text is not sufficient for comprehension to occur by itself, though the textual features are important. According to RAND (2002), reading comprehension requires three key constituents: the *reader*, the *text*, and the *activity*, which are affected by the *sociocultural context*. Differently from the aforementioned synthesized definition, they include the *activity* constituent and the *sociocultural context* in their definition of reading comprehension. The *activity* points to reading aims, processing the available text, and reading outcomes. Readers have an or some

intrinsically and extrinsically based reading aims before they start reading. Intrinsically based reading aims can be clarified as performing the reading action to get inner satisfaction through enjoying, being interested in, and/or getting excited about the content and there is not getting advantage of something in the outer world with this kind of aims, but on the other hand it can be stated that readers have extrinsically based reading aims when they read to derive benefit from something such as reading to do a homework, to get good grades in the exams, to get positive feedback from parents or teachers (Becker et al., 2010; RAND, 2002). However, when readers' intrinsically based reading aims are contrary to their extrinsically based reading aims, as with a student who is required to read a traditional print-based text for an assignment but finds it boring or does not relate it to anything, the readers will probably end up lacking comprehension (Snow, 2002). RAND (2002) uses the *sociocultural context* to denote the setting in which the reading instruction takes place, so the factors affecting reading comprehension in the *sociocultural context* constituent are the students' prior knowledge, experience of reading tasks, cognitive skills, reading aims, cultural background, instructional and financial resources (e.g. availability of smart phones, computers, interactive whiteboard). As for their *text* constituent, it is not limited to only traditional print-based text, but it also involves hypertext which provides readers with the links, called as hyperlinks, referring to other relevant texts and with the elements in the multimedia such as image, sound, video, etc. along with the typed text to promote reading comprehension.

### Figure 1

A Heuristic for Thinking About Reading Comprehension



Note. This figure was taken from RAND, 2002, p. 12.

Another extension to the synthesized definition can be made with the constituents, “navigation” and “critique” put forward by Duke (2003, as cited in Pardo, 2004) who assumes that readers get around on a text to pinpoint the relevant part they look for with a critical perspective so that they decide whether or not the relevant part is correct and accords with their personal reading aims. Pardo (2004) interprets this judgement as taking a stance regarding the text that is interacted with, and by paying regard to the previously provided definitions, she tries to constitute a comprehensive one:

A common definition for teachers might be that comprehension is a process in which readers construct meaning by interacting with text through the combination of prior knowledge and previous experience, information in the text, and the stance the reader takes in relationship to the text. (p. 272)

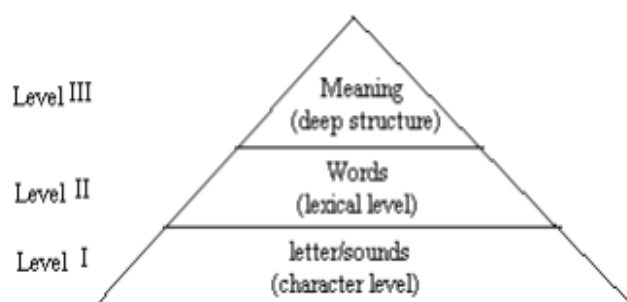
Besides using prior knowledge, experience and textual information, Pang et al. (2003) underscore reasoning as a component of comprehension process because readers make deductions while reading at the same time, and they also state that this process cannot be described as passive since readers perform all these transactions (i.e. using prior knowledge, experience, textual information and reasoning) actively to create meaning from the text. In the same vein, RAND (2002) argues that the readers construct meaning from texts in an active way because they deliberately use some strategies such as doing comprehension checks, having a reading aim before starting to read, and deciding whether the content of the text is suitable for that reading aim to achieve comprehension. These assumptions are also consistent with the arguments about reading advanced long before by Thorndike (1917), who is reckoned as the founder of the modern educational psychology thanks to the theory of connectionism he developed. He compared reading comprehension to problem-solving tasks in maths. For correct reading comprehension, the brain has to pick up the correct units in the given context, the relevant connotations of them by disregarding the irrelevant ones, establish the correct connections between them, weigh each unit's force correctly at the outset or alter their forces to reach the correct force weighing and finally attain a mental representation

serving the reading purpose according to Thorndike (1917). He also implied that all this processing involves reasoning (Liu, 2010; Thorndike, 1917).

As Carrel et al. (1988), Solak (2016), Pourhosein Gilakjani and Sabouri (2016) indicate, three models are mostly referred to in the literature for describing reading process, which are: top-down, bottom-up, and interactive reading models. They suggest that the bottom-up reading model focusses on linguistic knowledge and meaning-making is realized through a series of discrete stages in which decoding starts from the smallest units in a written text such as letters, graphemes, syllables, and words, then proceeds with larger units such as sentences. Finally, readers who adopt the bottom-up reading model try to modify their background knowledge, hypotheses, and predictions according to the information within a text. Gough (1972, as cited in Liu, 2010) describes the process in the bottom-up reading at three consecutive levels. At the first level, graphemes are recognized via visual sense, and they are converted into phonemes. At the second level, phonemes are built up into words or lexical items. Then, the words or lexical items are conveyed to the third level where the meaning is constructed through its integration into the schemata in the mind. Therefore, text is first decoded by low-order processing, and it is kept decoding by higher-order processing. During this decoding process, higher-order processing has no effect on lower-order processing, and no interaction is allowed between different-order processing; instead, processing occurring in any order can modify the information only for the immediate next-order processing (Liu, 2010; Rumelhart, 1985). For this reason, data-driven model is used as another name of the bottom-up model (Liu, 2010).

## Figure 2

### *Data-driven or Bottom-up Model*



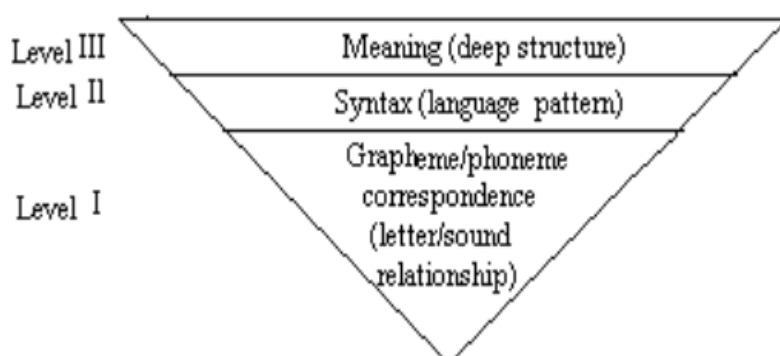
*Note.* This figure was taken from Liu, 2010, p. 156.



On the other hand, the top-down reading model prioritizes higher-order skills of readers because readers skim over a text to hypothesize and make predictions about the meaning of the text based on their background knowledge, prior experience, and linguistic knowledge (e.g., semantical and syntactical structures) according to this model (Carrel et al., 1988; Liu, 2010). Afterwards, lower-order skills are employed to verify the hypotheses and the predictions made at the beginning of the processing, which means that this model reversibly follows the stages in the bottom-up model by directing the process conceptually. In line with this, the researchers investigating top-down reading model argue that readers are not bound to decode all the textual elements (e.g., letters, graphemes, and phonemes), but rather they prefer to make use of semantical and syntactical clues to predict the words that may follow in the text, and they choose the most necessary ones while using these clues, and this clue choosing ability is dependent on the reader's prior experience (Liu, 2010). For this model encourages readers to depend on prior experience, semantical and syntactical clues available in the text to predict the meaning, it generally labels reading as "a psycholinguistic guessing game" (Carrel et al., 1988; Liu, 2010).

### Figure 3

*Hypothesis Test or Top-down Model*



*Note.* This figure was taken from Liu, 2010, p. 157.

When it comes to the interactive reading model, it combines the processes of the bottom-up model with the ones in the top-down model so that an interactive relationship occurs

between them, and readers have the opportunity to compensate for the drawbacks in comprehending a text that these linear models have by using the processes of both models simultaneously (Carrel et al., 1988; Liu, 2010). It was Rumelhart (1985) who developed the interactive reading model after he perceived that there were no existing representations and prescriptions of the information processing during that time which could explain the interacting nature of the simultaneous information processing by different knowledge sources. They naturally brought about the development of the linear reading models such as the ones Gough (1972) and LaBerge-Samuels (1974) had proposed because the information processing at that time was based on the studies revealing that second language learners undergo some consecutive presumable developmental phases whose difficulty of mental processing increases gradually, and which cannot be omitted (Schmitt & Rodgers, 2019). Consequently, this understanding of the information processing led the reading models to assume a set of noninteracting phases of processing and to use linear representations such as the unidirectional flowcharts to explain the reading process (Rumelhart, 1985). However, Rumelhart (1985) thought that the reading model developers at the time did not actually have a conclusive argument over the acceptability of the linear reading processing; instead, they had to accept it due to the absence of the representations which are suitable for interactive bidirectional phases of reading processing. Therefore, he came up with an interactive model of reading with the aim of presenting the suitable representations and simultaneous cognitive processes, and thus an opportunity for the development of the more comprehensive reading models which can describe the features of the reading processing the linear models are unable to describe (Rumelhart, 1985). These features are explained by Rumelhart (1985) with plenty of previous research outcomes on reading. To put them briefly, orthographic knowledge influences the way readers decode the letters; both syntactical and semantical knowledge influence the decoding of the words; and the semantical context influences the comprehension of all the text. To illustrate, it was found by Stevens (as cited in Rumelhart, 1985) that readers are more inclined to change the place of the letters in the letter sets which are not aligned in accordance with the conventions of the orthography, which shows the orthographic influence

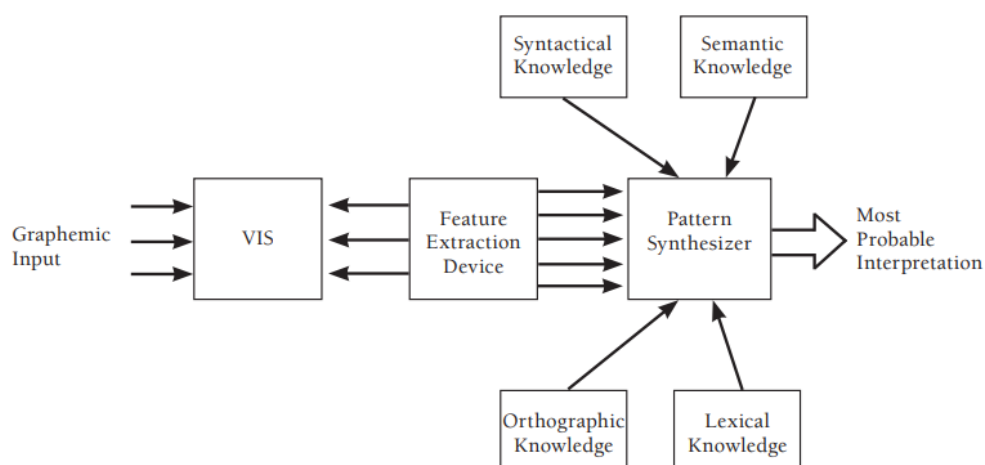
on the letter level. Evidence for the effect of the syntactical knowledge on the word level was provided with the errors readers make while they are reading aloud on the grounds that they replace the actual words with the erroneous words from the same lexical class as the actual words (Kolers, 1970, as cited in Rumelhart, 1985). Also, it is contended that readers recognize the words much more quickly when they have semantic association among them than when they do not have such association (Meyer & Schvaneveldt, 1971; Meyer, Schvaneveldt, & Ruddy, 1972, 1974; Ruddy, Meyer, & Schvaneveldt, 1973; Schvaneveldt & Meyer, 1973, as cited in Rumelhart, 1985). This suggests the semantical influence on the word perception, yet it is not always the case that the word processing is facilitated through the semantical influence as there are times when the processing faces handicaps due to it as in the experiment conducted by Graboi (1974, as cited in Rumelhart 1985) in which he used Neisser's visual search method (1964) to demonstrate that the scanning speed of the readers become slower when the words they look for on a word list are semantically associated with the other words included in the list than when they are semantically unassociated. Besides, some equivocal sentences in terms of their syntactic structure such as "They are eating apples." are given as examples by Rumelhart (1985) to explain how semantical context influences readers' syntactical processing (Carrel et al., 1988). When the quoted sentence alone is read, one cannot decide if "eating" is used as a verb or an adjective describing the kind of the "apples". This equivocalness in the sentence can be eliminated by providing it with a meaningful context as in the examples set by Carrel et al. (1988): 'What are the children eating? They are eating apples.' or 'What kind of apples are these? They are eating apples.'. Finally, it is stressed by Rumelhart (1985) that readers must consider the general context before assigning any meaning to the words or the sentences that form a meaningful text. As all these features point out that higher-order processing influences lower-order processing in reading, and it is not possible for the bottom-up reading models to involve such an effect, Rumelhart (1985) reckons them to be problematic. The top-down models are also problematic to him because the information from the lower levels is partially preserved and taken up to the higher levels during the reading processing. Therefore, the reading processing does not operate straightly from

bottom to up or from top to down, but instead it operates in a simultaneous way among various knowledge sources.

According to Rumelhart's interactive reading model (1985) as seen in Figure 4, the visual information store (VIS) records the graphemic input after it is perceived, then the input is scrutinized in the VIS by the feature extraction device to take out the features of interest and transmit them to the pattern synthesizer so that the feature extraction device provides the visual sensory input to the pattern synthesizer. Besides the visual sensory knowledge, there exists orthographic, lexical, syntactical, and semantical knowledge sources in the pattern synthesizer, and here is the area where the conjoint information is produced as a result of the concurrent interaction of all these knowledge sources to achieve the "most probable interpretation" of the text. It is postulated by Rumelhart (1985) that there is a contrivance, termed as "message center", enabling this interaction to occur in the pattern synthesizer by holding hypotheses based on the input and by allowing the knowledge sources to conduct an assessment on these hypotheses within their own knowledge domain to determine whether the hypotheses can be approved or disapproved or other hypotheses should be produced, and this assessment process ends up with the selection of the most plausible hypothesis (Carrel et al., 1988; Liu, 2010).

**Figure 4**

*Representation of Rumelhart's Interactive Reading Model*



*Note.* This figure was taken from Rumelhart, 1985, p. 732.

Consequently, the model built up by Rumelhart can give an account of the influences of higher-order processing and of the concurrent interaction among the knowledge sources, which the linear reading models cannot or is difficult for them.

Stanovich (1980) upgraded the Rumelhart's interactive model by adding it a compensation dimension (Carrel et al., 1988; Liu, 2010). He concurs with Rumelhart on the drawbacks that the bottom-up models have, and he also disapproves the top-down models as Rumelhart does, but with a different reason that readers may lack the background knowledge on the subject matter necessary to make predictions and hypotheses (Carrel et al., 1988; Liu, 2010). For these reasons, his model is interactive, that is, it allows for the concurrent interaction among various knowledge sources. At the same time, it is compensatory in that the dependence upon the particular sources of knowledge increases based on the reader's knowledge level to compensate for the lack in any sources of knowledge, which provides an account for the confounding results of a considerable number of studies on reading that the limits imposed by the context are considered by low-achieving readers more in some cases than done by skilled readers (Carrel et al., 1988; Liu, 2010).

Undoubtedly, the attempts to give plausible accounts for the way of reading comprehension are not limited to the above-mentioned models. Many other models for reading comprehension put forward in the literature so far, yet it is impossible to mention all of them in the current literature review. Realizing this situation, McNamara and Magliano (2009) reappraised the most prominent seven of them with the purpose of building up a full-fledged model which can describe all the reading processing thoroughly. During their appraisal of the models, McNamara and Magliano (2009) determined the fundamental dimensions included in these models which are displayed in Table 1.

**Table 1***Dimensions that Models Center Around According to McNamara and Magliano's Analysis*

Dimensions	Definitions and Explanations
Connectionsist architecture	Following connectionist assumptions, most models assume that comprehension involves the parallel activation of information in the environment (e.g., words in the text), the underlying meaning of that information, and prior knowledge. Activation sources are often represented as layers in a network of nodes and links, with nodes representing words, propositions, or concepts, and links representing the relationships between them (e.g., predicates, verbs, causal connections).
Spreading activation	This is the notion that the activation of concepts spreads activation to related concepts, resulting in a change in their activation. Current models generally assume some sort of retrieval mechanism that determines what information is initially activated or available. Spreading activation is applied to the available concepts in memory, and this process changes the activation of concepts depending on their connectivity and initial strengths in the representation.
Automatic unconscious processing	Virtually all models assume that some information is available automatically during reading, and that there is some level of processing that is not consciously available to the reader. However, the nature of automaticity, which comprehension processes are automatic or unconscious, and the effects of unconscious processing is debated between models.
Discourse focus	Comprehension models commonly assume that there is an attentional focus by the reader and this focus changes across time and as the input changes. The memorial strength of concepts and ideas is in part related to the amount of attentional focus they receive during encoding.
Convergence and constraint satisfaction	Comprehension models generally assume that the activation of any given concept or idea is based on the degree to which it receives activation from related concepts and ideas. The mental representation is constrained by activated concepts and the relations between concepts in the input, as well as by information available from long-term memory.
Mapping	This is a general term to refer to processes to establish how the current linguistic input is related to the prior context. Mapping is influenced by referential and situational cohesion. It is likely an unconscious activity, but the product can be consciously available to the reader. A sense of continuity emerges from the mapping process. When mapping fails, the reader may be induced to generate inferences.
Text-based inferencing	This refers to making inferences that establish connections between discourse constituents (or bridging inferences). These inferences can result when mapping processes encounter referential or situational cohesion gaps. Relationships between ideas in the text must be inferred when explicit cues such as argument overlap and connectives are absent. These inferences may be considered part of the situation model to the extent that they reflect causal, motivational, temporal, and spatial relationships.
Memory constraints	Comprehension models generally assume that working memory capacity is limited. Some models of comprehension have adopted an information processing perspective wherein working memory and long-term memory are separate and working memory capacity is limited. Other models have adopted the long-term working memory perspective wherein recently activated or highly familiar information is quickly available from long-term (working) memory.

*Note.* The table was taken from *Toward a Comprehensive Model of Comprehension*, by D. S. McNamara and J. Magliano, 2009. Chapter 9, p. 304.

With a closer examination of the table above and of the three models introduced before, it can be argued that the models concentrate mainly on the print-based text (the text in words) by disregarding the other modalities, which can be visual, aural, spatial, gestural, or multimodal, because there are no dimensions dealing with the influence of the incorporation of various modalities into the text on the reading comprehension within the scope of the models. The same argument has already been echoed by McNamara and Magliano (2009) who also state that the variations of the various modalities in terms of their impact on the comprehension have not been elaborated by the models. Therefore, the models have also been far from dealing with the semiotic resources in the modalities, some of which not only just activate the senses but also provide specific cultural information.

In addition, the literature on testing reading comprehension in different contexts of English language teaching was also reviewed to determine if there are any initiatives of deploying multimodality in testing reading comprehension, which interests the current study particularly as it is used as the intervention of the study. The literature (Daly & Unsworth, 2011; Karatza, 2020; Unsworth, 2014; Unsworth & Chan, 2009) has revealed that the main focus for the testing reading comprehension is on the linguistic mode as in the reading comprehension models, so there is little or no co-occurring integration of the modalities into the reading comprehension tests. When the large-scale English language tests administered in Turkey such as YDS, YDT, and YÖKDİL are examined, it also emerges that they include only linguistic mode. However, Unsworth (2014) and Karatza (2020) argue that the negotiation of the integrative use of various modes is necessary not only for the teaching reading practices but also for testing reading, especially the large-scale or high-stakes tests, because these tests have washback effect on the teaching reading practices at schools. Moreover, by complaining that Australia's National Assessment Program for Literacy And Numeracy (NAPLAN) does not

conform with the goals of Australian Curriculum: English (ACE) requiring students to interpret multimodal texts comprised of visual and linguistic modes, Unsworth (2009, 2014) believes that the curriculum and the national testing should be parallel in involving multimodality so that they can reflect authenticity and improve students' ability to cope with the real-life reading tasks which are predominantly multimodal. Furthermore, Daly and Unsworth (2011) showed that the visuals inserted into the reading texts do not necessarily facilitate the comprehension of the texts by conducted a study in which the Basic Skills Tests (BST) administered in years 2005 and 2007 in New South Wales were examined to determine if there was a relationship between the difficulty of the items and the connection types of the visual and the linguistic modes present in the items. As there was a significant difference among the difficulty means of the items for each visual-language connection type, the visual and the language aspects of the items were separately analyzed in terms of their complexities by adopting Halliday's Functional Grammar (1994) and Kress and van Leeuwen's Visual Grammar (1996) to explore if they were the components influencing the difficulty of the items as well as the visual-language connection type. The visual-language connection types were mainly categorized into 'concurrence' and 'complementarity' concepts (Daly & Unsworth, 2011). 'Concurrence' denotes the connection with which a specific mode depicts the meaning of another mode type without providing further meaning to the relevant mode, and the connection type of 'concurrence' divides into three subcategories of 'exemplification', 'exposition', and 'equivalence'. 'Complementarity' is the connection type in which one specific mode extends the meaning of a different mode to convey a complete meaning to the audience. 'Complementarity' also contains three subcategories of 'augmentation', 'distribution', and 'divergence'. The results of the study (Daly & Unsworth, 2011) showed that the difficulty means of the items varied according to the visual-language connection types which the items included. The difficulty of the items with different visual-language connection types followed the increasing order of difficulty from 'equivalence', 'exposition', 'distribution' to 'augmentation' connection types. The same difficulty order was followed when the students read online multimodal text (Unsworth & Chan, 2009). Furthermore, it was found that there was no significant influence of the different visual



complexities on the difficulty of the items while the high and medium level linguistic complexity contributed to the item difficulty (Daly & Unsworth, 2011). The researchers provided a possible explanation for this finding by suggesting that more sensitive indicators of visual complexity might have been required to determine the complexity of the visuals. By considering the findings of the study, the researchers draw the implication that the language teachers should be aware that the interpretation of the meaning of the visual mode and the linguistic mode necessitate different meaning-making processes and the visual mode does not always make the meaning of the linguistic mode easier and therefore the students may need explicit teaching on how to interpret the visual mode and the teachers' modeling on how to relate the visual mode to the linguistic mode in order to recognize any other meanings deriving from the connection between the different modes.

The above-mentioned negligence in reading models and testing reading comprehension has caused the EFL teachers to use the approaches that do not reflect today's authentic reading tasks for the reading instruction, and thus disengage the students from the reading instruction. Today, most of the students from all levels of education are immersed into a digitalized world, in which the multimodal texts on the internet are increasingly predominant, and they feel divergent and show inexperience when they face only the linguistic mode in the instruction (Farías & Véliz, 2019; Jewitt, 2005; Pan & Zhang, 2020; Siegel, 2012). All these suggest that using the multimodality and the semiotics would be helpful to make the EFL reading instruction effective.

## **Multimodal Approach**

### ***Notions of Mode, Multimodality, and Multimodal Approach***

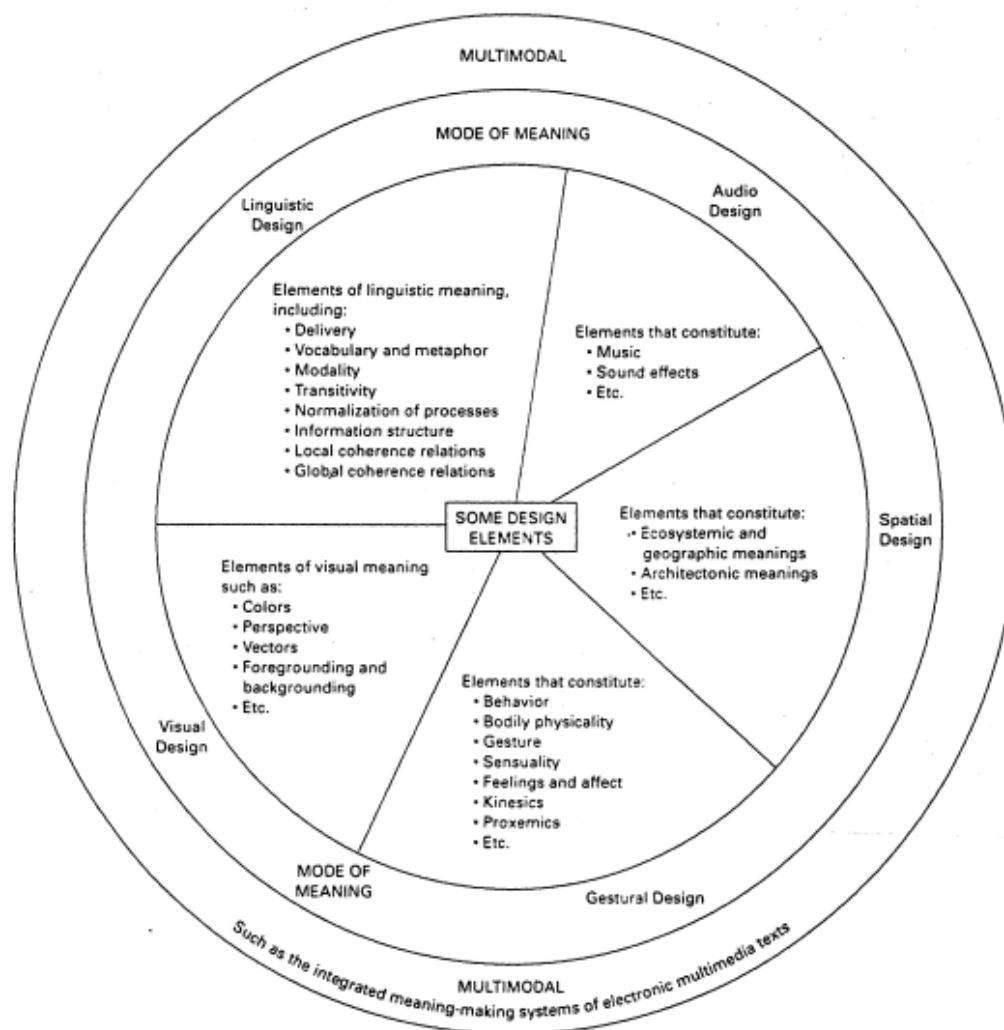
*Modes* denote the semiotic resources or the communication channels which enable interaction with the external world and through which meaning-making is realized (Jewitt et al., 2016; Kress & Van Leeuwen, 2001; The New London Group, 1996). In 1996, The New London Group introduced six main types of mode (see Figure 1), which were termed Linguistic Design, Visual Design, Audio Design, Spatial Design, Gestural Design, and the Multimodal Design

(The New London Group, 1996). They preferred to use the term of design for three reasons. Firstly, it reflects creative and productive characteristics of the modes. Secondly, they wanted to avoid the prescriptive and the restrictive connotations of the term grammar. Thirdly, the term of design perfectly fits the treatment of any activity for meaning-making by the New London Group as they suggested that any activity for meaning-making includes three main components which are *Available Designs*, *Designing*, and *The Redesigned*. According to the New London Group, *Available Designs* denote the semiotic resources from which meaning-making activities are derived, and they involve both their own rules (their own grammars) for meaning-making and discursive conventions for different social settings. There is also intertextuality in *Available Designs*, and it is the connection between the designed text and the previously designed texts which provide background information of the designers (readers, listeners, speakers, writers) of the text about their grammar and discourse. *Designing* refers to the meaning-making activity that alters *Available Designs* by considering its surrounding sociolinguistic factors to produce *The Redesigned*. In the *Designing* process, something new absolutely occurs for *Available Designs*, that is, they never remain unchanged due to the creative and generative nature of the *Designing* process. Therefore, *Designing* changes *Available Designs* into *The Redesigned*. Moreover, according to this treatment of meaning-making activity, not only are speaking and writing the productive language skills but also listening and reading are since reading texts and listening texts are also examples of *Available Designs*, and while they are being processed or designed by readers or listeners, they get into interaction with the prior knowledge on different *Available Designs* belonging to readers or listeners, which causes unique changes in the interpretation of the texts on the part of readers and listeners. As stated before, *The Redesigned* is a newly produced meaning at the end of a meaning-making activity (or *Designing*). It can by no means be called as a replication of a single *Available Design* or as an ordinary *Available Designs* rearrangement. Instead, *The Redesigned* should be called as a newly produced semiotic resource, a fresh ready-to-be-used *Available Design*, which is shaped by the interaction between the former cultural semiotic resources and the linguistic and sociocultural characteristics of the designers during the

*Designing* process. Therefore, The New London Group (1996) laid the foundation for what a mode is and how modes or a mode operate/s in the meaning-making activities. In this dissertation, the term mode instead of design is used for the reason that many recent studies adopting multimodality (Boshrabadi & Biria, 2014; Chan & Unsworth, 2011; Liu & Liu, 2015; Pan & Zhang, 2020; Yimwilai, 2019 ) of the same kind as the one in the current study, which is in the use of digitalized modes of meaning for the foreign language instruction context, also use the term mode, and most probably, this stems from the fact that the term mode lends itself more to technology.

**Figure 5**

*Design Elements of Different Modes of Meaning*



*Note.* This figure was taken from The New London Group, 1996, p. 83.

Of the six modes, the Multimodal mode differs as it has a function of removing the boundaries among the activity areas of two or more of the other five modes and linking them with each other to varying degrees in both flexible and productive bonds to create meanings which the other five modes are unable to create on their own (The New London Group, 1996; Ganapathy & Seetharam, 2016; Jewitt et al., 2016). Additionally, the adopters of the multimodality claimed that each of these modes serves a distinctive function in the meaning-making process with each one's own affordances and limitations although some linguists and psychologists such as Saussure and Vygotsky argued that linguistic mode is the most efficacious resource that can carry out the functions of communication in the most comprehensive way (The New London Group, 1996; Jewitt, 2012; Jewitt et al., 2016; Kress, 2015; Varaporn & Sitthitikul, 2019). Thus, all the modes are dependent on each other and function concurrently for the semiotic activities taking place during the meaning-making process. As a result of their collaborative work, the modes contribute to the creation of a new resource of meaning-making.

*Multimodality* is generally regarded as making use of multiple modes for meaning-making, yet this assumption is not enough to define the term multimodality on the grounds that it does not reflect an important characteristic of the term that many scholars highlighted, and that characteristic is the unifying role of the multimodality between the different modes; in other words, the multimodality is the use of the combined effect of the various modes in creating meanings by challenging the rigid domain limits of the different modes, each of which was specialized and separately studied for various disciplines, e.g., speech and writing were specialized for linguistics, music was specialized for musicology, image and film were specialized for semiotics (Jewitt et al., 2016).

Moreover, it is the mainstream that multimodality is the new form of texts, yet this is denied with the reason that it can be traced back to the middle age, much more before the digital age, when there were literary works written by hand such as the manuscripts including miniatures and the scenarios for theatres and operas (Siegel, 2012). Also, the ageless

existence of the multimodality in print-based texts is stressed by The New London Group (1996):

In a profound sense, all meaning-making is multimodal. All written text is also visually designed. Desktop publishing puts a new premium on visual design and spreads responsibility for the visual much more broadly than was the case when writing and page layout were separate trades. (p. 81)

In the same vein, there are other researchers (Jewitt, 2005; Siegel, 2012) who put forward the ever-multimodality of print-based texts because even the line spacing and the other textual features and structures such as font type, font style, and font color necessitate multimodal interpretation.

Along with this, Kress and Van Leeuwen (2001) point out that each mode used to fulfill tightly restricted semiotic tasks in multimodal environments in the past. For example, an action had to be conveyed through images and emotions through music in a movie; however, they assert that these strict task descriptions of the modes have disappeared in the present-time multimodality by virtue of developments in digitalization. As a result, the modes have become multi-skilled, and a particular semiotic task can be carried out by any mode. For instance, actions can be codified not only by images but also by music. Therefore, it can be concluded that digital advancements in communication technologies have changed only the form and the capabilities of the multimodality available in print-based texts, so they did not invent the multimodality for the texts. After all, this change has profoundly affected the literacy practices across the world through the internet, and consequently the digital forms of texts have gained widespread popularity and interest with the conveniences they offer, which has sidelined print-based texts (Farías & Véliz, 2019; Jewitt, 2005; Guillén, 2021; Siegel, 2012).

*Multimodal approach*, in the language teaching context, adds up to drawing on a variety of modes or semiotic resources, such as visuals, gestures, sounds, and space, alongside language in designing teaching/learning activities, materials, and curricula in order to facilitate

the meaning-making process for students and to increase their engagement in the activities, thus making way for better learning outcomes (Jewitt, 2012; Moreno & Mayer, 2007; Sankey et al., 2010; The New London Group, 1996; Varaporn & Sitthitikul, 2019). Despite the widespread use of the new form of multimodality in daily literacy practices, PowerPoint slide shows, webpages, videos and all the web 2.0 tools for instance, it is scarcely tapped into for second or foreign language literacy instruction (Farías & Véliz, 2019; Royce & Bowcher, 2007). However, a great number of researchers (Ajayi, 2010; Bao, 2017; Farías & Véliz, 2019; Jewitt, 2005; Royce & Bowcher, 2007; Sankey et al., 2010) emphasize the necessity for ESL or EFL teachers to draw on the new form of multimodality in literacy instruction and to improve ESL or EFL students' competence for multimodal communication, which echoes one of the two primary concerns underlying The New London Group's (1996) advocacy for the multimodal approach to literacy instruction, and the other one is the realization of cultural and linguistic pluralism, informing the texts as a result of the globalization, in the instruction.

Notwithstanding the emphasized necessity of the use of multimodality in ESL or EFL literacy instruction context, some researchers (Chan & Unsworth, 2011; Jewitt, 2005; Liu & Liu, 2015) express several problems regarding it which can arise during the comprehension processes of the students. These problems can be reported as the mental workload caused by the conceptual gap between the modes combined with each other, the use of images which cohere with a written text through giving additional information on the text by completing its meaning instead of elaborating it for instance (Chan & Unsworth, 2011); the divergence between the mode designers' interpretation of the meanings produced by the modes and the students' interpretation of the same modes, and giving special attention to one particular mode among the others, which prevents the students from interpreting the meaning produced by the unified mode whole (Jewitt, 2005); and the distraction led by being exposed to excessive number of different modes (Liu & Liu, 2015).

Considering the above-mentioned complications, the ESL or EFL teachers should thoughtfully adopt the multimodal approach for their literacy instruction and arm students with

the knowledge of how to determine and analyze the various modes and mediate the students' use of the modes when required (Chan & Unsworth, 2011; Jewitt, 2005).

### ***Related Studies on Multimodal Approach***

A number of studies have been published on the multimodal approach to reading instruction, and some of these studies (Bao, 2017; Pan & Zhang, 2020) used nonequivalent pre-test and post-test control group design to investigate the effect of the application of multimodality to teaching reading on EFL students' reading proficiency. The data was obtained from the pre- and post-reading tests, between which Bao (2017) additionally administered five reading quizzes to examine the gradual change in the students' reading ability, showed that the application of multimodality led the students to increase their reading proficiency, and it came out to be more effective than the traditional approach to reading instruction in EFL context.

Another study with nonequivalent pre-test and post-test control group design undertaken by Varaporn and Sitthitikul (2019) explores the effect of multimodal tasks on Thai EFL university students' critical reading ability. The participants of the study were from different undergraduate grade levels and different majors, but all were taking the Fundamental English Reading course, the objective of which was to have the students gain reading comprehension and critical reading skills. During this course, the teacher-researcher taught critical reading by assigning students in the experimental group the multimodal tasks within the Learning by Design framework developed by Kalantzis and Cope (2005), while the researcher taught critical reading to the students in the control group by using the traditional monomodal approach. In the experimental group, the students were required to produce multimodal artifacts to demonstrate their critical reading stances about the passage they were given. The control group was to express their critical reading stances only in the written way. The findings of the study indicated that employing multimodal tasks remarkably improved Thai EFL students' critical reading ability, and so the evidence from the study proved that multimodal tasks affected the critical reading ability of the students positively.

Other related studies (Boshrabadi & Biria, 2014; Liu & Liu, 2015; Yimwilai, 2019) following true experimental research design through pre-test and post-test also revealed that the multimodal learning environment was more effective in improving EFL students' reading comprehension proficiency and in English learning in general compared to the traditional method. These studies and they additionally pointed out that integrating multiple modes into the learning environment enabled the students to pronounce the vocabulary better, use words and expressions in accordance with the context (Boshrabadi & Biria, 2014), to have eagerness and confidence to participate in the learning activities (Liu & Liu, 2015). Further, the integration of multimodality made the students more motivated than the traditional text-bound teaching (Boshrabadi & Biria, 2014; Liu & Liu, 2015; Yimwilai, 2019), created an opportunity for the lower achievers to catch up with the higher achievers in English proficiency (Liu & Liu, 2015), fulfilled the different needs of the students whose learning styles are different (Yimwilai, 2019), and developed their multimodal communicative competence since the experimental group successfully employed eye contact and gestures which are non-linguistic modes whereas the control group could not employ them in the oral exam (Liu & Liu, 2015).

Furthermore, Ntelioglou et al. (2014) aimed to foster the academic and literacy engagement of the English language learners (ELL) studying in a multilingual and plurilingual classroom at an inner-city elementary school by making use of the multimodal approach to literacy teaching. The researchers employed the Collective Pedagogical Inquiry method and collected data with observation, videotaped classroom practice, and multimodal artifacts. The findings of this study are consistent with the previously reviewed studies because they indicated that multimodal practices enhanced the students' literacy investment, literacy engagement, and learning. Besides, the multimodal affordances helped the students who feel unconfident as they cannot speak English fluently when adhering to only language gain self-confidence by offering the students multiple ways to express themselves.

Moreover, Lee (2013) examined Taiwanese ESL university students' learning experiences of multimodal response to literature. With this aim, the researcher drew on



videotaped group presentations and peer evaluation survey as instruments, and this study produced results that corroborate the findings of Varaporn and Sitthitikul's study (2019) as it emerged that having the students create multimodal reading responses made them engaged with the text, enabled them to expand their reading experiences, and to increase their comprehension of the text. Apart from these, most of the students evaluated each other's group presentations positively, and it turned out that the students preferred various modes of responses rather than a single mode of responses according to the peer evaluation survey results.

By focusing on a different aspect of the use of multimodality, Farías and Véliz (2019) attempted to elicit the experiences of English teacher trainers and prospective English teachers who were from various Chilean universities on the use of multimodal texts for teaching English through surveys which revealed that most of the teacher trainers were familiar with the role of multimodality in literacy instruction. However, it was highlighted that most of the teacher trainers had not received any undergraduate courses to use multimodal texts for pedagogical purposes because today's multimedia technology providing the widespread use of multimodal texts was absent when they were students; teacher educators lack materials, resources, and adequate time to incorporate multimodality into literacy instruction; and they find it hard and complicated to make meaning from multimodal texts. Moreover, the majority of the prospective teachers indicated that the texts they read in their daily lives, outside the courses are occasionally incorporated into their courses by their teachers at university. Last but not least, it was determined that there is a huge discrepancy between prospective teachers' multimodal literacy practices in their daily lives and those that teacher trainers use for academic purposes.

With a systematic review study, Putra (2021) puts forward that the interest in reading showed by the students can be increased through the use of the infographics, which are multimodal graphic instruments combining visual and linguistic modes to communicate the content in a brief and attractive way, and by considering the theoretical background and the experimental findings related to use of infographics in education from the review, the

researcher recommends the following guidelines on how to use infographics in EFL reading instruction. Firstly, the teachers should design their own infographics according to the characteristics of the students and of the course subject instead of using ready-made infographics since they can be unsuitable for their teaching context. Secondly, the teachers must avoid using the infographics with complex content. They should include concise and clear content, which is easy to understand, and at the same time the teachers should design the elements of both visual and linguistic modes in the infographics such as headings and diagrams in a way that attracts students' interest. Finally, the teachers should request the students to examine the infographics critically and make inferences. Accordingly, Putra (2021) reports the advantages of the infographics use in EFL reading instruction as the straightforward and efficient presentation of the content by emphasizing the main points, presenting the content in an attractive way to arouse the students' interest with the use of visual mode, improving the students' creative thinking ability when they are required to create their own infographics, and improving the students' critical thinking ability since it requires the students to adopt a critical perspective while examining the infographics to infer the meaning of the infographic content, which are confirmed by the findings of the recent relevant studies (Bicen & Beheshti, 2019; Cupita & Franco, 2019; Sornkeaw, 2021).

Bicen and Beheshti (2019) integrated infographics into flipped classroom learning for teaching ESL to its effect on the students' success for English learning through exams, and they found that the new approach increased the student's English language skills. By having EFL university students generate their own infographics for the given reading materials, some researchers (Cupita & Franco, 2019; Sornkeaw, 2021) looked into the effect of the infographics use on the students' reading ability. While Cupita and Franco (2019), in Colombian EFL context, conducted a qualitative study in which they analyzed the infographics produced by the students to discover whether having the students in groups create their own infographics for the given texts will improve their comprehension ability, Sornkeaw (2021) conducted a mixed methods study in Thai EFL context through pre-test and post-test for single group research

design in which she incorporated infographics into the KWL-Plus (Carr & Ogle, 1987), which is a metacognitive reading strategy, as the research intervention to reveal its effect on the reading comprehension. Comparing the results of both studies (Cupita & Franco, 2019; Sornkeaw, 2021), they showed that the students' abilities in reading comprehension were enhanced through the production of the infographics by the students themselves.

However, the use of multimodal approach to reading instruction is not without challenges as evidenced by the qualitative study carried out by Chan and Unsworth (2011). In their study, Australian sixth graders responded to a survey on their activities related to the internet such as if they have access to the internet, how much time they spend online, and for what purposes they browse the internet, and they were personally interviewed while the students were doing the reading activities designed for the texts on three different educational websites, whose visuals vary in the relationship with the texts. Whereas some visuals clearly describe the content of the text they appear with, others do not have clear connections with the text they are inserted in. The results of the survey and the interview indicated the following challenges the students confront during the online reading process. The students had difficulty in unifying the meanings that come from various modes to arrive at a coherent interpretation of a multimodal text. Besides, the hyperlinks of the texts confused the students about how to move on reading the texts. Moreover, the vague relations between the visuals and the texts and between the linking phrases made it difficult for the students to deduce intelligible meaning from the texts. Other challenges related to the use of multimodal approach in literacy practices are identified in different studies that joining in the reading activities with a new approach, which causes the students to be more determined and diligent, makes some students uncomfortable as they do not want to step outside their comfort zone (Bicen & Beheshti, 2019); the students' relying heavily on only visual mode during the multimodal reading practices by diverting themselves from the main purpose of the multimodal approach (Cupita & Franco, 2019), which echoes Jewitt's (2005) argument; not having a healthy internet connection can cause waste of time during the class, so the teachers should carry the printed form of their

multimodal texts around in the case that there is no internet connection or it is unstable (Cupita & Franco, 2019; Sornkeaw, 2021).

All in all, it could be suggested that the teachers can successfully integrate the multimodality into their English reading lessons to enhance their students' reading comprehension skills and have them engaged with the lessons more if they take into consideration the above-mentioned possible challenges that can arise when they adopt the multimodal approach and take precautions against them.

### ***Related Studies on Attitudes Towards Multimodal Approach***

Most of the researchers (Boshraadi & Biria, 2014; Lee, 2013; Liu & Liu, 2015; Pan & Zhang, 2020; Varaporn and Sitthitikul, 2019; Yimwilai, 2019) who conducted studies to explore the effect of the multimodal approach to reading instruction also aimed to investigate the attitudes of the students towards a multimodal approach for English literacy teaching. The findings obtained from the questionnaires showed that EFL students had positive attitudes towards the multimodal approach (Boshraadi & Biria, 2014; Liu & Liu, 2015; Pan & Zhang, 2020; Varaporn and Sitthitikul, 2019; Yimwilai, 2019). For example, most of the students found the multimodal approach more fun and interesting than the traditional approach and thought that it engaged them in the lessons better (Boshraadi & Biria, 2014; Liu & Liu, 2015; Pan & Zhang, 2020; Yimwilai, 2019). Furthermore, they believed that their reading comprehension was improved (Boshraadi & Biria, 2014; Pan & Zhang, 2020; Yimwilai, 2019), they comprehended the main point more accurately, and their reading speed accelerated with the help of multiple modes provided to them while reading (Pan & Zhang, 2020). Alongside these, it came out that they thought that their autonomous learning skills developed (Varaporn and Sitthitikul, 2019), and they want to continue to use different modalities in their future study and work (Liu & Liu, 2015; Varaporn and Sitthitikul, 2019). Moreover, the studies focusing on the ESL students' attitudes towards multimodal approach (Lee, 2013; Ganapathy & Seetharam, 2016) produced results which that agree with these findings, and they additionally indicated that the students admitted that their vocabulary, pronunciation, and writing skills improved

through multimodal learning activities. However, some negative statements regarding the multimodal activities were determined in the reflective journals and semi-structured interviews of the students in Varaporn and Sitthitikul's study (2019) because the students stated that they had difficulty in managing the time and lacked the necessary skills to perform the multimodal activities.

Some researchers (Bicen & Beheshti, 2019; Cupita & Franco, 2019; Sornkeaw, 2021), adopting the multimodal approach by using infographics in their English reading instruction to find out its effect on the students' comprehension ability in EFL context, explored the students' attitudes and reflections towards the utilization of the infographics for the reading instruction at the same time. The findings of their studies appeared consistent with the prior findings (Boshrabadi & Biria, 2014; Liu & Liu, 2015; Pan & Zhang, 2020; Varaporn and Sitthitikul, 2019; Yimwilai, 2019). To illustrate, Bicen and Beheshti (2019) investigated the university students' insights into the integration of infographics into flipped classroom learning for teaching ESL through quantitative and qualitative surveys, and they concluded that the students found the infographics useful thanks to their uncomplicated way of content presentation and the students indicated that the infographics were motivating and engaging for them to participate in the language activities. Besides, the students had positive feelings towards the new integrated instruction approach. Cupita and Franco (2019) interviewed with the Colombian university students, whose major is psychology and English levels are at the basic level, to discover their reflections on the use of infographics for the reading instruction. Likewise, Sornkeaw (2021) explored the students' attitudes towards the utilization of the infographics integrated with KWL-Plus through the questionnaires with open-ended items. These studies reported the students' positive remarks on the utilization of the infographics for reading instruction. For example, the students stated that they achieved a better understanding of the content of the given texts thanks to the infographics they prepared for the text, and they also remarked that the process of the infographics preparation made them actively engaged with the texts and made the

reading process a funny and creative activity for them (Cupita & Franco, 2019; Sornkeaw, 2021).

Eliciting pre-service teachers' attitudes towards teaching through multimodality was another research focus (Ajayi, 2010), and it was found out that a large number of the pre-service teachers have an intention to teach their students the skills to use all modes of communication to make meaning, they believe that teaching of literacy must keep up with the realities of increasing global interconnections, and it should incorporate the increasing types of text forms such as media texts. Besides, they reflect positive attitudes towards receiving further courses on multimodality since they are of the opinion that that kind of courses help them acquire the essential skills and strategies to teach with multimodal materials.

In conclusion, one can infer from the literature that adopting the multimodal approach for English reading instruction is an effective way to invoke positive attitudes towards English reading and to make the reading process more engaging for the students.

## **Semiotic Approach**

### ***Notions of Semiotics, Sign, Semiotic Approach, Icon, Index, and Symbol***

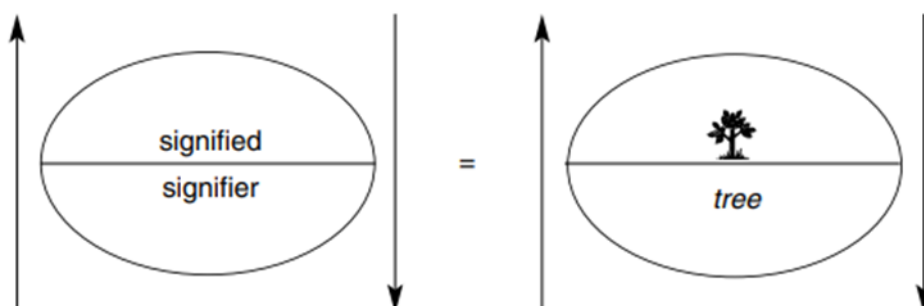
*Semiotics* is commonly defined as the “study of signs” (Harrison, 2003). Another definition comes from McCarthy (1996) as “Semiotics ... describes the process by means of which the human operates in the world, organizing experience which he/she understands as, if not indeed through, a series of signs.” and regarding its scope, “semiotics studies how it [meaning] is built into signs and texts of all kinds (words, symbols, drawings, musical compositions, etc.).” (Danesi, 2007, p. 12), and semiotics also examines the functions of signs which are included in verbal, nonverbal, and visual communications (Şenel, 2007; Danesi, 2007, p. 4).

As it is apparent from these statements that semiotics treats “the sign” as its fundamental unit (Sert, 2006) and when it comes to what a sign is, Danesi (2007) defines it as “something that stands for something else in some way.” (p. 29). In order for that ‘something’

to be accepted as a sign, it must have a meaning or content and it must be conveyed through a form of expression or representation (Danesi, 2007; Harrison, 2003). This structure of sign was explained with two components by Saussure (1857–1913). He introduced the signified for denoting the meaning or the content and the signifier for the form the sign takes and the link between these components is bilateral, namely that there exists an interplay between them (Danesi, 2007; Sert, 2006; Kress, 2015). Furthermore, this bilateral link is mostly established arbitrarily because there are some exceptions such as icons and indexes, and the linkage process is dependent on culture (Danesi, 2007; Harrison, 2003; Sert, 2006). To illustrate, when we think, read, hear, or say the word “tree” (signifier), the image of a tree (signified) necessarily springs to mind, and this applies to the other way round as well. So, when we look at a tree image (signified), the word “tree” (signifier) springs to mind, and this word is culturally encoded to the minds of English speakers (see Figure 5) (Danesi, 2007; Sert, 2006). However, speakers of a particular society whose culture is quite different from the English culture would find it relatively challenging to decode the signs of English culture, including the English language because a language is a sign system on its own, in comparison with the similar cultures to the English culture because the link between the signified and the signifier components of the signs used in a particular society is dependent on the culture of that society. In other words, the degree to which the sign system of a society varies from that of the target society determines how difficult for a speaker to learn the target sign system (Danesi, 2000; Harrison, 2003).

### Figure 6

*Representation for the Bilateral Link between the Signifier and the Signified*



*Note.* This figure was taken from Danesi, 2007, p. 30.

When teachers draw on semiotics in their teaching activities, it could be regarded that they implement a *Semiotic Approach*; that is, the semiotic approach is a way of teaching which makes use of signs to facilitate learning (Şenel, 2007). It is put forward that using semiotics would bring favorable effects into learning environments if the teachers' and students' awareness for signs is raised in that a certain culture is intertwined with its own signs and they have a significant influence on learning environments (Sert, 2006).

This approach is especially crucial to foreign language teaching in view of the fact that a foreign language is a system of signs produced by a foreign culture (Erton, 2006; Sert, 2006). Moreover, it develops the cognitive abilities of language learners by arousing different levels of perception and, at the same time, provides teachers with a wide array of tools and modes of teaching (Erton, 2006).

As previously mentioned in the *Reading Comprehension* section, the most frequently referred reading models in the literature focus on only the reading processes occurring in print-based texts. Nonetheless, comprehension of multimodal texts entails a different reading process (Boshrabadi & Biria, 2014) because they involve not only linguistic mode but also other modes that are visual, audio, gestural, and spatial discretely or in a combined way to scaffold the meaning-making (Bearne, 2003; Walsh, 2006, as cited in Boshrabadi & Biria, 2014). Therefore, a reader of a multimodal text needs to concurrently process the messages that the words, images, pictures, and sounds hold. In this sense, using a semiotic approach to reading could be a good alternative to the reading models (Erton, 2006; Şenel, 2007) and to understand the nature of the signs included in multimodal texts better, the kinds of signs are presented below (Sert, 2006; Şenel, 2007):

**Symbol:** A symbol is a sign that has no resemblance to the thing it stands for. In other words, the components of which (the signified and the signifier) have a totally arbitrary, conventional



link. For this reason, one must learn the link between them to use this kind of sign. For instance, all languages in the world, traffic lights, numbers, Morse code, or national flags are counted as symbols.

**Icon:** The second kind of sign is icon, and it is recognized when the signifier bears a resemblance to the signified. Portraits, cartoons, imitative gestures, onomatopoeia such as 'buzz', the bee sound, realistic sounds in program music, sound effects in a radio drama are examples of an icon.

**Index:** The last kind of sign is the index in which the signifier and the signified are related to each other in some way. That is, there is no arbitrary connection between them. To exemplify, there is a direct connection between smoke and fire, thermometer, and temperature.

The present study draws on all these kinds of signs to apply a semiotic approach by taking into account Pierce's argument that "the most perfect of signs are those in which the iconic, indicative, and symbolic characters are blended as equally as possible" (1903).

### ***Related Studies on Semiotic Approach***

Although a fair number of book scholars (Erton, 2006; Lier, 2004a; Lier, 2004b; Semetsky, 2010; Serafini, 2013; Sert, 2006; Unsworth, 2008; Şenel, 2007) and perspective articles (Lier, 2004b; Sert, 2006; Erton 2006; Şenel, 2007) have emphasized that using semiotic elements enhances the comprehension of textual meaning and they are instrumental in foreign language teaching by suggesting the ways of using signs to teach different language skills, there are relatively few research studies that are concerned with the semiotic approach to literacy teaching. The findings of a case study carried out at a kindergarten in the United States of America (Su, 2009) showed that incorporating multiple semiotic systems into literacy instruction increased active engagement of the students in the lessons by drawing the students' attention, helped the students to extend their vocabulary and realize letter-sound connections, enabled embodiment of abstract concepts facilitating the meaning-making process for the students, and provided the students with authentic tasks, and catered to

individual learning needs of the students. In addition, it was revealed that the reading comprehension of Turkish ELT students was significantly affected by their familiarity with the cultural elements in the text they read for an experimental study (Erten & Razi, 2009), and this finding provides evidence for the suggestions of the authors (Lier, 2004b; Semetsky, 2010; Sert, 2006; Erton 2006; Şenel, 2007) who claim that learning a new language requires learning a new culture, and necessarily, the signs of that culture to establish meaningful connections in the context of the target language. Moreover, by being against analyzing the meaning that is inferred from the texts and visuals as invariable and following the Peircean semiotic approach that regards semiosis as the means of undesignated and dynamical cultural meaning-making, Weninger and Kiss (2013) made an analysis on two different English coursebooks by Hungarian authors in Hungarian EFL context to reveal the emergent meaning-making processes shaped by the interaction with the assemblage of text, visual, and learning activities, which also involves the possibility for the students to derive meanings related to the culture. Their study concluded that the dominance of the indexical type of link between the visuals and the texts in the coursebooks leads the meaning-making process to get stuck at the denotational meaning level, and the learning activities accompanying them also direct the students to think linguistic denotations rather than ponder on the implications for the target culture. Therefore, the researchers (Weninger & Kiss, 2013) suggested that symbols and icons should be included in the coursebooks and that the learning activities should encourage the students to reflect on cultural meanings within the visuals and the texts and thus raise awareness for the target culture.

It should be noted that the researcher's dealing with the multimodal approach and the semiotic approach separately does not suggest that they are mutually exclusive. On the contrary, they are closely associated with each other as it could be inferred from the literature (Farías & Véliz, 2019; Jewitt, 2012; Jewitt et al., 2016; Kress & Van Leeuwen, 2001; Pan & Zhang, 2020; The New London Group, 1996).

## **Metacognitive Reading Strategies**

### ***Notion of Metacognition***

*Metacognition* is generally regarded as “thinking about thinking”, which is the simplified form of what the coiner of the term, American psychologist John Flavell (1979), originally wrote for its definition, “knowledge and cognition about cognitive phenomena” (p. 906). After Flavell’s definition, other attempts to define the term elaborately have taken place in the literature. For example, these definitions have focused on the “monitoring, and regulation or control of thinking processes” as the main components of metacognition (Mokhtari & Reichard, 2002; Soto et al., 2019). In his innovative article (1979), Flavell propounds that “metacognitive knowledge” is activated by the monitoring of the undertakings associated with thinking and conscious or unconscious mental processes, and “metacognitive knowledge” is one of the four elements among "metacognitive experiences", "tasks", and "strategies" functioning and interacting with each other for the monitoring to be conducted, which he explains with a “cognitive monitoring” framework (Griffith & Ruan, 2005). According to Flavell (1979), “metacognitive knowledge” subsumes ideas, feelings, and information about the parameters of “person”, “task”, and “strategy”. The ideas, feelings, and information related to all the agents with cognition at individual and universal levels are included in the person parameter. For instance, one may think that learning through auditory learning is more influential for him than others, or one may think that someone from his circle of friends is more emotional than the others. Other examples are given for the universal level: The kids may realize that comprehension is a spectrum in which its different levels and types exist, and they can also realize that no comprehension may take place. The task parameter pertains to the information and implications on the ways by which the cognitive tasks need to be performed with what kind of information at disposal and on the likelihood of accomplishing the task objective. When it comes to the strategy, it is germane to the information on the determination of suitable strategies according to the task objectives, and the strategies may be metacognitive or cognitive. Also, Flavell (1979) thinks that the course of undertaking the cognitive tasks is largely

affected by metacognitive knowledge. To illustrate, the tasks and strategies are chosen, assessed, reviewed, or given up based on the interconnection among the parameters of the metacognitive knowledge. Besides, Flavell (1979) adds that metacognitive knowledge can give rise to metacognitive experiences which can be described as the moments when one performs a quality control on his thinking processes. For example, one can get confused for a moment during the thinking process and he can pass over it immediately after, but one can stop to think about if he certainly grasps the input (Flavell, 1979; Griffith & Ruan, 2005).

### ***Metacognition and Reading Comprehension***

Many scholars in the literature suggest that high level of metacognitive awareness is a significant predictor of accomplishment in reading comprehension (Flavell, 1979; Griffith & Ruan, 2005; Mokhtari & Reichard, 2002; Soto et al., 2019). The reason for this is that the monitoring, which means checking to understand whether the comprehension occurs successfully, has an indispensable role in successful reading comprehension; and metacognitive knowledge is necessary for both the monitoring and the wise use of the cognitive resources that are required to make critical decisions on the cognitive processes during the reading such as deciding when to stop or go on reading, which information from the text should be kept in mind and which information should be ignored, when to read at a fast or slow pace (Griffith & Ruan, 2005).

Also, the strategy is a significant element for reading comprehension as well as the aforementioned metacognitive monitoring (Flavell, 1979; Griffith & Ruan, 2005; Manalu & Wirza, 2021; Mokhtari & Reichard, 2002; Soto et al., 2019). Reading strategies are described by Gardner (1987) as “generally deliberate, planful activities undertaken by active learners, many times to remedy perceived cognitive failure” (as cited in Mokhtari & Reichard, 2002, p. 250), and thinking on how to use them effectively and on timing of their use based on the task during the reading process, in other words, employing metacognitive reading strategies, plays a key role in the metacognitive monitoring to support reading comprehension (Flavell, 1979; Griffith & Ruan, 2005; Mokhtari & Reichard, 2002; Soto et al., 2019). Besides, it is stated by

Mokhtari and Reichard (2002) that successful comprehension requires readers to go beyond decoding the text and to assume a strategic stance towards the meaning-making process. Likewise, Griffith and Ruan (2005) claim that successful readers employ the metacognitive reading strategies more than less successful ones. Moreover, it has been stated that these strategies lend themselves to reading activities in the literacy lessons (Flavell, 1979; Mokhtari & Reichard, 2002), and the teachers should incorporate these metacognitive strategies into their reading instruction (Al Seyabi & Tuzlukova, 2015; Griffith & Ruan, 2005; Mokhtari & Reichard, 2002).

All this leads to a large number of studies on metacognition in reading that focus on the investigation of the use of the metacognitive reading strategies in various reading instruction contexts (Babayigit, 2019; Dabarera et al., 2014; Zhang, 2010; Lin, 2018; Manalu & Wirza, 2021; Monika & V, 2022; Soto et al., 2019). The details of these studies are given in the following section.

### ***Related Studies on Metacognitive Reading Strategies***

By taking the research drive from the fact that awareness of the metacognitive impact on the reading process - which means being conscious of what kind of abilities, knowledge, and strategies a particular reading task demands from one's cognitive reserve and, at the same time, when and by what means they should be recalled from the cognitive reserve - promotes reading comprehension (Babayigit, 2019; Griffith & Ruan, 2005; Mokhtari & Reichard, 2002; Soto et al., 2019), a wide array of research has been conducted to identify how often the metacognitive reading strategies are employed by the EFL students from different levels of education (Al Seyabi & Tuzlukova, 2015; Babayigit, 2019; Zhang, 2010; Manalu & Wirza, 2021), to explore the effect of metacognitive strategy training within different language teaching approaches on the language proficiency skills in various ESL or EFL contexts (Dabarera et al., 2014; Monika & V, 2022), to gain a better understanding of the determinants of the metacognitive reading strategy use by different EFL/ESL settings (Lin, 2018), and to examine

the relationship between the metacognitive abilities and the different reading comprehension levels (Soto et al., 2019).

Al Seyabi and Tuzlukova (2015) investigated how frequently the junior and senior high school students from three different provinces, and the students of pre-university program studying at three different universities again from the same three different provinces in Oman employ the reading strategies for English texts through survey method in which the reading strategies were categorized into three main sections - “global/meta-cognitive”, “problem-solving/cognitive” and “support strategies” – in a very similar way as Mokhtari and Reichard (2002) did in their “Metacognitive Awareness of Reading Strategies Inventory” development. The researchers (Al Seyabi & Tuzlukova, 2015) found that the university students were more aware of the reading strategies and that they employed the metacognitive strategies at high rates and more frequently than the high school students, which is a congruent finding with the claim put forward by Flavell (1979) and Griffith and Ruan (2005) that one’s metacognitive skill development increases as one grows mature. Besides, the results of the study (Al Seyabi & Tuzlukova, 2015) showed that the most frequently employed strategies were related to coping with unknown vocabulary for both groups of students from the different levels of education and that making predictions on the subject matter of the text before reading the text was among the most frequently employed metacognitive reading strategies for both groups, yet with a higher rate in the group of the university students. The strategy with least frequency employment in each group was evaluating the text critically to determine the significant parts in the text, which is an unfavorable finding concerning the employment of metacognitive reading strategies. With the same method, Babayigit (2019) analyzed the application frequency of the metacognitive reading strategies for the texts in L1 by sixth graders in Turkish context. The researcher (Babayigit; 2019) utilized a survey in which metacognitive strategies were categorized in a similar way to Baker and Brown’s (1984) categorization which is divided into planning, monitoring, and evaluation sections. The results of the study (Babayigit; 2019) indicated that the sixth graders were able to apply the metacognitive reading strategies from

all categories with high frequency in general and this result is contrary to what Al Seyabi and Tuzlukova (2015) found and the claims made by Flavell (1979) and Griffith and Ruan (2005) because the sixth graders came out to be successful in applying the metacognitive reading strategies despite their early age. Also, the strategies with less application frequency by sixth graders were related to remembering the significant parts of the texts such as writing a synopsis of the text, noting down the significant information from the text, and transferring the information learned from the text to use in real life (Babayigit; 2019). Moreover, Zhang (2010), through semi-structured interviewing, examined Chinese EFL freshmen university students' application frequency of the metacognitive reading strategies, from Flavell's framing, during their English reading by taking the students' English proficiency levels into account. The proficiency levels of the students were determined by the College English Test (CET), which is a proficiency exam resembling the TOEFL and is administered by the Chinese universities when the students complete the first academic year. One of the important findings of the study (Zhang, 2010) was that the Chinese EFL students with high English proficiency level stated the application of the metacognitive reading strategies more frequently than the students with low proficiency level. In addition, another important finding was that the students having low English proficiency level reported heavy dependency on grammatical knowledge for parsing the sentences in a text when they are short of the metacognitive strategies (Zhang, 2010). Manalu and Wirza (2021) also conducted a study on the application frequency of the metacognitive reading strategies with a different research design, in which they examined the frequency of the metacognitive reading strategy use by only Indonesian junior EFL high school students with poor English language skills in three different text modes: visual, aural, and linguistic modes. They applied MARS (Mokhtari & Reichard, 2002) as survey by making some alterations on it for the different text modes. The frequency analysis showed that there was no significant variance among the application frequencies of the metacognitive reading strategies based on the modes and that the students self-reported high frequency of their metacognitive reading strategies, though this cannot suggest that they use the strategies with high frequency in practice (Manalu & Wirza, 2021).

With a nonequivalent control group design, the effect of teaching metacognitive reading strategies explicitly, through reciprocal teaching method, on the ESL reading comprehension skills of Singaporean first grader high school students was studied to determine whether the strategy teaching intervention would be effective to enhance the students' comprehension in reading English texts; therefore, a significant difference between the pre and post comprehension tests results of the treatment group was found, which provided evidence the effectiveness of teaching metacognitive reading strategies explicitly for better reading comprehension levels (Dabarera et al., 2014). A similar research focus was attended to by a meta-analysis research that investigated the efficacy of utilizing diverse multimodal contrivances and the strategies of metacognition within blended learning approach to EFL instruction, and the analysis of the recent ten years' related studies demonstrated the efficacy of them in the blended learning approach to boost the overall English proficiency of the EFL students (Monika & V, 2022). To illustrate, it was found that the metacognitive strategy utilization promotes the cognitive performances of the students such as information retention and concentration ability whereas the utilization of the multimodal contrivances, such as the Learning Management System (LMS) and combining different modes of meaning, helps the students become engaged with the learning process where the blended learning approach is adopted (Monika & V, 2022). The findings from these studies (Dabarera et al., 2014; Monika & V, 2022) confirm the ideas of the other researchers (Al Seyabi & Tuzlukova, 2015; Griffith & Ruan, 2005; Mokhtari & Reichard, 2002) who suggested the incorporation of the metacognitive strategies into the literacy instruction.

Moreover, another systematic review study was undertaken with the purpose of determining the agents affecting the way the university students employ the reading strategies in the various EFL and ESL settings, and four agents in total were determined, but two of them were the research focus: "English proficiency", and "L1 literacy experience" (Lin, 2018). Two findings related to metacognition emerged from the connection between English proficiency and the employment of the reading strategies. It was concluded that a positive connection



exists between the English language proficiency of EFL/ESL students and their employment of the metacognitive reading strategies – in other words, the students with English high proficiency employ the metacognitive reading strategies at higher levels than their counterparts with low English proficiency and the high proficient readers are more knowledgeable about metacognition than the low proficient readers (Lin, 2018). These findings support the claims by Mokhtari and Reichard (2002), and Griffith and Ruan (2005).

Furthermore, a two-phased research was conducted to reveal the relationship among the metacognitive abilities and the literal and the inferential levels of reading comprehension with Chilean secondary school students (Soto et al., 2019). By using a scale of metacognitive awareness for reading named as Escala de Conciencia Lectora (ESCOLA), in which metacognitive awareness for reading is measured in three different dimensions: planning, monitoring, and evaluation and also students report their metacognitive knowledge through answering the close-ended items, and an open-ended reading comprehension exam whose content was validated by an experienced researcher in the reading field, Eileen Kintsch and which includes items for both literal and the inferential levels of comprehension with the same numbers, the relationship between the students' awareness on the different metacognition dimension and their performance for the different reading comprehension levels was explored, and at the same time the relationship between the degrees to which students' correctly deciding whether they can comprehend the text, which is termed as meta-comprehension accuracy in the research, and their literal and inferential reading comprehension levels was analyzed through a multiple-choice reading comprehension test and the students' scoring of their as meta-comprehension accuracy (Soto et al., 2019). The findings showed that there is a strong positive relationship between the evaluation dimension of metacognitive awareness and the inferential comprehension levels and that a significant positive relationship of the meta-comprehension accuracy levels and the inferential comprehension levels, suggesting that inferential skills are required to have awareness of comprehension at deep level (Soto et al., 2019).

All in all, the studies reviewed show the positive effects of the multimodal approach and the semiotic approach in a separate manner. Despite their close relationship, the researchers who carried out studies on the multimodal approach either placed more emphasis on encouraging students' motivation and engagement in English reading class through using multiple modes than the semiotic meanings the modes hold, or they did not specify the signs they employed through multimodality during the research. Consequently, they did not bring into a balance between the multimodal approach and the semiotic approach in their studies. The present study, therefore, combined the two approaches and adopted a multimodal semiotic approach to reading instruction, which is defined by the researcher as using different modes coupled with signs at reasonable proportions to develop reading materials enabling students to analyze them with multiple means of communication by relating the linguistic mode to other modes such as visual, aural, spatial, or gestural modes and with some cultural awareness or referential links through signs so that the students can effectively extract and create meaning from the linguistic input, to explore its effect on reading comprehension in Turkish EFL context through post-test only with nonequivalent comparison groups design. The study also investigated the students' attitudes towards the multimodal semiotic approach. In addition, the link between the reading comprehension levels attained using the multimodal semiotic approach and the use of metacognitive reading strategies was examined to provide further evidence on that the successful readers use metacognitive reading strategies more frequently than the poor readers within a different reading instruction approach by considering the reviewed literature about it.

## **Chapter 3**

### **Methodology**

This chapter describes the details on the research design, which is a post-test only with nonequivalent comparison groups design, used to provide empirical findings to answer the research questions, along with the details on how participants were selected, how data were collected, which instruments were used, and how the data analysis was performed.

#### **Type of Research**

Entirely, quantitative type of research was utilized to carry out this research. Researchers (Allen et al., 2008; Creswell & Creswell, 2018; Kumar, 2010) describe quantitative research as a structured approach to the research components (which means research aims, strategy, questions, sampling, data collection tools, and how to analyze data are preset), and with the underlying postpositivist philosophy, it intends to inquire into the relationship between specific variables that the researcher seeks after through statistical procedures, to find out about the abstract constructs such as attitudes, opinions, etc. by quantifying them, and to generalize the findings from a sample to a related broader population. Based on this description, quantitative research was considered the best research type to achieve the research aims because the researcher, by formulating the aforementioned hypotheses, adopted a postpositivist stance and by predetermining everything related to the research procedures, set out to investigate the relationships between particular variables such as the students' comprehension levels and MSA, the comprehension levels of the students who were exposed to MSA and their metacognitive awareness of reading strategies as well as the attitudes towards MSA.

Experimental and survey designs both were chosen from the quantitative methods to serve the different research purposes in the different phases of the research. Basically, experimental design is studying the causal relationship between two or more variables when at least one of them is manipulated by a treatment (Creswell & Creswell, 2018; Kumar 2010). However, there is a wide array of experimental designs depending on the procedures they

involve (Kumar 2010). Of these designs, post-test only with nonequivalent comparison groups design was employed in the first phase of this research to investigate the effect of MSA on the students' reading comprehension levels. The characteristics of this design are explained by Price et al. (2017):

In this design, participants in one group are exposed to a treatment, a nonequivalent group is not exposed to the treatment, and then the two groups are compared. Imagine, for example, a researcher who wants to evaluate a new method of teaching fractions to third graders. One way would be to conduct a study with a treatment group consisting of one class of third-grade students and a control group consisting of another class of third-grade students. This design would be a nonequivalent groups design because the students are not randomly assigned to classes by the researcher, which means there could be important differences between them. (p. 202)

In the similar way that the example given in the quotation above illustrates, this research used a new approach of teaching -which was MSA (*Multimodal Semiotic Approach*)- as the intervention (independent variable) in the experiment, and two classes of EFL university students to assign one of them as the experimental group (treatment group) and to assign the other as the control group. After the intervention was implemented, the reading comprehension levels of the students in both groups (dependent variable) were compared to determine the effect of MSA. Also, the students were not randomly assigned to the groups because the classes had already been formed by the university and the researcher did not use a technique, such as using a computer program, to randomly assign the students to the groups. Thus, the classes were left unchanged and nonequivalent. Besides, this experimental design is a type of quasi-experimental design due to the lack of random assignment (Creswell & Creswell, 2018; Price et al., 2017). Since it was hard to reach the students and it was not possible to arrange a convenient meeting place at a suitable time for all the students after placing them randomly into the groups to conduct the experiment, it was decided not to use random assignment. As a matter of fact, this is an appropriate decision according to the statement:

“Quasi-experiments are most likely to be conducted in field settings in which random assignment is difficult or impossible. They are often conducted to evaluate the effectiveness of a treatment—perhaps a type of psychotherapy or an educational intervention.” (Price et al., 2017, p. 195).

The treatment of this experiment was employing MSA, and this was put into practice with a multiple-choice reading comprehension test which provides both multimodal and semiotic elements for the students by means of reading passages on a multimodality-rich website. While the experimental group was given this test, the control group was given the same reading comprehension test but without the website, which has multiple modes and semiotic elements. In other words, the control group was exposed to only the linguistic mode with the reading passages as in the traditional approach. Table 2 below shows the differences between the reading comprehension test constructed with MSA and the reading comprehension test constructed with the monomodal traditional approach.

**Table 2**

*Differences Between the Test Constructed with MSA and the Test with Traditional Approach*

<b>Modes and Signs</b>	<b>Test Constructed with MSA</b>	<b>Test Constructed with Traditional Approach</b>
Linguistic Mode	Successive reading paragraphs forming the whole historical story of Ellis Island were provided with cohesive and coherent sentences in the target language.	Successive reading paragraphs forming the whole historical story of Ellis Island were provided with cohesive and coherent sentences in the target language.
Visual Mode	As the photographs and the videos include the real images of the people and the scenes from the story, they resemble the referents and so they can be evaluated as iconic signs as well. These elements help the students to understand the reading paragraphs by depicting and exemplifying what is told in the linguistic mode. Also, the black and white color choice in the photographs and the videos suggests how much the story dates back to old times.	-

Aural Mode	The audio recordings accompanying the reading paragraphs include the interviews and the narratives of the people about what they experienced during the incidents of the story. The sad or cheerful sounds of the interviewees and the narrators, and the background sounds give the students clues to understand the incidents and the settings told in the linguistic mode.	-
Gestural Mode	As the facial expressions, motions, behaviors, and postures of the people shown in the photographs and the videos portray what is told in the linguistic mode, they help the students comprehend the reading paragraphs.	-
Spatial Mode	The map provided along with the reading paragraphs helps the students understand the architectonic meanings, such as the structure of the 'red brick building', included in the linguistic mode.	-
Symbols	Symbols such as pictures of 'statue of liberty' signifying New York City, where the story takes place, and 'lady justice' signifying the legislation, where it is placed along the reading paragraph titled 'The Legal Inspection', help the students understand what is told in the linguistic mode.	-
Icons	There are many icons accompanying the reading paragraphs and they depict the meaning of some vocabulary used in the reading paragraphs. For example, an icon denoting a person moving forward with a suitcase depict the word 'immigrants'.	-
Indexes	There are markers on the map which signify where the incidents of the story take place.	-

As the name of the design employed in the research suggests, only one application was performed for each group with the reading comprehension test, namely post-test only. A pretest could have been added to the design so that confounding variables such as the participants in the experimental group who have substantially higher reading comprehension levels on average than the participants in the control group would have been eliminated to some degree. Nonetheless, it was not added due to the fact that the permission to use a parallel test to the post-test whose validity and reliability already established could not be obtained from the test owner and developing such a test would take too much time. Instead, some other steps as Price et al. (2017) suggest were taken in order to avoid confounding variables. For example, two classes in the same year and at the same university were recruited as the research groups, the same instructions were given to the participants for them to complete the post-test, they were administered the post-test in the same environment, and all the participants' background information related to their academic success and English language proficiency was collected before the intervention to see if they are homogeneous. In addition, the post-test was created in Google Forms. Therefore, it was online, and the possibility of unreliability that could stem from printing was ruled out.

Before the experiment was carried out, a pilot study was done with the students from the same department at the same university, who would not be involved in the experiment, to establish the validity and the reliability of the reading comprehension test to be employed as the post-test because the items of the post-test were constructed by the researcher (see the Pilot Study Report on the Reading Comprehension Test Construction). Reading paragraphs on a website were selected for they were accounted appropriate to the participants' language levels, interests, ages, and especially for they lend themselves to the multimodal and semiotic approach. According to the results of the pilot study, the items to be included in the post-test were determined.

The post-test was administered to the participants via Google Forms. The participants were freshman students who were taking Reading Skills I course. Two freshman classes were

randomly designated as the control and the experimental groups. The instructor who was responsible for Reading Skills I course was contacted for the administration of the post-test by the researcher. Before the administration of the post-test, the link of the post-test was shared with the WhatsApp groups of the participants. In the experimental group, the link of a virtual tour related to the topic of the reading paragraphs was shared first. After the participants took the virtual tour, the link of the post-test, which includes the instructions and the paragraph questions, was shared with them. At the same time, the reading paragraphs were reflected on the board, and the link of the reading paragraphs was also shared with the participants. Thus, by reading the paragraphs on their smart phones, the participants could read the paragraphs at their own pace within the time limit stated in the test and benefited from the multimodal and the semiotic elements presented along with the paragraphs on the website in line with their needs. When they completed the post-test, their answers were recorded in Google Forms for analysis. On the other hand, nothing was reflected on the board for the control group. Only the reading paragraphs with questions and the instructions were shared with the control group. Their answers were recorded in Google Forms as well for the same reason.

The quantitative data, namely the post-test results of the control group and the experimental group, collected through Google Forms were contrasted to examine the difference between the reading comprehension levels of the two groups. In this way, the first phase of the research was fulfilled. After the experiment, the survey link was shared with only the experimental group so that the second phase of the research was commenced to learn about the participants' attitudes towards MSA and their metacognitive awareness of reading strategies.

As Mackey et al. (2012) state, using survey design in language education research can give information about language learners' tendency to exhibit certain language behaviors; thoughts and attitudes, feelings and beliefs, and awareness on certain issues concerning language or language learning process as well as their language background. Further justification for choosing survey design in the second phase of the study was provided based



on one of its definitions. Creswell and Creswell (2018) provide a definition for survey design as follows:

A survey design provides a quantitative description of trends, attitudes, and opinions of a population, or tests for associations among variables of a population, by studying a sample of that population. Survey designs help researchers answer three types of questions:

(a) descriptive questions (e.g., What percentage of practicing nurses support the provision of hospital abortion services?);

(b) questions about the relationships between variables (e.g., Is there a positive association between endorsement of hospital abortion services and support for implementing hospice care among nurses?); or in cases where a survey design is repeated over time in a longitudinal study;

(c) questions about predictive relationships between variables over time (e.g., Does Time 1 endorsement of support for hospital abortion services predict greater Time 2 burnout in nurses?). (p. 207)

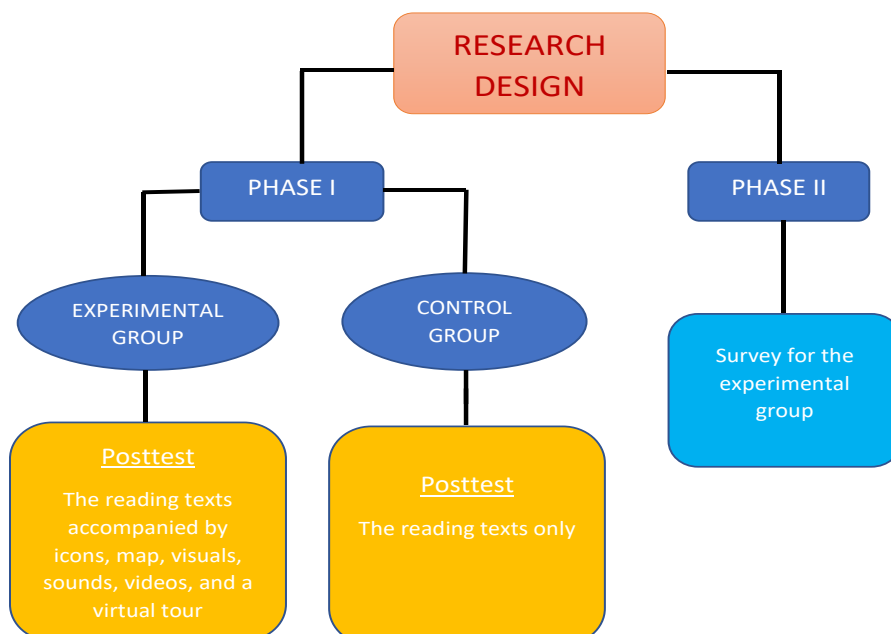
This research has two questions that are of question types (a): *RQ2 (What are the students' attitudes towards MSA for reading comprehension in the target language?)* and *RQ4 (What are the metacognitive awareness of reading strategies levels of the students exposed to MSA?)* perfectly match up with the question type (a) in that these questions intend to obtain a quantitative description of the attitudes and the metacognitive awareness about the reading strategies of a population, who are the students exposed to MSA in this research; *RQ3 (What is the relationship between the students' attitudes towards MSA and their reading comprehension levels through MSA?)* and *RQ5 (What is the relationship between the students' metacognitive awareness of reading strategies and their reading comprehension levels through MSA?)* are from the question type (b) as they engage in the relationship between two variables.

To answer these questions, a survey which has two sections designed respectively for the aforementioned research questions was conducted to the participants through Google Forms. The first section is intended to ascertain the participants' attitudes towards MSA, and the items in this section was adapted from Ajayi's (2010) survey. The second section was spared to find out about the participants' metacognitive awareness of reading strategies. Metacognitive Awareness of Reading Strategies Inventory (MARS) created by Mokhtari and Reichard's (2002) was directly embedded in the section without any adaptations. The permission had been received from the authors to use the items and the inventory before the research was carried out. The whole survey is comprised of Likert type items. As a result of the participants' responding to the survey, quantitative data was gathered in Google Forms for the two sections separately from each respondent. The scores obtained from the two sections were analyzed to examine the links between the attitudes and the reading comprehension levels through MSA and between the metacognitive awareness of reading strategies of the participants and their reading comprehension levels through MSA.

The following diagram shows the research design adopted in this research for better understanding:

**Figure 7**

Diagram of the Research Design Adopted in the Present Research



## **Pilot Study Report on the Reading Comprehension Test Construction**

### ***Introduction***

The assessment of reading comprehension is an essential part of reading instruction to find out at what level the students achieve reading comprehension, to provide the students with feedback on their performance and on the areas that needs improvement, and to evaluate if the reading instruction yields the desired outcomes determined by the reading curriculum so that the reading instruction and the curriculum can be refined (Çetinkaya Özdemir & Akyol, 2019; Hamm & Pearson, P. David, 2005; Kökçü & Demirel, 2020; Pang et al., 2003; RAND, 2002). For these objectives to be appropriately realized, the tools used in the process of reading comprehension assessment must meet some criteria such as reliability and validity (Brown, 2004; Çetinkaya Özdemir & Akyol; Heaton et al., 1990; Kökçü & Demirel, 2020; RAND, 2002). Validity of an assessment tool denotes whether it performs measurement on the skill, the behavior or the construct that it intends to measure; however, meeting the reliability criterion is a prerequisite for an assessment tool to carry out valid measurements, and reliability refers to the degree to which it provides consistent and stable measurement results (Brown, 2004; Heaton et al., 1990).

The existing literature does not possess valid and reliable reading comprehension tests that are designed for EFL university students and are also appropriate for the use of multimodality and semiotic elements. Although there are many such tests designed for commerce such as TOEFL and IELTS and for national foreign language examination such as YDS, these tests cannot be used by others due to the copyright issues. Therefore, by drawing upon the principles of reading comprehension assessment in the literature, this study attempts to establish validity and reliability of an English reading comprehension test which is planned to be used in EFL university context for a master's degree study the focus of which is the effect of the multimodal semiotic approach on the reading comprehension. To this end, a table of test specifications was prepared, and judgements of two experts was consulted to ensure the content validity; for ensuring both the validity and the reliability of the test, the indices of item

difficulty and item discrimination were calculated; and KR-20 (Kuder-Richardson-20) was also used from the internal consistency procedures to determine both reliability and validity of the test.

### ***Purpose Of the Pilot Study***

The purpose of this study is to develop a multiple-choice EFL reading comprehension test that can validly and reliably at an acceptable level measure English reading comprehension levels of Turkish university students whose English level is B2 according to the Common European Framework of Reference for Languages (CEFR) and that can be used with the multimodal semiotic approach, namely that can include multiple modes of communication such as visuals, sounds, and writing together; and semiotic elements such as symbols, icons, and indexes.

### ***Methodology***

**Research Design.** This pilot study was designed to establish the validity and reliability of the multiple-choice reading comprehension test intended to be used to a master's degree study investigating the effect of the multimodal semiotic approach on the reading comprehension levels of EFL university students. With this aim, the literature on the construction of reading comprehension tests and on item analysis was reviewed (Brown, 2004; Çetinkaya Özdemir & Akyol; Heaton et al., 1990; Kökçü & Demirel, 2020; RAND, 2002; University of Washington, n.d.). By considering the reviewed literature, the design of this pilot study was determined. Firstly, the reading paragraphs to be used in the test were chosen. Secondly, the learning objectives to be tested in the test were determined. Thirdly, a table of specifications outlining how many items are intended to measure which objectives was created. Finally, the multiple-choice items were written to create an item pool. For the item writing stage, it was decided to follow the steps to developing multiple-choice English language test items suggested by Brown (2004) because of their practicality.

**Participants.** The participants of the study were from the same year and the same university where the master's degree study is going to be conducted by using the reading comprehension test after its validity and reliability are established with this pilot study. In other words, one of the first-year section of the English language teaching (ELT) department at a prominent public university in Ankara was chosen to undertake this pilot study. Of course, the section chosen for this pilot study was removed from the possible sections to be used in the master's degree study. There were 32 students in the section totally. The section was comprised of 22 female and 10 male first-year ELT students. There were 24 students aged between 18 - 20 and 8 students aged between 20 – 22. The students' English language level was at least B2 according to the CEFR, which can be figured out from their results of the English language proficiency exam made by the school of foreign languages at the university before they started to take courses from the ELT department. Half of the students' grade point averages (GPA) varied between 3.50 and 3.75. 9 students' averages were between 3.25 and 3.50. 4 students' averages were between 3.00 and 3.25, and 3 students' averages were between 3.75 and 4.00 out of 4.00. The GPA points of the students were used as a criterion to determine the upper and lower groups for the item analysis.

**Selection Of the Reading Paragraphs.** The reading paragraphs were selected from a website which includes multimodality and semiotic elements because of the topic of the study for which the reading comprehension test was intended to be developed. Apart from being suitable for the multimodal semiotic approach, other criteria that were taken into consideration for the selection of the paragraphs were the English level used in the paragraphs, the length and authenticity of the paragraphs, and the suitability of the content of the paragraphs to the age and the interest of the students. In addition, the judgements of two experts in the field of ELT, one of whom is a professor and the other of whom is a PhD holder, were consulted on the suitability of the paragraphs to be used in the reading comprehension test. Thus, the cohesive and coherent reading paragraphs each of which accompanies the different stops of the island' virtual tour and gives information about the historical importance of Ellis Island

located in New York State of USA were selected to write the items of the reading comprehension test.

**Determining the Objectives to Be Tested.** With this reading comprehension test, the higher levels of reading comprehension in comparison to the literal comprehension were aimed to test, and the levels determined by ABİDE (Akademik Becerilerin İzlenmesi ve Değerlendirilmesi, 2017) with the purpose of measuring reading comprehension skills according to the advancements in the reading field and the measurement standards set by the international assessment programs such as PISA and PIRLS were taken into account for the determination of the objectives of the test. Because the multiple-choice item type has the highest level of validity and reliability among all the item types and it has a practical way of scoring, which makes it appropriate to be used in standardized tests designed for a great number of test takers (Brown, 2004; Heaton et al., 1990), only the multiple-choice item type with five options in which the correct answer is given in one of them was decided to be included in the test. However, as the multiple-choice item type poses limitation to measuring the ability to comprehend at the evaluating level, the items were written to measure the comprehension ability at merely two different levels: the understanding and the interpreting-inferring levels. Hence, the objectives to be tested were determined according to these levels, and the sample objectives which are written for these levels in the report of ABİDE (2017) were examined to write the specific objectives of the test. While the specific objectives were being determined, the content of the paragraphs were examined to decide what kind of objectives the paragraphs lend themselves to. Also, it was decided that twenty (20) items and forty-five (45) minutes in total would be enough and appropriate for the test not to last too short or too long. As a result, by considering the content of the paragraphs and the time constraint, it was decided to give weight to paraphrasing from the understanding level and to making reasonable inferences from the interpreting-inferring level for the objectives, and nine (9) specific objectives in total were determined to be tested. Moreover, it was intended to make the spread of items from both levels of reading comprehension balanced. Therefore, Four (4) of the objectives were written

according to the understanding level, and five (5) of the objectives were written according to the interpreting-inferring level. Because the weight was given to paraphrasing and making inferences, most of the items were planned to be written for these relevant objectives, yet it was designed for the test to include at least one item for each specific objective.

Consequently, the specific objectives determined for the reading comprehension to test are shown in the following table:

**Table 3**

*Specific Objectives Determined for the Reading Comprehension Test*

Reading Comprehension Levels	Objectives
Understanding Level	<p>Students will be able to choose the option that:</p> <ul style="list-style-type: none"> <li>- paraphrases the information included in the paragraphs appropriately.</li> <li>- explains the meaning of the word or the word groups included in the paragraphs correctly.</li> <li>- contrasts the information in the paragraphs correctly.</li> <li>- associates the information given explicitly in the paragraphs in terms of cause and effect correctly.</li> </ul>
Interpreting-Inferring Level	<p>Students will be able to choose the option that:</p> <ul style="list-style-type: none"> <li>- makes reasonable inferences from the information in the paragraphs.</li> <li>- judges whether the given statements about the content of the paragraphs are true or false according to the paragraphs.</li> <li>- identifies the main point of the paragraphs.</li> <li>- associates the information given implicitly in the paragraphs in terms of cause and effect.</li> <li>- draws conclusions about the author's intentions from the information in the paragraphs.</li> </ul>

**Table of Specifications.** The following table was drawn up to specify how many items were intended to be used to measure the specific objectives and how many points were assigned for the items.

**Table 4**

*Table of the Test Specifications*

Reading Comprehension Level	Objectives	Number of Test Items	Point
Understanding Level	Students will be able to choose the option that: - paraphrases the information included in the paragraphs appropriately.	4	5
	- explains the meaning of the word or the word groups included in the paragraphs correctly.	3	5
	- contrasts the information in the paragraphs correctly.	1	5
	- associates the information given explicitly in the paragraphs in terms of cause and effect correctly.	2	5
Interpreting-Infering Level	- makes reasonable inferences from the information in the paragraphs.	4	5
	- judges whether the given statements about the content of the paragraphs are true or false according to the paragraphs.	1	5
	- identifies the main point of the paragraphs.	2	5
	- associates the information given implicitly in the paragraphs in terms of cause and effect.	2	5
	- draws conclusions about the author's intentions from the information in the paragraphs.	1	5
Total		20	100

**Creating the Item Pool.** At this stage, the multiple-choice items were started to be written according to the practical guidelines for designing multiple-choice English language test items recommended by Brown (2004). Therefore, the first step was to write as many items as possible which can separately measure the objectives specified in the table of specifications. The number of test items allocated for each objective was also taken into consideration. For instance, as high numbers of items were allocated to the objectives of



paraphrasing and making inferences, more items were written for these objectives in comparison to other objectives in the item pool. During this stage, special attention was given to ensure that the distractors of the items are plausibly attractive and can distinguish between the students with higher level of comprehension skill and those with lower level of comprehension skill. Besides, the stems and the options were written in a way that is as succinct as possible in order not to make the items confusing. Moreover, effort was made to write options which are of nearly the same length for each item since test makers generally write the correct options with longer phrases or sentences than they do for the distractors. Another important step was to ensure that each item has only one correct option. After the items were written by considering these issues, the stems, the distractors, and the correct options of the items were reviewed by two experts in the field of ELT, and necessary modifications were made on the items in line with their judgements. As a result, thirty (30) items were developed in the item pool totally. In the next step, the reading comprehension test including these thirty (30) items was administered to the participants so that item analysis was conducted to choose twenty (20) valid and reliable items among the thirty (30) items. To demonstrate which items were written for which specific objectives, the item numbers and the objectives were matched as follows:

1. Paraphrases the information included in the paragraphs appropriately: 1, 4, 11, 24, 25, 27
2. Explains the meaning of the word or the word groups included in the paragraphs correctly: 3, 18, 21, 29
3. Contrasts the information in the paragraphs correctly: 7
4. Associates the information given explicitly in the paragraphs in terms of cause and effect correctly: 14, 15, 19
5. Makes reasonable inferences from the information in the paragraphs: 2, 5, 6, 9, 10, 13, 22, 26, 28, 30
6. Judges whether the given statements about the content of the paragraphs are true or false according to the paragraphs: 8
7. Identifies the main point of the paragraphs: 12, 17
8. Associates the information given implicitly in the paragraphs in terms of cause and effect: 16, 20
9. Draws conclusions about the author's intentions from the information in the paragraphs: 23

**Administration of the Reading Comprehension Test and the Item Analysis.** The reading comprehension test was administered by the researcher herself to 32 first-year Turkish students studying ELT at a Turkish public university. Before the test was administered to the students, the necessary permission was received by the lecturer of the Reading Skills course to administer the test within the session of the course. Also, the physical structure of the classroom was checked to increase reliability of the test. To illustrate, it was ensured that each test taker can see the projection screen clearly to answer the test items because the test was administered via Google Forms. Before the students started the test, the information about the English language skills of the students was collected with a different form, and the instructions were given by the researcher, and the link of the reading comprehension test was shared with the students so that they could follow the test items on their smartphones. While the instructions were being given, it was declared that the test would last sixty (60) minutes. The instructions were also written on the first page of the test. Besides, the reliability of scores was ensured as the scoring was made by Google Forms.

The form and the test results which were collected by Google Forms were examined to conduct the item analysis. The levels of difficulty and discrimination indices were calculated to determine the validity and the reliability of the test. GPA levels of the students were taken as basis to designate the upper and the lower groups for the item discrimination analysis to be conducted. Then, KR-20 formula was used to measure the internal consistency reliability of the test. The calculations were made in SPSS.

### ***Findings***

For all the items in the reading comprehension test, the difficulty and the discrimination indices were computed to decide which items should be excluded. Generally, an item within .30 and .70 difficulty index range and with at least .30 discrimination coefficient is accepted as fair in the literature. Besides, the minimum ideal level for the reliability is set at .20 value. These cut-off values were taken into consideration while the items were being evaluated to include

them in the test. The values obtained at the end of the item analysis were displayed in the table below.

**Table 5**

*Item Statistics of the Reading Comprehension Test*

Item Number	Difficulty Index	qj=1- pj	Variance	Standard Deviation	Discrimination Coefficient	Reliability
1.	.91	.09	.08	.29	.19	.05
2.	.71	.29	.20	.45	.43	.20
3.	.22	.78	.17	.41	.47	.19
4.	.62	.38	.23	.49	.63	.31
5.	.66	.34	.22	.47	.59	.28
6.	.27	.73	.19	.44	.51	.23
7.	.58	.42	.24	.49	.65	.32
8.	.69	.31	.21	.46	.44	.20
9.	.61	.39	.23	.49	.52	.25
10.	.97	.03	.02	.17	.20	.03
11.	.72	.28	.20	.45	.46	.21
12.	.67	.33	.22	.47	.58	.27
13.	.29	.71	.20	.45	.16	.07
14.	.21	.79	.16	.41	.57	.23
15.	.75	.25	.18	.43	.52	.23
16.	.72	.28	.20	.45	.44	.20
17.	.69	.31	.21	.46	.41	.19
18.	.62	.38	.23	.49	.53	.26
19.	.65	.35	.22	.48	.50	.24
20.	.53	.47	.24	.50	.43	.21
21.	.77	.23	.17	.42	.61	.26
22.	.69	.31	.21	.46	.55	.25
23.	.81	.19	.15	.39	.57	.22
24.	.55	.45	.24	.50	.39	.19
25.	.58	.42	.24	.49	.43	.21
26.	.86	.14	.12	.35	.36	.12
27.	.63	.37	.23	.48	.60	.29
28.	.95	.05	.04	.22	.12	.03
29.	.66	.34	.22	.47	.42	.20
30.	.89	.11	.09	.31	.10	.03

According to the Table 3, the difficulty levels of the items 1, 10, 26, 28, and 30 are relatively higher than .70 cut-off value. Their difficulty levels are .91, .97, .86, .95, and .89 respectively, which means that these items are too easy for students to answer. As the item difficulty level approaches 1, it becomes easier (Brown, 2004). Therefore, these items were excluded from the reading comprehension test. On the other hand, the difficulty levels of the

items 3, 6, 13, and 14 are relatively below 0.30 cut-off value, in other words, they have .71, .27, .29, .21 difficulty levels respectively, and this is construed that these items are too hard to be answered by the students. Hence, these items were also excluded from the test. The reason why too easy and too hard items were discarded from the test is these items cannot discriminate between the successful test takers and the less successful test takers (Brown, 2004; Heaton et al., 1990).

As for the item discrimination, the items whose discrimination coefficient level was found to be lower than .30 discrimination coefficient value were taken out from the test since items with low discrimination levels are not able to measure the students appropriately for the intended construct. The items 1, 10, 13, 28, and 30 came out to possess too low discrimination level. In turn, their discrimination levels can be indicated as .19, .20, .16, .12, and .10. Because these items are also problematic due to their difficulty levels, they had already been discarded from the test.

After determining the difficulty and the discrimination levels of the items, their reliability levels were also calculated by multiplication of their standard deviation and item discrimination levels. As a result of the calculation, the items 1, 3, 10, 13, 17, 24, 26, 28, 30 were detected to be below .20 reliability level. According to Table 3, their reliability levels can be successively stated as .05, .19, .03, .07, .19, .19, .12, .03, and .03. The items 1, 3, 6, 10, 13, 14, 24, 26, 28, 30 had been found to be unsatisfactory in terms of their difficulty levels, and the items 1, 10, 13, 28, and 30 had been also found to be unsatisfactory due to their low item discrimination levels. Because the items 1, 3, 6, 10, 13, 14, 24, 26, 28, 30 were determined to be unsatisfactory in terms of both their reliability and difficulty or discrimination levels, they were excluded from the reading comprehension test. Although the item 17 was determined to be below the cut-off level of reliability, it was decided to be included in the reading comprehension test since its reliability level (.19) is hardly lower than the cut-off level (.20) and it has satisfactory difficulty and discrimination levels.

Moreover, KR-20 formula was used to determine the internal reliability of the test after the above-mentioned items were discarded from the test. For the test to be accepted as reliable the KR-20 reliability coefficient should be at least .70 (Çetinkaya Özdemir & Akyol, 2019; Kökçü & Demirel, 2020). After the reliability analysis of the twenty (20) items, it was found out that the test has .73 KR-20 reliability coefficient (see Table 4). Thus, it can be confirmed that the test with the selected twenty (20) items is reliable in terms of internal consistency reliability.

**Table 6**

*Reliability Statistics*

KR-20	Mean	Mean	Variance	Std. Deviation	N of Items
.73	13.28	13,28	5,434	2,331	20

Consequently, a valid and reliable English reading comprehension test was developed. The latest version of the test included twenty (20) items whose numbers are 2, 4, 5, 7, 8, 9, 11, 12, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 27, 29 (see APPENDIX- C to examine the items).

***Discussion***

In this pilot study, an English reading comprehension test for Turkish university students which meets the validity and reliability standards of testing based on the relevant literature was intended to develop. Firstly, thirty (30) test items were written for the test. However, the number of the items was decreased after the item analysis as some of the items were found to be unreliable according to their difficulty, discrimination, and reliability levels. Ten (10) unreliable items were excluded from the test, and hence, twenty (20) items with fair levels of difficulty, discrimination, and reliability were maintained in the test. Afterwards, KR-20 reliability coefficient was calculated for the latest version of the reading comprehension test, in which there were twenty (20) items, to establish the internal consistency reliability of the test. The

KR-20 reliability coefficient of the test was identified as .73, which indicates that the test is homogeneous and reliable.

All in all, it is assumed that an English reading comprehension test which can measure the English reading comprehension levels of Turkish university students at reasonable validity and reliability levels was developed as a result of this pilot study and it can be used in the reading comprehension studies which aim to determine the English reading comprehension levels of university students. Furthermore, the reading comprehension studies which include multimodality or semiotic elements can also use the developed English reading comprehension test as the suitable reading paragraphs were chosen by considering them.

### **Setting and Participants**

At the outset of planning the present research, it had been designed that the research would be carried out from completely afar due to the ongoing Covid-19 quarantine. Hence, all the data collection methods had been determined according to their eligibility to be applied distantly as it had been supposed that the participants would be at home under quarantine. However, the quarantine was lifted, and normalization process was started in Turkey long after the data collection tools had been prepared and chosen. Under these circumstances, the place where the research was planned to be conducted — the participants' homes — was changed back to the classrooms as it should be normally, yet the data collection tools were not changed because it was considered that they were suitable for the nature of the research topic, which requires multimedia, and environmentally friendly by requiring no paper.

This research was therefore undertaken in an English language teaching (ELT) department of a major state university in Ankara, Turkey. The department admits 93 students each year, and approximately 75 average net number out of 80 questions in the English language test of university entrance exam is scored by the students getting into ELT department at the university (YÖK Lisans Atlası, 2021). After getting into the department, the students are administered an English proficiency exam, or the result of an international English language exam whose equivalence is acknowledged by the university is requested. TOEFL

IBT, Cambridge Advanced English (CAE), The Certificate of Proficiency in English (CPE), and Pearson Test of English Academic (PTE Academic) are set as the equivalent English language exams to the English proficiency exam of the university according to the university senate. The foreign language exams administered at the national level such as YDS are not accepted as equivalent because they only measure reading comprehension skill and the knowledge of grammar rules and vocabulary. The English proficiency exam administered by the university measures all of the four basic language skills with its writing, listening, grammar, reading and oral exam sections. The students must have at least B2 proficiency level according to the CEFR in order to study in the English language department. Nearly 90% of the students come from different cities of Turkey, and the female students slightly outnumber the male students in the department (YÖK Lisans Atlası, 2021).

In addition, the courses that are related to reading comprehension in the curriculum offered by the department were examined since the English reading comprehension is the focus of this research. In the first semester, there is a Reading Skills I compulsory course which aims to increase the sentential and the textual comprehension of the students by using authentic texts and teach the students the reading strategies to find main ideas in the texts. Also, Reading Skills II, a follow-up compulsory course to the Reading Skills I, is taken in the second semester, and among its objectives, there are teaching the students previewing strategy and training the students in the necessary skills to comprehend the texts at the discourse level. Besides, the Critical Reading and Writing course is required to be taken in the third semester, and its objectives are to enable the students to evaluate the texts from different sources with a critical point of view, to compare and contrast various texts on a specific topic, and to write their original texts by synthesizing the texts they have read previously.

As to the setting of this research, describing the status of English in Turkey was deemed to be essential for reading comprehension in English is under scrutiny in this research. For one thing, Turkey takes place in the Expanding Circle, where English is neither spoken as a native language nor as an official language; instead, it is spoken as a bridge language that enables

the speakers to communicate with other speakers of different native languages (Doğançay-Aktuna & Kızıltepe, 2005; Larsen-Freeman & Anderson, 2013). So, Turkey gives prominence to English language for its instrumental functions such as international communication, international trade, finding prestigious jobs, etc. and because of this, English attracts the most attention as a foreign language to be studied in Turkey, it is included in the curriculums of all levels of Turkish national education, though discrepancies in the teaching process occur based on the facilities that the educational institutions possess, and it is used medium of instruction at a considerable number of universities (Doğançay-Aktuna & Kızıltepe, 2005).

The target population of this research was determined as the first-year university students from the ELT departments in Turkey because the research topic is closely related to this field of study, English language teaching, one of the aims of which is to train its students in advanced English reading skills. Therefore, it was considered that ELT students could be more willing to participate in this research. In addition, especially the first-year university students were recruited for this study since they take courses to improve English reading skills. The sampling type used to recruit participants into this research can be called as convenience sampling, but to be more precise, it is a blend of convenience and purposive samplings because it also holds some characteristics of the purposive sampling as is the case explained by Dörnyei (2007). In other words, some of the selection criteria of the participants were convenience-based – for example, the suitability and the easiness of the participants' location, presence at a certain time interval, accessibility for the researcher, and their voluntariness to participate in the research – while others were the purpose-based ones, which can serve the purposes of the research according to the researcher's judgement, such as being a native speaker of Turkish, using English as a foreign language, and being a freshman student studying in English Language Teaching department at a Turkish University. This non-random sampling type was chosen on account of its economic resource requirements at the expense of its possible adverse effect on the validity of the research (Dörnyei, 2007). Furthermore, the participants were intentionally recruited from the same year –freshman year – to avoid

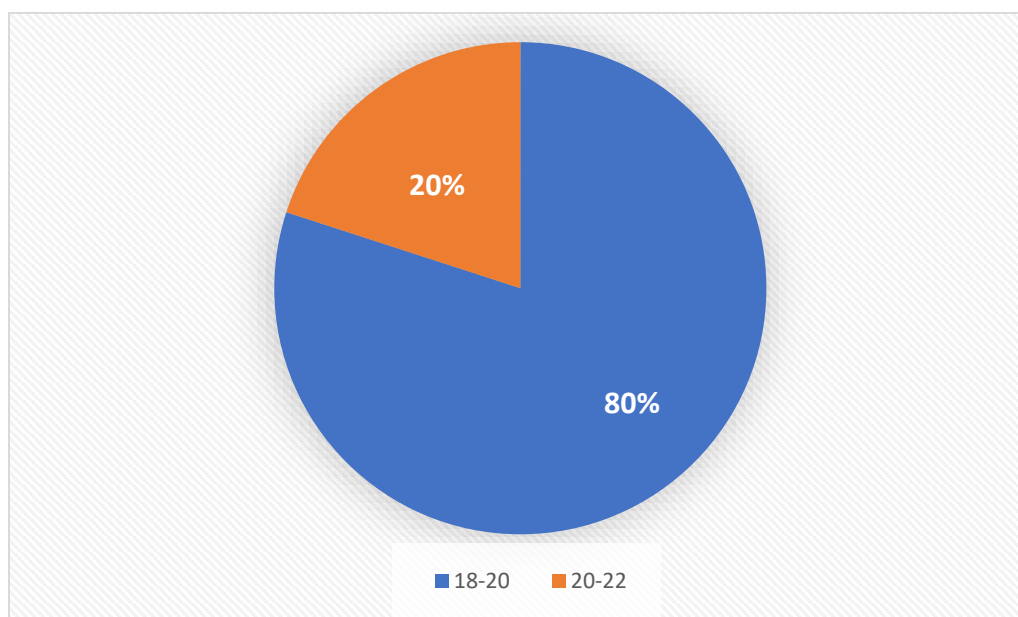


confounding variables, albeit not completely, to a certain degree as discussed before. Moreover, the date of the conducting the research was arranged for the first semester of the freshman year because the students were taking Reading Skills I course the aims of which are congruent with the areas the post-test intends to measure.

In total, 71 students from two different sections of freshmen from the English language teaching department at a state university in Ankara participated in the research. The section including 36 participants, 24 were female and 12 were male, was assigned as the experimental group, and the other section with 35 participants, 21 female and 14 were male, was assigned as the control group. All of the participants were aged between 18 and 22. The participants' English proficiency levels vary between B2 and C1 levels when their results of English proficiency exam having been held by the school of foreign languages at the university before they were accepted into the department are converted into CEFR levels with the help of ETS' (Educational Testing Services, 2022) score comparison. The distribution of all the participants' age, gender and English language proficiency level is shown in the following graphs:

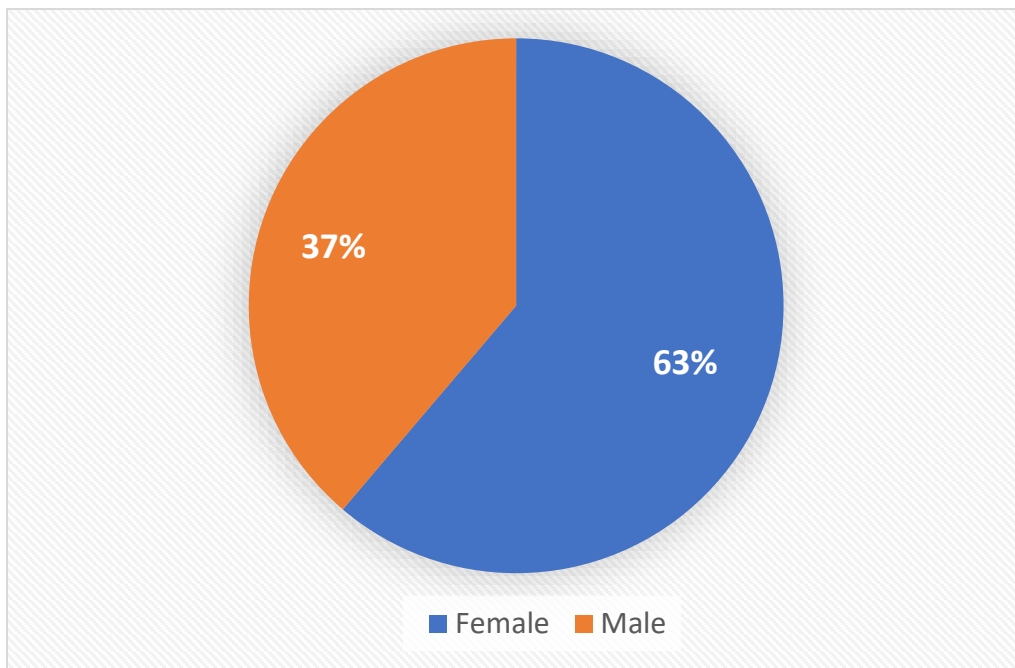
**Figure 8**

Distribution of the Participants' Age

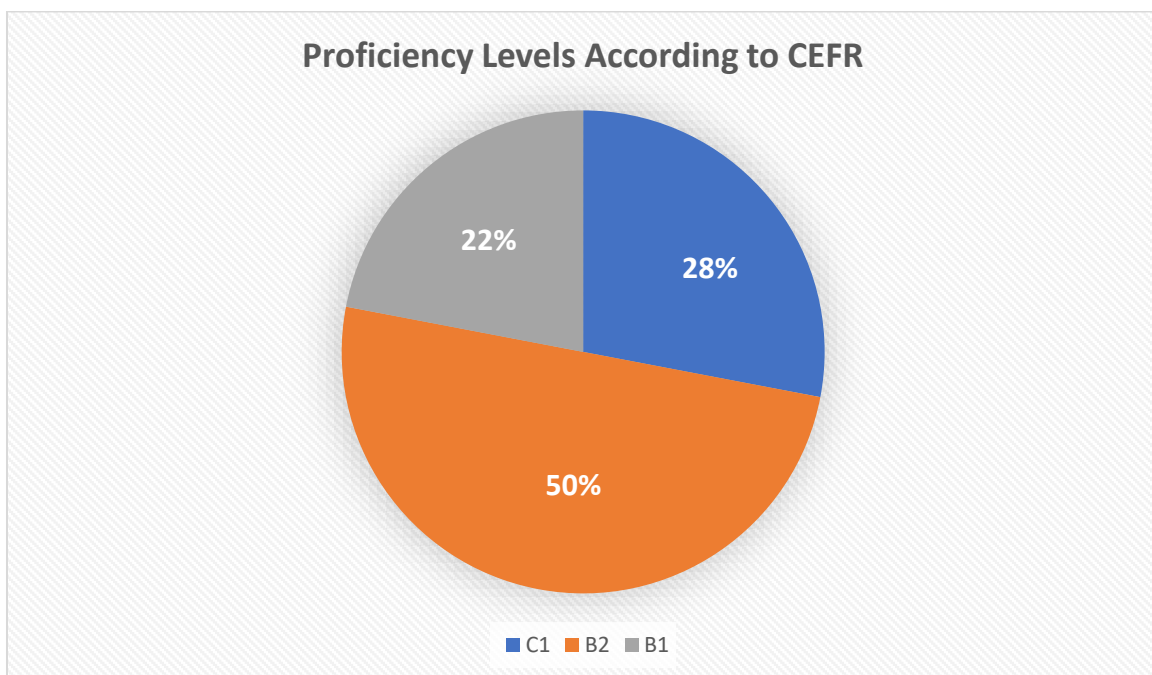


**Figure 9**

Distribution of the Participants' Gender

**Figure 10**

Distribution of the Participants' English Language Proficiency Level



## **Data Collection**

Firstly, the online post-test coupled with a virtual tour and the reading paragraphs that are rich in multimodality and signs was conducted to the experimental group, with data being gathered via Google Forms. In case the participants needed guidance on how to take the virtual tour, it was projected onto the board and showed how it is used by the researcher. Secondly, a survey was utilized to explore the participants' attitudes towards MSA and to examine the relationship between their metacognitive awareness of reading strategies and their reading comprehension levels they achieved when they were exposed to MSA. The survey was conducted to only the experimental group because all the attitudinal items and some items from the metacognitive awareness of reading strategies inventory are multimodality and semiotics oriented, and there could be participants in the control group who had never been exposed to MSA before. Thirdly, the same post-test without the virtual tour, multimodal and semiotic elements was conducted to the control group. The main purpose of the data collection using the post-test was to reveal the difference in the reading comprehension levels of the two groups. Besides, the first section of the post-test was constructed to obtain informed consent forms, personally identifiable information, demographic information, and information on English learning background from each participant. The informed consent forms both in Turkish, the native language of the participants, and in English alongside the questions which required the participants to provide personally identifiable information, demographic information, and information on English learning background were embedded in the first section. To illustrate, the questions such as their name, surname, grade, section, how long they studied English as a foreign language, and the English language proficiency score they had, etc. were asked to every participant.

## **Instruments**

All in all, three instruments were employed throughout the data collection process: a virtual tour, post-test, and a survey. These instruments are introduced respectively as follows:

**Table 7**

## Data Collection Instruments

<b>Research Questions</b>	<b>Data Collection Instrument</b>
<b>Question 1:</b> Do the students who are exposed to the <i>Multimodal Semiotic Approach</i> (MSA) outperform the students who remain text-bound on the reading comprehension test?	Virtual Tour and Post-test
<b>Question 2:</b> What are the students' attitudes towards the <i>Multimodal Semiotic Approach</i> (MSA) for reading comprehension in the target language?	Survey
<b>Question 3:</b> What are the metacognitive awareness levels of reading strategies of the students exposed to the MSA?	Survey
<b>Question 4:</b> What is the relationship between the students' attitudes towards MSA and their reading comprehension levels through MSA?	Survey and Post-test
<b>Question 5:</b> What is the relationship between the students' metacognitive awareness levels of reading strategies and their reading comprehension levels achieved through MSA?	Survey and Post-test

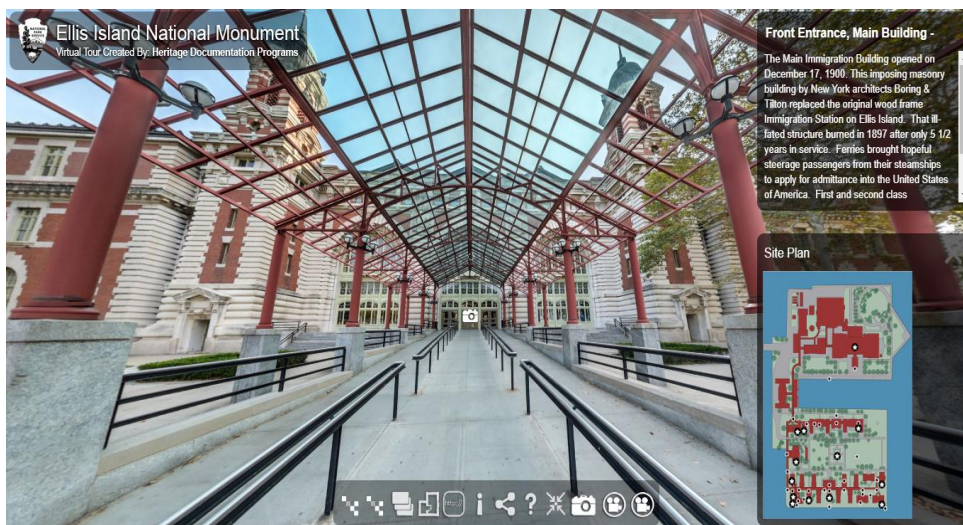
***Instrument 1: Virtual Tour***

A 360° rotating virtual tour named as Ellis Island National Monument (National Park Service, 2016) was the first instrument to be put into use just before the post-test. It enables users to navigate the historical venues of Ellis Island where the story of the reading paragraphs included in the post-test had taken place. The tour is comprised of high-quality, 360° rotatable photographs of the venues which give sense of reality, the historic pictures which were taken in immigration times, and the texts giving information regarding these venues accompany the photographs. Therefore, the spatial mode was integrated into the reading process besides linguistic and visual modes by introducing the participants to the virtual tour. For instance, one can sense the depth and the spacious of the Great Hall, one of the historical venues shown in the tour, while navigating it in the virtual tour, and this suggests the message that so many immigrants to crowd into the hall were coming to USA. Actually, this can be regarded as a warm-up or pre-reading activity as well because it holds the idiosyncrasies of engaging the participants' attention to the topic of the reading passages in the post-test and activating the

multiple modes in them before they took the post-test. Nearly 10 minutes were given to the participants to take the tour. Also, the participants were informed by the researcher that they did not have to navigate everywhere in the tour. It was enough for them to see the main venues where the story of the reading paragraphs had taken place. In the following screenshots, you can see some parts of the virtual tour's content:

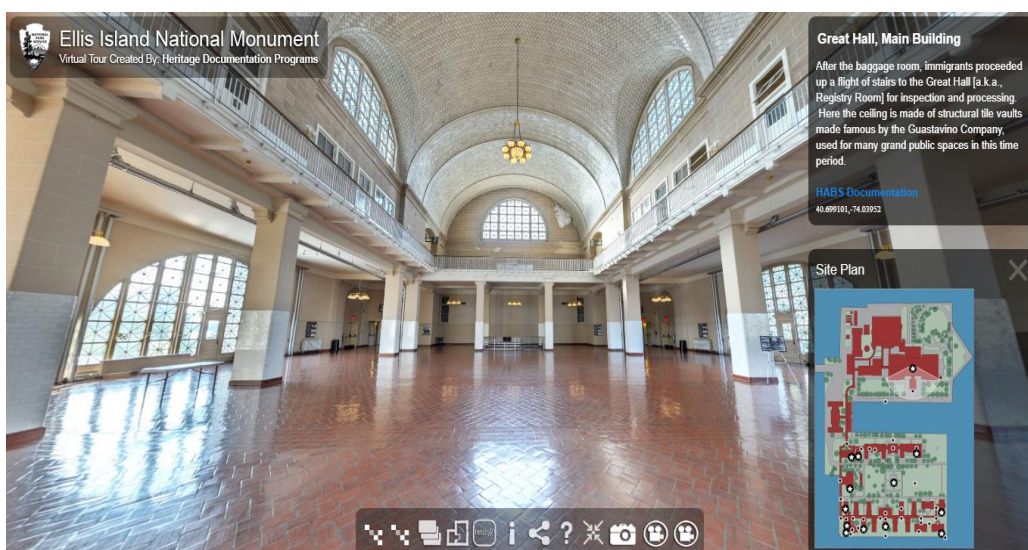
**Figure 11**

A Screenshot of the Front Entrance to Main Building from the Virtual Tour



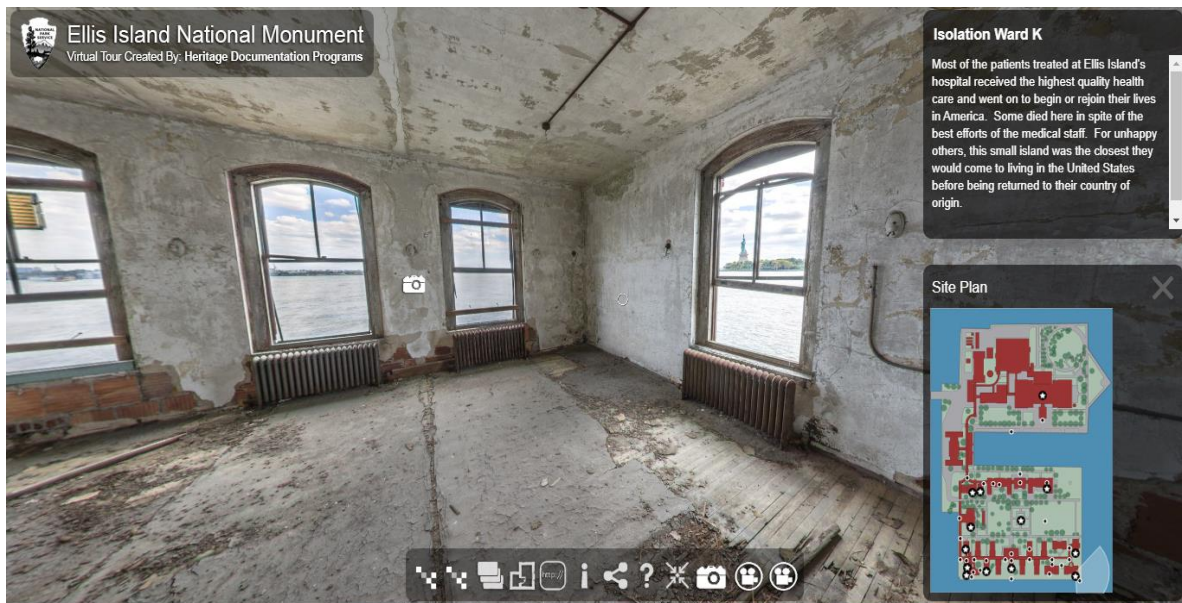
**Figure 12**

A Screenshot of the Great Hall from the Virtual Tour



**Figure 13**

*A Screenshot of the Isolation Ward from the Virtual Tour*



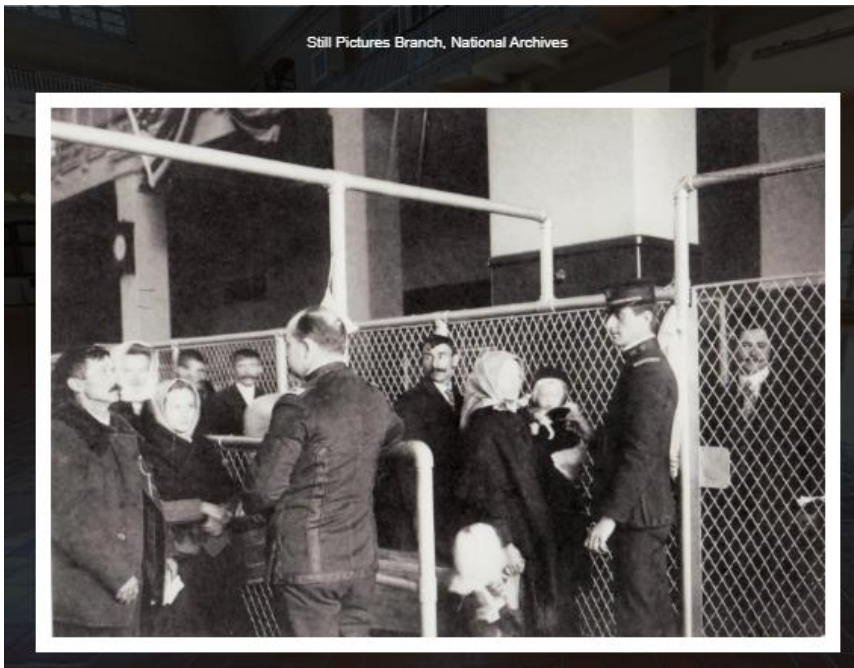
**Figure 14**

*A Historic Image of Medical Staff working at Ellis Island Hospital from the Virtual Tour*



**Figure 15**

*A Historic Image of Immigrants Lining Up for the Medical Inspection from the Virtual Tour*

***Instrument 2: Post-test***

A post-test was constructed to ascertain the reading comprehension levels of the participants in both groups. Indeed, it could be named as a reading comprehension test, too. However, it is referred as the post-test throughout this paper as the chosen research design suggests. The test results of the participants, namely the scores they obtained, indicated their reading comprehension levels, and it was aimed to investigate the difference between the experimental group and the control group in terms of the reading comprehension level.

The construction process of the test started with the selection of the reading material bearing in mind that the material to be selected should lend itself well to MSA. Naturally, the ages, the language proficiency levels, the areas of interest, and the needs of the participants were also taken into consideration in selecting the reading material. Accordingly, the successive reading paragraphs, as a whole, comprising the historical story of Ellis Island, which is located within the State of New York in the USA and was the busiest immigration

station in the USA between the years of 1892 and 1954 (History, 2009), were selected for those reasons: Firstly, the paragraphs are in B2 level, so they are suitable to the participants' proficiency levels varying between B2 and C1. Secondly, they are embedded into a website, which has multimodal and semiotic elements related to the content of the paragraphs such as icons, authentic photographs, videos, and audios. In other words, they are convenient to employ MSA. Thirdly, the topic of the paragraphs reflects American history, which could be within the participants' area of interest as the USA is one of the countries where English language, which the participants are studying, is widely used as the native language. Finally, the topic of the paragraphs is abstract in nature as it deals with history, and it is considered appropriate to the ages of the participants, who are young adults and have already moved into the formal operational stage according to Jean Piaget's theory of cognitive development.

The next step in the process of the test construction was to determine the objectives of the test. In an attempt to do this, which levels of reading comprehension the objectives would be based on was determined first. It was decided that using the two levels taken from ABİDE's (Akademik Becerilerin İzlenmesi ve Değerlendirilmesi) report (2017) would best serve the major aim of this test, which is measuring reading comprehension level. Actually, ABİDE (2017) adopted a four-level construct in measuring reading comprehension skills and those are recalling - retrieving information, understanding, interpreting-making deductions, and evaluating levels respectively. However, it was considered that the items measuring at the recalling - retrieving information level would be too easy for the participants when their language proficiency levels were regarded and the items measuring at the evaluating level do not lend themselves to multiple-choice test. For these reasons, only the two levels, the understanding and the interpreting-making deduction levels, were chosen to base the test objectives on them. Then, appropriate test objectives were determined, and a table of specifications was prepared to write items for each objective in a balanced way.

Next, the literature regarding language assessment, especially the testing reading comprehension with multiple-choice items, was reviewed to write effective test items (Heaton,



1990; Brown 2004; Yurdakal & Kırmızı, 2018; Özdemir & Akyol; 2019; Kökçü & Demirel; 2020). Following the guidelines for the test preparation, an item pool was created. The items were also examined by a colleague and an expert from an ELT department. Besides, the items were piloted with a class which was not going to participate in the actual research from the ELT department where the research was going to be conducted. Upon completing the test, the students were requested to write their opinions on the intelligibility of the items and the time limit determined for the completion of the test. Their feedback for improvements of the items were taken into consideration while revising the items for the final draft of the test. Finally, item analyses were conducted on the data obtained with a pilot study to establish reliability and validity of the test, and twenty (20) items, which would be included in the actual test, were selected from the item pool according to the indices of the items obtained as a result of the analyses.

Furthermore, two different versions of the post-test were employed in the experimental phase of this research. The difference stems only from the way of presentation of the post-test to the research groups. Whereas the same reading paragraphs and items were included in the post-test administered to both research groups, the multimodal and semiotic components of the reading paragraphs on the website were not added in the post-test administered to the control group, so they had to solve the reading comprehension questions by adhering only to the texts given in the post-test.

In addition, more time (60 minutes) was given for the experimental group to complete the post-test than the control group (40 minutes) since the experimental group would need extra time to benefit from the multimodal and semiotic components such as examining the photos and icons, watching the videos, and listening to the historical events during the immigration process from the audios of the people who experienced them.

The following screenshots were placed below to illustrate some of the multimodal and semiotic elements provided along with the reading paragraphs.

Figure 16

*Photos as Examples of Multimodal Elements Provided Alongside the Reading Paragraphs*

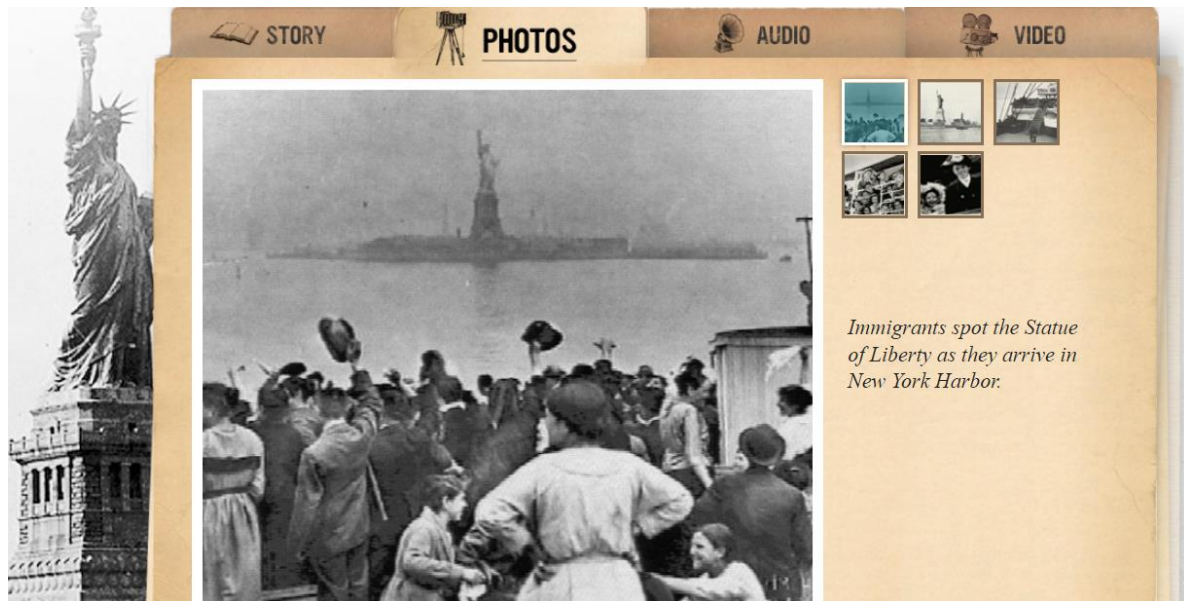


Figure 17

*Icons as Examples of Semiotic Elements Provided Alongside the Reading Paragraphs*

STORY PHOTOS

**M**ost of the immigrants who came to America through Ellis Island were from eastern and southern Europe. In many cases, they came to escape the poverty and religious intolerance that existed in small towns in countries such as Italy, Poland, and Russia.

They began their journey to America on foot, horseback, or train. Many trekked hundreds of miles across Europe to get to a seaport. When they arrived at the coast, they boarded a steamship.

The trip across the Atlantic Ocean lasted one to two weeks. The ships divided passengers by wealth and class. First- and second-class passengers stayed in staterooms and cabins. But most people were in third class, called "steerage." Steerage was a large, open space at the bottom of the ship.

As many as 3,000 people crowded the ships. They often came from different countries, spoke different languages, and belonged to different religions.

**DID YOU KNOW?**  
 Emigrant and immigrant are related words  
[Learn more](#)

The invention of steamships transformed immigration  
[Learn more](#)

**YOU ARE HERE**  
 The Passage

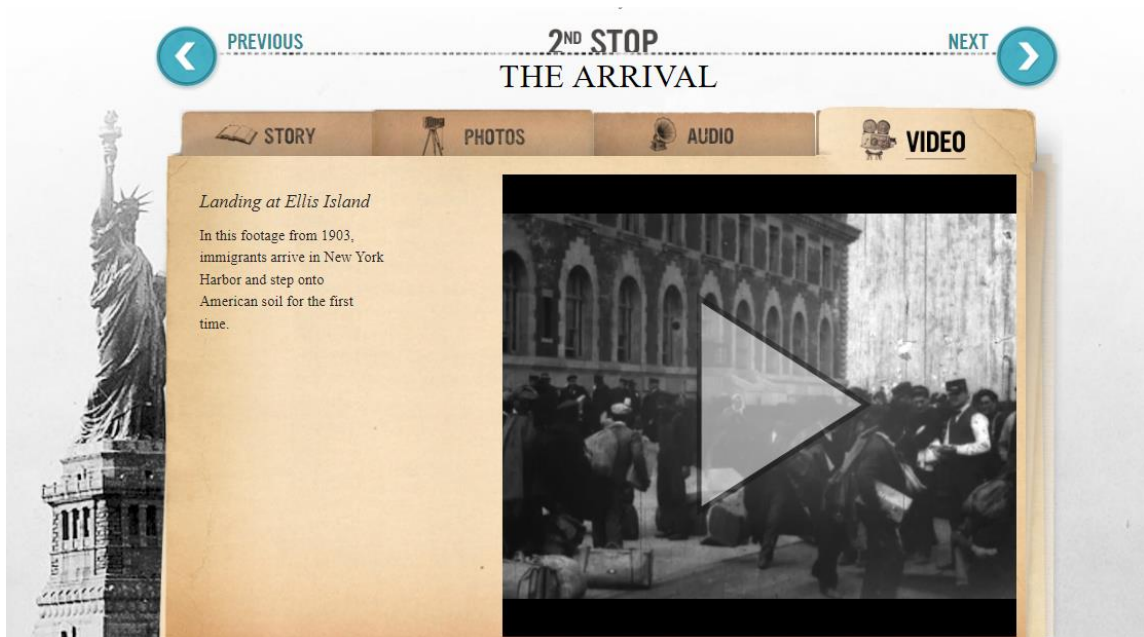
Figure 18

*Audio as an Example of Multimodal Elements Provided Alongside the Reading Paragraphs*



Figure 19

*Video as an Example of Multimodal Elements Provided Alongside the Reading Paragraphs*



### ***Instrument 3: Survey***

A survey was constructed with Google Forms software to reveal the participants' attitudes towards MSA and for the association between the metacognitive awareness of reading strategies and the reading comprehension levels through MSA. Because of this, two different sections for these purposes were designed in the survey by inserting explanatory instructions at the language proficiency level of the participants.

In the first section, eight (8) Likert-type items which were adapted from Ajayi's (2010) attitude scale after the permission to adapt them was obtained from the author were used to measure the participants' attitudes towards MSA. Item 1 is about thoughts on the prominence of using multiple modes and signs together in text, Item 2 concerns feelings towards the use of MSA in reading, Item 3 is related to beliefs on the efficacy of MSA in reading the texts written in the target language, Items 4 and 8 concern thoughts and behavioral intentions on teaching reading with MSA, Items 5, 6, and 7 are pertinent to beliefs and intentions for teacher training in reading instruction with MSA. Respondents are asked to indicate their agreement or disagreement on a 5-point scale. The points mean as follows: (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) Strongly agree

Into the second section, Metacognitive Awareness of Reading Strategies Inventory (MARS) which was developed by Mokhtari and Reichard's (2002) was placed without making any alterations in it. The inventory includes thirty (30) metacognitive statements/items related to reading comprehension and three (3) subscales which are named as *Global Reading Strategies*, *Problem-Solving Strategies*, and *Support Reading Strategies*. The first subscale, *Global Reading Strategies*, stands for a group of reading strategies aiming at an extensive reading approach such as reading purposefully, and thirteen (13) items (Items 1, 3, 4, 7, 10, 14, 17, 19, 22, 23, 25, 26, 29) are within the first subscale. The second subscale, *Problem-Solving Strategies*, involves the strategies to find remedies for the comprehension difficulties the readers experience while reading such as adjusting the reading pace, and this subscale contains eight (8) items (Items 8, 11, 13, 16, 18, 21, 27, 30). The third subscale called as

*Support Reading Strategies* involves nine (9) items (Items 2, 5, 6, 9, 12, 15, 20, 24, 28), and it intends to increase reading comprehension through certain helpful actions such as navigating back and forth in the text to understand the associations between the ideas or having recourse to dictionaries. This inventory also has five (5) points for respondents to specify how often they display the behaviors stated in the items while they are reading academic or school-related materials such as textbooks, library books, etc. Five numbers follow each item, and each number means the following: 1 means “I never or almost never do this.”, 2 means “I do this only occasionally.”, 3 means “I sometimes do this.” (About 50% of the time.), 4 means “I usually do this.”, 5 means “I always or almost always do this.”.

### Data Analysis

Initially, the data gathered from the post-tests which were administered in the first phase of the present research were anonymized by assigning code numbers to the personal names provided in the data on an Excel spreadsheet. Thus, the confidentiality of the personal information was maintained. IBM SPSS Statistics Program version 26 was used to analyze all the quantitative data collected in both phases of the research. Table 8 was drawn up to present the summary of the data analysis.

**Table 8**

#### *Data Analysis Summary*

Research Questions	Instrument	Data Collection Sample	N	Data Analysis	Statistical Analysis
RQ1: Do the students who are exposed to the <i>Multimodal Semiotic Approach</i> (MSA) outperform the students who remain text-bound on the reading comprehension test?	- Post-test	- Experimental group  - Control group	71	Quantitative	- Descriptive statistics -Independent samples t-test - Levene’s test

<b>RQ2:</b> What are the students' attitudes towards the <i>Multimodal Semiotic Approach</i> (MSA) for reading comprehension in the target language?	- Survey	- Experimental group only	36	Quantitative	- Descriptive statistics
<b>RQ3:</b> What are the metacognitive awareness levels of reading strategies of the students exposed to the MSA?	- Survey	- Experimental group only	36	Quantitative	- Descriptive statistics
<b>RQ4:</b> What is the relationship between the students' attitudes towards MSA and their reading comprehension levels achieved through MSA?	- Survey - Post-test	- Experimental group only	36	Quantitative	- Descriptive statistics - Pearson r correlation test
<b>RQ5:</b> What is the relationship between the students' metacognitive awareness levels of reading strategies and their reading comprehension levels achieved through MSA?	-Survey -Post-test	- Experimental group only	36	Quantitative	- Descriptive statistics - Pearson r correlation test

---

As stressed in the literature related to conducting statistical analysis in language research (Larson-Hall, 2009; Lowie & Seton, 2013), glancing at and reporting the descriptive statistics is essential for the preliminary review of the data as well as for determining which inductive statistical tests can be used with the data as a next step because these tests rely on some assumptions that need to be tested by descriptive statistics. For these reasons,

descriptive statistics such as the highest and the lowest scores obtained from the post-test by the participants, mean, standard deviation, etc. were calculated and reported for each variable in the research.

Thereafter, independent samples t-test was chosen to be carried out on the scores of the post-test which had been administered to the experimental group and the control group to reveal if there is a statistically significant difference between them, and thus to evaluate the effect of MSA on the participants' reading comprehension levels. Independent samples t-test was regarded as appropriate according to Lowie and Seton's table (2013) showing which statistic can be used with how many variables and which type of variables. There was only one nominal independent variable, which was reading comprehension level, and there were two groups (levels) for the nominal independent variable, which were an experimental and a control group, and there was only one interval dependent variable, which was the post-test score, under investigation. Prior to carrying out independent samples t-test was carried out, whether the relevant assumptions of parametric statistics were fulfilled in the data was checked since independent samples t-test is a kind of parametric statistics (Larson-Hall, 2009; Lowie & Seton, 2013). For instance, the data obtained from the descriptive statistics such as frequency distributions were examined, and Levene's test was used to find out if the data has homogeneity of variance.

Finally, the responses to the Likert-type attitude survey for reading with MSA and the metacognitive awareness of reading strategies inventory (MARSI), both of which were conducted as a whole survey in the second phase of the research, were first analyzed to generate descriptive data. The mean scores and standard deviations of Likert-type attitude and MARSI were tabulated. The item scores were obtained from the survey by assigning numbers to the choices of each item in the survey. For example, those numbers were assigned for the given choices in the attitude survey: (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) Strongly agree. Similarly, numbers were assigned for the statements included in each item of the inventory. Looking at the mean scores, the participants'

attitudes towards MSA and their metacognitive awareness of reading strategies were determined.

Afterwards, Pearson  $r$  correlation analysis was conducted to investigate the relationships between the participants' attitudes towards MSA and their reading comprehension levels through MSA and between their metacognitive awareness of reading strategies of the participants and their reading comprehension levels through MSA. Alpha error was set to %5 for both t-test and the correlation analyses.



## Chapter 4

### Findings, Comments and Discussion

In this section, the findings obtained from the data of this study were presented and discussed. Throughout the study, quantitative data type was collected through experimental and survey designs. In the first phase, the data collected from the post-test only with nonequivalent comparison groups design, which is one of the experimental designs, was examined to determine the effect of MSA on the reading comprehension levels of the EFL students. In the second phase, the data collected from the survey design was examined to explore the participants' attitudes towards MSA and their metacognitive awareness of reading strategies. The findings which were drawn together as a result of the various data analyses were tackled and discussed under five main headings:

- I. **Research Question-1:** Will the students who are exposed to the Multimodal Semiotic Approach (MSA) outperform the students who remain text-bound on the reading comprehension test?
  - a. Comparison of Academic Success and English Language Proficiency Levels of Experimental and Control Groups
  - b. Experimental and Control Group Descriptive Statistics
  - c. Independent Sample T-test Findings
  
- II. **Research Question-2:** What are the students' attitudes towards the Multimodal Semiotic Approach (MSA) for reading comprehension in the target language?
  - a. Descriptive Statistics of Attitude Survey
  - b. Findings of Attitude Survey

**III. Research Question-3:** What is the metacognitive awareness of reading strategies levels of the students exposed to the MSA?

a. Descriptive Statistics of MARSI and Findings of MARSI

**IV. Research Question-4:** What is the relationship between the students' attitudes towards MSA and their reading comprehension levels achieved through MSA?

a. Pearson R Correlation Result

**V. Research Question-5:** What is the relationship between the students' metacognitive awareness of reading strategies levels and their reading comprehension levels achieved through MSA?

a. Pearson R Correlation Result

There were 71 participants in the study, and they all completed the data collection tools given to them, so there was no missing data. The participation in the study was based on voluntariness.

**I. Research Question-1:** Will the students who are exposed to the Multimodal Semiotic Approach (MSA) outperform the students who remain text-bound on the reading comprehension test?

**a. Comparison of Academic Success and English Language Proficiency Levels of Experimental and Control Groups**

At the outset, both the experimental and the control groups' self-reported GPA and English language proficiency levels were examined to determine if the experimental and the control groups were homogeneous to be compared with the independent sample t-test. Thus,

the self-reported GPA and English language proficiency levels were analyzed by assigning those numbers to the levels of GPA and English language proficiency:

**Table 9**

*Representation of GPA and English Language Proficiency in Data Analysis*

<b>GPA Intervals</b>	<b>Assigned Numbers</b>
3.75 - 4.0	5.00
3.50 - 3.75	4.00
3.25 - 3.50	3.00
3.00 – 3.25	2.00
2.75 – 3.00	1.00

<b>English Language Proficiency</b>	<b>Assigned Numbers</b>
C2	6
C1	5
B2	4
B1	3
A2	2
A1	1

After the nominal values were converted into numerical values, the independent sample t-test was conducted on GPA and English language proficiency levels. In the experimental group, 16 participants had GPA levels within 3.50 - 3.75; 12 participants had GPA levels within 3.75 - 4.0; 4 participants had GPA levels within 3.25 - 3.50; 2 participants had GPA levels within 3.00 – 3.25; and 2 participants had GPA levels within 2.75 – 3.00. In the control group, 15 participants had GPA levels within 3.50 - 3.75; 9 participants had GPA levels within 3.25 - 3.50; 6 participants had GPA levels within 3.75 - 4.0; 3 participants had GPA levels within 2.75 – 3.00; 2 participants had GPA levels within 3.00 – 3.25. The descriptive statistics and the independent sample t-test results were tabulated as follows:

**Table 10***Descriptive Statistics of GPA Levels*

		Groups	N	Mean	Std. Deviation	Std. Error Mean
GPA Levels	Experimental Group		36	3.9444	1.09400	.18233
	Control Group		35	3.5429	1.12047	.18939

As Table 10 shows the mean scores of the experimental ( $M= 3.94$ ) and the control groups ( $M=3.54$ ) are close to each other.

**Table 11***Independent Sampe T-test Results for GPA Levels*

	Levene's Test for Equality of Variances		T-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
GPA Levels	.645	.425	1.528	69	.131	.40159

The results, as shown in Table 11, indicated that there is no statistically significant difference between the mean scores of the GPA levels of the experimental and the control group because Sig. (2- tailed) level is higher than .05 alpha level ( $t(69)= 1.528$ ,  $p= .131 > \alpha= .05$ ). Also, equality of variances of the groups are met as the score of Levene's Test is not statistically significant ( $p= .425 > \alpha= .05$ ). These findings suggest that the experimental and the control group are comparable in terms of GPA levels.

Afterwards, the descriptive statistics and the independent sample t-test results for English language proficiency levels of the experimental and the control groups were examined.

**Table 12***Descriptive Statistics of English Proficiency Levels*

	Groups	N	Mean	Std. Deviation	Std. Error Mean
English Proficiency Levels	Experimental Group	36	4.0556	.92410	.15402
	Control Group	35	3.8286	.92309	.15603

Looking at Table 12, it can be seen that mean scores of the experimental group ( $M=4.05$ ) and the control group ( $M=3.82$ ) are comparable.

**Table 13***Independent Sampe T-test Results for English Proficiency Levels*

	Levene's Test for Equality of Variances		T-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
English Proficiency Levels	.018	.893	1.035	69	.304	.22698

According to Table 13, Levene's test score is greater than alpha value ( $p= .893 > \alpha= .05$ ), which means that there is no difference between the groups. Besides, T-test result shows that the mean scores of the experimental and the control groups do not differ significantly. Therefore, the experimental and the control groups can also be assumed to be comparable in terms of their English proficiency levels.

All these suggest that the difference which might occur between the mean scores of the reading comprehension post-test can be attributed to the treatment, namely the multimodal semiotic approach.

## b. Experimental and Control Group Descriptive Statistics

### A) Experimental Group

There were 36 participants in the experimental group. The test score of each student was calculated by Google Forms so that the possibility of making errors in the scoring was eliminated. The scoring for each students' test was made out of 100 points. Total scores of the experimental group were found to be 3.229,9992. Other descriptive statistics related to the experimental group are shown in Table 14.

**Table 14**

#### *Descriptive Statistics of Experimental Group*

Reading Comprehension	N	Mean	Std. Deviation	Minimum Score	Maximum Score
Post-test with MSA	36	89.7222	9.33078	70	100

### B) Control Group

There were 35 participants in the control group. The test score of each student was calculated by Google Forms so that the possibility of making errors in the scoring was eliminated. The scoring for each students' test was made out of 100 points. Total scores of the control group were found to be 2.580,0005. Other descriptive statistics related to the control group are shown in Table 15.

**Table 15**

#### *Descriptive Statistics of Control Group*

Reading Comprehension	N	Mean	Std. Deviation	Minimum Score	Maximum Score
Post-test without MSA	35	73,7143	11,00420	55	90

### c. Independent Sample T-test Findings

To investigate the effect of MSA on reading comprehension levels of the participants, independent sample t-test was carried out. It compares the means of the groups to reveal whether the groups vary. Therefore, in this study, the reading comprehension level means of the experimental and the control were compared to explore if the group vary in the reading comprehend level. The results of the independent sample t-test are demonstrated below.

**Table 16**

*Comparison of Groups' Statistics*

Reading Comprehension Post-test	Groups	N	Mean	Std. Deviation	Std. Error Mean
	Experimental Group	36	89.72	9.33078	1.55513
Control Group	35	73.71	11.00420	1.86005	

Table 16 shows the descriptive statistics of the reading comprehension post-test that both the experimental and the control groups took for the study. As can be seen from the table (above), the mean score of the experimental group ( $M= 89.72$ ) is higher than the mean score of the control group ( $M= 73.71$ ).

A directional hypothesis, which makes a prediction for the result of the independent sample t-test, was written considering the existing literature for the expected difference between the reading comprehension post-test results of the experimental and the control group as follows:

Directional Hypothesis:

*The experimental group (the students exposed to the multimodal semiotic approach) will outperform the control group (the students who remain text-bound) on the reading comprehension test.*

**Table 17**

*Independent Sampe T-test Results*

	Levene's Test for Equality of Variances		T-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Post-test	1.969	.165	6.618	69	.000	16.00794

After the independent sample t-test was carried out to the post-test data collected by both experimental and control groups, the Levene's test was first examined to ensure that the data has homogeneity of variance. It was determined that the score of Levene's test ( $p = .165 > \alpha = .05$ ) was not significant, so homogeneity of variance of the data was established. Subsequently, it was found out that the mean score of the experimental group's post-test is statistically significantly different from the mean score of the control group's post-test according to Table 17 ( $t(69) = 6.618, p = .000 < \alpha = .05$ ). In addition, these results were obtained with the 95% Confidence Interval of the Difference and with .05 significance alpha level, which is generally set at this level by researchers to indicate that there is a 5% risk level of incorrectly rejecting the null hypothesis.

This study set out with the aim of investigating the effect of multimodal semiotic approach (MSA) on the English reading comprehension levels of the first-year university students in Turkish EFL context. With this aim, the experimental group was exposed to MSA by having the students in the experimental group take a virtual tour related to the content of the reading comprehension post-test just before the researcher administered the post-test and



the students were exposed to MSA again by having them do the post-test since the post-test was especially developed to include multimodality and semiotic elements. On the other hand, the control group was not exposed to MSA by only having them do the reading comprehension post-test which included the same items but did not include the multimodal and semiotic elements in it. As a result of the independent sample t-test conducted on the data from the reading comprehension post-tests, it was found that there is a statistically significant difference between the students who were exposed to the multimodal semiotic approach (the experimental group) and the students who remained text-bound during the post-test (the control group). As the mean score of the experimental group's post-test is higher than the mean score of the control group's post-test, it can be interpreted that the experimental group did better in the reading comprehension post-test than the control group. Therefore, the directional hypothesis was confirmed, and so the findings suggest that MSA has a positive effect on the reading comprehension levels of the students by improving their comprehension during the reading process.

Previous studies (Bao, 2017; Boshraadi & Biria, 2014; Liu & Liu, 2015; Pan & Zhang, 2020; Sornkeaw, 2021; Yimwilai, 2019) investigated the effect of the multimodal approach on reading comprehension in various EFL contexts, and they concluded that using multimodal approach for English reading instruction is a more effective way than the traditional text-based approach to improve the reading comprehension abilities of the students. Also, a number of studies (Erten & Razi, 2009; Su, 2009; Weninger & Kiss, 2013) on semiotic approach to the English language teaching found that integrating semiotic elements such as symbols, icons, and indexes into the reading instruction helped the students comprehend the readings texts better. The findings about the positive effect of MSA on the reading comprehension of the current study not only confirms the findings of the mentioned studies but also show that the combined use of the multimodal and the semiotic approaches is also more efficient in enhancing the reading comprehension levels of the students than the traditional text-bound approach in the EFL context. Besides, the fact that the reading comprehension test constructed

with MSA came out to be more effective in facilitating the reading comprehension of the students than the test constructed with the traditional text-bound approach suggests that MSA can be used for constructing new kind of reading comprehension test items which reflect authentic reading tasks. The underlying reason for these findings may be that the various signs such as icons, symbols, and indexes; and the different modes of communication such as visuals, videos, virtual tour, maps, and sound recordings included in the texts to adopt MSA might have helped the students to guess the meanings of the unknown vocabulary, grammatical forms, and to use the cultural and background information effectively. However, it cannot be definitely concluded that all of the different modes and all the signs included in the texts made the comprehension of the meanings that the texts communicate by taking into consideration the findings of the study undertaken by Daly and Unsworth (2011), which demonstrated that some types of relations between the visual and the linguistic modes such as 'augmentation' and 'distribution' were related to the high levels of item difficulty.

**II. Research Question-2:** What are the students' attitudes towards the Multimodal Semiotic Approach (MSA) for reading comprehension in the target language?

**a. Descriptive Statistics of Attitude Survey**

The students' attitudes towards the MSA for reading comprehension were determined by administering an attitude survey on use of multimodality and semiotic elements for reading and reading instruction to only the experimental group. The survey was not administered to the control group in case they had not been exposed to the MSA for reading instruction before and could not have any ideas about MSA. Then, calculation was made to find the mean scores of answers to each item in the attitude survey. To obtain mean scores, the choices of the attitude survey were converted into numerical values as in the following: (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) Strongly agree. All the participants (36 students) in the experimental group completed the attitude survey. The mean scores can be examined in Table 18.

**Table 18***Participants' Responses to the Items of Attitude Survey*

Item Number	Items	Mean	Std. Deviation
1	I think that using various modes and signs together (e.g. language, audio, visual images) has become increasingly prominent in different text-types in recent times.	3.75	.94
2	I feel that the reading texts integrating language with signs and other modes—images, color, graphics, etc. are more enjoyable than the ones including only language.	4.39	.90
3	I think that the multiple modes including signs in communication technologies have facilitated the way people read the texts in the target language.	3.81	.82
4	I think that literacy instruction must account for the increasing variety of textual forms, e.g. media texts, print-based texts, visual images, maps, etc.	3.75	1.05
5	I believe that teacher training programs should provide preservice teachers with the skills for teaching to analyze the means by which images make meanings in texts.	3.97	.90
6	I believe that teacher training programs should prepare preservice teachers to teach how different modes (language, audio, visual) offer differing possibilities for reading comprehension.	4.36	.83
7	I would prefer to learn the strategies to teach my students how to use signs as alternative resources for reading comprehension.	4.22	.99
8	When I become a teacher, I will teach my students the skills to use all modes, speech, image, action, color, to derive meaning from reading texts.	4.31	.82

*Note.* n = 36

### **b. Findings of Attitude Survey**

The attitude survey contained eight items related to the use of multimodality and signs in reading instruction. When the mean scores of the responses of the students to the items were examined, it was found that the students' attitudes towards the use of MSA for reading comprehension and instruction were generally positive because the mean scores of the items 1 ( $M= 3.75$ ), 3 ( $M= 3.81$ ), 4 ( $M= 3.75$ ), and 5 ( $M= 3.97$ ) are close to 4, which means most of the students agree with these items, and the mean scores of the items 2 ( $M= 4.39$ ), 6 ( $M=$

4.36), 7 ( $M= 4.22$ ), 8 ( $M= 4.31$ ) are above 4, which means a great number of students strongly agree with them. From Table 18, it can be seen that the items 1 and 4 have the same mean score ( $M= 3.75$ ), so 75% of the students reported that they were conscious of the multimodality and signs' prominence in today's texts, and reading instruction must take this into account. A possible explanation for this result might be that the students are aware of the important place the multimodality and semiotic elements occupy in today's reading practices thanks to the ICT developments, and so they think that the reading instruction should reflect the daily authentic reading practices out of the classroom. These findings are consistent with the those of Ajayi (2010), which also indicated that pre-service teachers realized that how the recent media technologies transformed the reading activities in all fields of life, and they called for a reading program enabling teachers to benefit from the affordances of the advanced media technologies along with the written texts. In relation to the item 2, it is apparent that most of the students (88%) enjoyed the MSA more than the traditional approach to reading instruction as the item 2 has the highest mean score ( $M= 4.39$ ) among all the items in the attitude survey. This finding supportive of the findings of earlier studies (Boshwabadi & Biria, 2014; Varaporn & Sitthitikul, 2019) in which the students stated that the multimodal texts were enjoyable and interesting. In response to the third item, 75% of students thought that the multimodality and signs of the texts made the reading process easier. This finding could stem from the fact that the students found MSA to reading enjoyable, and thus their engagement with the reading process increased. Besides, similar findings from other studies (Boshwabadi & Biria, 2014; Varaporn & Sitthitikul, 2019) indicated that the students read a text with more comprehension and confidence through the aid of various modes a text includes. In addition, the students claimed that their metacognition developed by the multimodal reading activities for the reason that they pondered on which modalities they should choose for what purpose during the reading process Varaporn & Sitthitikul (2019). As for the item 5, it can be stated that 79% of the students agreed ( $M= 3.97$ ) that the teachers should be taught how to use the visual mode to make meaning in the reading process. It can be inferred from this finding that the students might believe that the visual mode among the other modes is more effective in facilitating the reading comprehension

process. In Boshrabadi's study (2014), the students believed that the affordances of visual mode were more helpful than the aural mode for the reading comprehension. When the mean scores of the items 6 ( $M= 4.36$ ), 7 ( $M=4.22$ ), and 8 ( $M= 4.31$ ) were looked into, it can be indicated that they are very close to each other. From this result, it can be concluded that the students wanted to receive the courses which would prepare them to teach reading with MSA and they had a strong tendency to use MSA to reading instruction when they became English language teachers. In accordance with the present findings, Ajayi's study (2010) demonstrated that pre-service teachers were willing to teach reading with the multiple modes of communication and to be trained to have the competency to benefit effectively from the affordances of the modern-day multimodality of the texts, developed as a result of the recent advancements in the ICT technology, in their teaching activities for reading.

**III. Research Question-3:** What is the metacognitive awareness of reading strategies levels of the students exposed to the MSA?

**a. Descriptive Statistics and Findings of MARSI**

Investigating the relationship between the students' metacognitive awareness of reading strategies levels and the reading comprehension levels achieved through MSA was another objective of the current study. To this end, metacognitive awareness of reading strategies inventory (MARSI) developed by Mokhtari and Reichard's (2002) was administered to the experimental group to measure the students' metacognitive awareness of reading strategies levels. As its relationship with the reading comprehension levels obtained by MSA was intended to be investigated, the inventory was administered to only the experimental group ( $N= 36$ ). MARSI contained thirty (30) items in total and the items were categorized as global (13 items), problem solving (8 items), and support reading strategies (9 items). Each item was rated on a 5-point Likert-type scale by the students. The students' metacognitive awareness of reading strategies levels was determined by the calculation of their mean scores. The analysis results were also examined under three categories: global, problem solving, and support reading strategies. The scoring rubric developed by Mokhtari and Reichard's (2002)

for MARS, which indicates that 3.5 or higher scores mean high level of metacognitive awareness of reading strategies (MARS); the scores between 2.5 and 3.4 means medium level of MARS; and 2.4 or lower scores mean low level of MARS, was considered while the results were being interpreted. The descriptive statistics of MARS was demonstrated in Table 19.

**Table 19**

*Participants' Responses to the Items of MARS*

Metacognitive Awareness of	N	Mean	Std. Deviation
Global Reading Strategies	36	3.52	.42
Problem-Solving Reading Strategies	36	4.16	.42
Support Reading Strategies	36	3.10	.48
Total Reading Strategies	36	3.56	.59

According to Table 19, the mean level of MARS of the students is above the cut-off point for high level of MARS ( $M= 3.56$ ), which means that the students' general use of the reading strategies is at a high level. Problem-solving reading strategies received the highest mean score ( $M=4.16$ ). Global reading strategies followed it ( $M= 3.52$ ). Support reading strategies received the lowest mean score ( $M= 3.10$ ) among the other reading strategies. These results can be interpreted that the students have high levels of metacognitive awareness of problem-solving and global reading strategies since the mean scores of these strategies are higher than the cut-off score 3.5 ( $M=4.16$ ,  $M= 3.52 > 3.5$ ), and they have medium level of metacognitive awareness of support reading strategies as the mean score of support reading strategies ( $M= 3.10$ ) is between 2.5 and 3.4 cut-off scores. These findings show similarity with those in Manalu and Wirza's study (2021) which also found that the EFL second graders at high school had the highest level of metacognitive awareness for problem-solving strategies

in reading texts employing various modalities and the lowest level of metacognitive awareness for support reading strategies. Further details on the levels of MARS are provided below:

### ***Global Reading Strategies***

There were thirteen items related to global reading strategies in the inventory. The descriptive statistics of these items were shown in Table 20.

**Table 20**

*Participants' Responses to the Items of Global Reading Strategies*

Item	Mean	Std. Deviation
GLOB 1. I have a purpose in mind when I read.	3.89	.89
GLOB 3. I think about what I know to help me understand what I read.	3.78	1.15
GLOB 4. I preview the text to see what it's about before reading it.	3.25	1.36
GLOB 7. I think about whether the content of the text fits my reading purpose.	3.11	1.24
GLOB 10. I skim the text first by noting characteristics like length and organization.	2.72	1.54
GLOB 14. I decide what to read closely and what to ignore.	3.91	1.08
GLOB 17. I use tables, figures, and pictures in text to increase my understanding.	3.08	1.32
GLOB 19. I use context clues to help me better understand what I'm reading.	3.72	1.11
GLOB 22. I use typographical aids like bold face and italics to identify key information.	3.36	1.31
GLOB 23. I critically analyze and evaluate the information presented in the text.	3.30	.95
GLOB 25. I check my understanding when I come across conflicting information.	4.22	.80
GLOB 26. I try to guess what the material is about when I read.	3.78	1.18
GLOB 29. I check to see if my guesses about the text are right or wrong.	3.58	1.42
Global Reading Strategies	3.52	.42

As the Table 20 displays, the mean score ( $M= 4.22$ ) of the item 25 is the highest among the mean scores of the other items. This finding can be interpreted as that most of the students monitor during the reading process, which is one of the fundamental components of metacognition (Mokhtari & Reichard, 2002; Soto et al., 2019). On the other hand, the item 17

has the lowest mean score ( $M= 2.72$ ) compared to the mean scores of the other items. This finding is interesting because it means that most of the students do not plan their reading activity by considering the text characteristics such as length and organization. However, the most striking finding is that the mean score ( $M= 3.08$ ) of the item 17 has a medium level of MARS. The item is about the use of the affordances of visual mode such as tables, figures, and pictures in the texts and it was expected to be at a high level of MARS since the students, in the attitude survey, showed a high rate of agreement on that the necessary skills of using visual mode of the texts for meaning-making should be included in the training programs of the teachers.

### ***Problem-Solving Reading Strategies***

There were eight items related to problem-solving reading strategies in the inventory. The descriptive statistics of these items were shown in Table 21.

**Table 21**

### *Participants' Responses to the Items of Problem-Solving Reading Strategies*

Item	Mean	Std. Deviation
PROB 8. I read slowly but carefully to be sure I understand what I'm reading.	3.53	1.32
PROB 11. I try to get back on track when I lose concentration.	4.42	.69
PROB 13. I adjust my reading speed according to what I'm reading.	4.11	1.06
PROB 16. When text becomes difficult, I pay closer attention to what I'm reading.	4.69	.57
PROB 18. I stop from time to time and think about what I'm reading.	3.50	1.28
PROB 21. I try to picture or visualize information to help remember what I read.	4.05	.92
PROB 27. When text becomes difficult, I re-read to increase my understanding.	4.58	.50
PROB 30. I try to guess the meaning of unknown words or phrases.	4.36	.80
Problem-Solving Reading Strategies	4.16	.42



What stands out in Table 16 is that the mean score of each item of problem-solving reading strategies is higher than the cut-off score 3.5, which means that the most of the students have a high level of metacognitive awareness of problem-solving reading strategies and they try to regulate their reading process by applying these repair strategies when they experience reading comprehension break-downs. Among all the items, the item 16 has the highest mean score ( $M= 4.69$ ). This finding suggests that focusing on the difficult part of the text is the most preferred problem-solving strategy by the students.

### ***Support Reading Strategies***

There were nine items related to support reading strategies in the inventory. The descriptive statistics of these items were provided in Table 22.

**Table 22**

*Participants' Responses to the Items of Support Reading Strategies*

Item	Mean	Std. Deviation
SUP 2. I take notes while reading to help me understand what I read.	2.25	1.28
SUP 5. When text becomes difficult, I read aloud to help me understand what I read.	2.75	1.27
SUP 6. I summarize what I read to reflect on important information in the text.	3.25	1.20
SUP 9. I discuss what I read with others to check my understanding.	2.97	1.05
SUP 12. I underline or circle information in the text to help me remember it.	3.58	1.15
SUP 15. I use reference materials such as dictionaries to help me understand what I read.	2.75	1.13
SUP 20. I paraphrase (restate ideas in my own words) to better understand what I read.	3.64	1.17
SUP 24. I go back and forth in the text to find relationships among ideas in it.	3.69	1.06
SUP 28. I ask myself questions I like to have answered in the text.	3.05	1.26
Support Reading Strategies	3.10	.48

From Table 22, it is clear that the item 24 has the highest mean score ( $M= 3.69$ ) and the item 20 follows it with a very close mean score ( $M= 3.64$ ). It can be inferred from these results that the majority of the students try to improve their reading comprehension by looking at the links of cohesion and coherence in the text and by paraphrasing. The item with the lowest mean score ( $M= 2.25$ ) is the item 2, which indicates that few students use taking notes strategy to facilitate their reading comprehension. The items 5 ( $M= 2.75$ ), 9 ( $M= 2.97$ ), and 15 ( $M= 2.75$ ) have low mean scores compared to the other items. This result may be explained by the fact that most of the students might think reading silently is more effective than reading aloud and avoid using outside materials.

A note of caution is due here since the findings above does not assure that the respondents of MARSI really use these strategies at the levels they reported in the inventory. Because these are the findings from the data obtained through a self-report instrument, MARSI, it was just assumed that the participants honestly responded to MARSI.

**IV. Research Question-4:** What is the relationship between the students' attitudes towards MSA and their reading comprehension levels achieved through MSA?

**a. Pearson R Correlation Test Result**

Pearson  $r$  correlation test was conducted to the scores of the students' attitudes towards MSA and to their scores of reading comprehension post-test obtained after MSA treatment with the aim of finding the relationship between them. In the literature, the strength of correlation is generally accepted to be weak if the  $r$  value is between .1 - .3 or -0.1 – and -0.3; medium if it is between .3 - .5 or -0.3 and -0.5.; strong if it is between .5 – 1.0 or -0.5 and -1. Table 23 presents the correlation between the two variables.

**Table 23**

*Pearson R Correlation Result for Attitudes and Reading Comprehension Levels by MSA*

		Reading Comprehension by MSA	Attitude
Reading Comprehension by MSA	Pearson Correlation	1	.697(*)
	Sig. (2-tailed)		.023
	N	36	36
Attitude	Pearson Correlation	.697(*)	1
	Sig. (2-tailed)	.023	
	N	36	36

\* Correlation is significant at the .05 level (2-tailed)

As can be seen from Table 23, there is a strong positive correlation between the students' attitudes towards MSA and their performance on reading comprehend post-test with MSA since the  $r$  value is higher than .5 value ( $r = .697$ ) and the correlation is significant at .05 significance alpha level. ( $sig. (2-tailed) = .023$ ). Therefore, this result can be interpreted as that there is a significant positive relationship between the attitudes towards MSA and the reading comprehension levels obtained by MSA. When the students adopt more positive attitudes towards MSA, their reading comprehension performance through MSA increases.

**V. Research Question-5:** What is the relationship between the students' metacognitive awareness of reading strategies levels and their reading comprehension levels achieved through MSA?

**a. Pearson R Correlation Result**

Another Pearson  $r$  correlation test was conducted to find the relationship between the students' MARS and their reading comprehension levels that they achieved after they were

exposed to MSA. In the literature, the strength of correlation is generally accepted to be weak if the  $r$  value is between .1 - .3 or -0.1 – and - 0.3; medium if it is between .3 - .5 or -0.3 and - 0.5; strong if it is between .5 – 1.0 or -0.5 and -1. The correlation test result is shown in Table 19.

**Table 24**

*Pearson R Correlation Result for MARS and Reading Comprehension Levels by MSA*

		Reading Comprehension by MSA	MARS
Reading Comprehension by MSA	Pearson Correlation	1	.359(*)
	Sig. (2-tailed)		.016
	N	36	36
MARS	Pearson Correlation	.359(*)	1
	Sig. (2-tailed)	.016	
	N	36	36

\* Correlation is significant at the .05 level (2-tailed)

As shown in Table 19, there is a positive correlation between the students' metacognitive awareness of reading strategies levels and their reading comprehension levels achieved through MSA because the significance value is below .05 (sig. (2-tailed)= 0.16) and the  $r$  value is between .3 and .5 cut-off values ( $r = .359$ ). This result indicates that there is a medium-level positive relationship between the students' metacognitive awareness levels for reading strategies and their reading comprehension performance on the post-test with MSA. Although the strength of correlation between the variables is at medium level, it can be concluded from this result that as the students' MARS levels increase, their reading comprehension performances with MSA increase as well or the vice versa can be confirmed, in other words, the students' reading comprehension levels with MSA increases as their reading comprehension performances with MSA increase. A possible explanation for the latter

relationship might be that reading with MSA can encourage the use of metacognition as the students reported in Varaporn and Sitthitikul's study (2019). With the correlation analysis result, the effect of MSA on metacognitive awareness levels for reading strategies can not be interpreted. However, the positive relationship between can inspire the future studies to investigate the cause-and-effect relationship between the MARS levels and the reading comprehension levels obtained by MSA. Moreover, these results support the findings of Manalu and Wirza (2021), who also found high level of self- reported use of MARS with different modes of texts. In addition, it is important to bear in mind that this study intentionally merged semiotic elements with multimodality to investigate their combined relationship with MARS levels unlike previous studies. Furthermore, it should be noted that a positive relationship between these variables might not be found in all EFL contexts because, as indicated in the literature (Flavell, 1979; Griffith & Ruan, 2005), a certain level of cognitive maturity is required to be able to use metacognition effectively, and thus similar results might not be obtained when the same study is conducted with younger EFL students.

## Chapter 5

### Conclusion and Suggestions

The purpose of the current study was to investigate the combined effect of the multimodal and the semiotic approach on the reading comprehension in the English as a foreign language (EFL) context. Therefore, the reading comprehension was chosen as the focus of the current study. This choice of study focus stemmed from the fact that the EFL students still experience reading comprehension problems due to the lack of cultural and background information, lack of interest and engagement with the texts according to the literature. This approach combination was thought to be much more effective to solve these problems than the traditional text-bound approach when the positive results of the previous studies having employed these approaches separately to examine their effects on reading comprehension were taken into consideration. As attitudes and metacognitive awareness play an important role in successful reading comprehension, exploring the students' attitudes towards multimodal semiotic approach (MSA) and their metacognitive awareness of reading strategies was another purpose of this study. Finally, the relationships between the students' reading comprehension levels achieved by MSA and their attitudes towards MSA; and between the comprehension levels and the metacognitive awareness of reading strategies of the students exposed to MSA were determined. The study was carried out through the post-test only with nonequivalent comparison groups design, and the participants of the study were the Turkish first-year university students from the ELT department of a state university. The findings identified by the current study can be summarized as in the following:

Firstly, independent sample t-test results revealed that the experimental group which was exposed to MSA as the treatment differed significantly with 16.0 mean score difference on the reading comprehension post-test from the control group which remained text-bound during the experiment, which indicated that the students who were exposed to MSA comprehended the texts in the post-test more successfully than the students who were text-bound. This result suggests that the combined effect of the MSA on the students' reading

comprehension helped students increase their reading comprehension during the post-test more than the traditional approach did. Secondly, the survey results were examined to explore the students' attitudes toward MSA and their metacognitive awareness of reading strategies (MARS). The overall mean scores of the attitude survey ( $M= 4.07$ ) and the MARS ( $M= 3.56$ ) showed that the students had positive attitudes towards MSA and high level of MARS. Thirdly, Pearson  $r$  correlation coefficient was calculated to determine the relationship between the students' attitudes toward MSA and their reading comprehension levels through MSA. The Pearson  $r$  correlation result indicated that a strong positive correlation ( $r= .697$ ) existed between the attitudes to MSA and the reading comprehension levels achieved through MSA, from which it might be inferred that to the degree that the students reflect positive attitudes to MSA for reading instruction, their reading comprehension levels obtained after being exposed to MSA increase. Finally, the relationship between the students' MARS levels and their reading comprehension levels through MSA was revealed by conducting another Pearson  $r$  correlation analysis. As a result of the analysis, it was found that there was a medium level of positive correlation ( $r= .359$ ) between the two variables. This finding might be an indicator of the encouraging nature of MSA to reading instruction for the use of metacognition during the reading process.

### **Implications**

The findings of this study have a number of important implications for the reading instruction and testing reading comprehension in the EFL context. Considering the positive effect of MSA to reading instruction on the reading comprehension levels of the participants of this study, MSA can be employed for more effective teaching and testing reading in English for EFL students in different contexts. In this study, MSA was employed in a Turkish ELT department. Because of this, the language proficiency level (B2) of the many students was relatively higher than the language proficiency level of the students studying in the other departments whose medium of instruction is not English or at lower levels of education such as high school. Nevertheless, MSA can be employed in these education contexts by adapting

it to the proficiency level of the students. Besides, the cultural awareness of the students can be activated through MSA since various signs such as symbols and icons are benefited from in this approach. Moreover, the reading process of the students can be facilitated through use of multiple modes. For instance, by paying attention to the association between the words and the visuals, the students may make inferences about the content of the text; or they may understand where the incidents take place by hearing a background sound.

Also, the students may engage with the English reading lessons more actively and may show more interest in the lessons when the positive attitudes of the participants towards MSA for reading instruction are taken into account. Another implication that can be drawn from the attitudes of the participants is that there is a need for the curriculums to be updated in a way that includes the multimodal texts and the semiotic elements for the reading instruction. Furthermore, the survey results made it appear that the English pre-service teachers agree on that the curriculum of the ELT departments should offer courses which can prepare the prospective English teachers to adopt MSA effectively for teaching English reading. Therefore, the curriculums can be redesigned according to the needs and interests of the new generation.

In relation to the positive relationship between the students' MARS levels and their reading comprehension levels through MSA, it can be implied that explicit teaching for metacognitive awareness of reading strategies may be carried out with MSA. Teaching reading with MSA can provide more opportunities to use reading strategies than the traditional text-bound approach thanks to the various affordances such as infographics and the layout of the visuals and the writing on the pages MSA presents to the students.

### **Suggestions**

The present study is the first empirical investigation into the combined effect of multimodal and semiotic approaches on English reading comprehension in Turkish EFL context. To investigate this combined effect, these two separate approaches were merged into one approach, and it was named as multimodal semiotic approach (MSA). As this study is the



first attempt to adopt MSA to reading comprehension, there have not been any studies related to the attitudes towards it and its relationship with metacognitive awareness of reading strategies in the literature. Therefore, the present study contributes to the existing literature related to English reading instruction by providing information on MSA to teaching English reading and builds on the findings of the previous studies employing multimodal and semiotic approaches separately for teaching English reading.

Similar future studies can be conducted to provide the literature with further information on MSA for English reading instruction. Nevertheless, the present study is not without limitations. For example, the sample size can be larger and one of the probability sampling methods can be used to obtain more reliable and valid results from the data. Also, a reading comprehension pre-test can be added into the study design to ensure that the experimental and the control groups are comparable. Different EFL contexts can be chosen as settings to see if MSA will be consistently effective in enhancing the reading comprehension levels of the EFL students and to see how the students' attitudes towards MSA for English reading lessons will be. Besides, the effect of the signs and the modes employed in this study on the difficulty levels of the reading comprehension items can be investigated by analyzing their effect separately and in different combinations with established frameworks, such as systemic functional multimodal discourse analysis (SF-MDA) or Halliday's Functional Grammar (1994) and Kress and van Leeuwen's Visual Grammar (1996) as Daly and Unsworth (2011) used in their study, so that new meanings and effects arising from the various connections among the different modes and signs can be explored. Furthermore, the effect of MSA on metacognitive reading strategy use or on other language skills than reading comprehension skill can be investigated with more studies.

## References

- Adunyarittigun, D. (2002). An Investigation of Factors affecting English Language Reading Success: A Case Study of an EFL College Reader. *Thammasat Review*, 7(1), 244–271.
- Ajayi, L. (2010). Preservice Teachers' Knowledge, Attitudes, and Perception of Their Preparation to Teach Multiliteracies/Multimodality. *The Teacher Educator*, 46(1), 6–31. <https://doi.org/10.1080/08878730.2010.488279>
- Ajzen, I. (1988). *Attitudes, personality, and behavior*. Open University Press.
- Al Seyabi, F., & Tuzlukova, V. (2015). Investigating EFL reading problems and strategies in post-basic schools and university foundation programmes: A study in the Omani context. *Malaysian Journal of ELT Research*, 11(2).
- Al-Jawi, F. D. (2010). Teaching the receptive skills. Retrieved June, 17, 2017.
- Allen, M., Titsworth, S., & Hunt, S. K. (2008). *Quantitative Research in Communication*. SAGE Publications.
- Altbach, P. G. (2007). The Imperial Tongue: English as the Dominating Academic Language. *Economic and Political Weekly*, 42(36), 3608–3611.
- An Introduction to Applied Linguistics*. (n.d.). Routledge & CRC Press. Retrieved May 14, 2023, from <https://www.routledge.com/An-Introduction-to-Applied-Linguistics/Schmitt-Rodgers/p/book/9781138290136>
- Augustyn, P. (2012). On semiotics in language education. *Semiotica*, 2012. <https://doi.org/10.1515/sem-2012-0079>
- Baaqeel, N. (2020). Improving Student Motivation and Attitudes in Learning English as a Second Language; Literature as Pleasurable Reading: Applying Garner's Theory of Multiple Intelligences and Krashen's Filter Hypothesis. *Arab World English Journal For Translation and Literary Studies*, 4, 37–51. <https://doi.org/10.24093/awejtls/vol4no1.4>
- Babayigit, Ö. (2019). Examination the Metacognitive Reading Strategies of Secondary School Sixth Grade Students. *International Journal of Progressive Education*, 15(3), 1–12.
- Baker, C. (1992). *Attitudes and Language*. Multilingual Matters.

- Baker, L., & Brown, A. L. (1984). 12 metacognitive skills and reading. *Handbook of Reading Research, 1*, 353.
- Bao, X. (2017). Application of Multimodality to Teaching Reading. *English Language and Literature Studies, 7*(3), 78. <https://doi.org/10.5539/ells.v7n3p78>
- Barahona, M. A. (2014). Exploración del currículo de la formación inicial de profesores de segunda lengua en Chile: Un estudio de caso. *Perspectiva Educacional, 53*(2), 45–67. <https://doi.org/10.4151/07189729-Vol.53-Iss.2-Art.261>
- Becker, M., McElvany, N., & Kortenbruck, M. (2010). Intrinsic and extrinsic reading motivation as predictors of reading literacy: A longitudinal study. *Journal of Educational Psychology, 102*(4), 773–785. <https://doi.org/10.1037/a0020084>
- Bensoussan, M., & Kreindler, I. (1990). Improving advanced reading comprehension in a foreign language: Summaries vs. short-answer questions. *Journal of Research in Reading, 13*(1), 55–68. <https://doi.org/10.1111/j.1467-9817.1990.tb00322.x>
- Bergman, M. (2010). C. S. Peirce on Interpretation and Collateral Experience. *Signs - International Journal of Semiotics, 4*, 134–161.
- Bicen, H., & Beheshti, M. (2019). Assessing perceptions and evaluating achievements of ESL students with the usage of infographics in a flipped classroom learning environment. *Interactive Learning Environments, 30*(3), 498–526. <https://doi.org/10.1080/10494820.2019.1666285>
- Biria, R., & Mehrabi Boshraadi, A. (2014). The Efficacy of Multimodal vs. Print-Based Texts for Teaching Reading Comprehension skills to Iranian high School Third Graders. *International Journal of Language Learning and Applied Linguistics World, 5*, 365–380.
- Brown, H. D. (2004). *Language assessment: Principles and classroom practices*. Pearson/Longman.
- Carr, E., & Ogle, D. (1987). K-W-L Plus: A Strategy for Comprehension and Summarization. *Journal of Reading, 30*(7), 626–631.
- Carrell, P. L., Devine, J., & Eskey, D. E. (1988). *Interactive Approaches to Second Language Reading*. Cambridge University Press.

- Chan, E., & Unsworth, L. (2011). Image–language interaction in online reading environments: Challenges for students' reading comprehension. *The Australian Educational Researcher*, 38(2), 181–202. <https://doi.org/10.1007/s13384-011-0023-y>
- Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th edition). SAGE Publications, Inc.
- Cupita, L. A. L., & Franco, L. M. P. (2019). The Use of Infographics to Enhance Reading Comprehension Skills among Learners. *Colombian Applied Linguistics Journal*, 21(2), 230–242.
- Dabarera, C., Renandya, W. A., & Zhang, L. J. (2014). The impact of metacognitive scaffolding and monitoring on reading comprehension. *System*, 42, 462–473. <https://doi.org/10.1016/j.system.2013.12.020>
- Daly, A., & Unsworth, L. (2011). Analysis and comprehension of multimodal texts. *The Australian Journal of Language and Literacy*, 34(1), 61–80. <https://doi.org/10.1007/BF03651846>
- Danesi, M. (2000). *Semiotics in Language Education*. Berlin, Boston: De Gruyter Mouton. <https://doi.org/10.1515/9783110823080>
- Danesi, M. (2007). *The Quest for Meaning: A Guide to Theory and Practice in Semiotics*. Toronto: University of Toronto Press.
- Danesi, M. (2012). *Semiotics in Language Education*. Walter de Gruyter.
- Dijk, T. A. V., & Kintsch, W. (1983). *Strategies of Discourse Comprehension*.
- Dogancay-Aktuna, S., & Kiziltepe, Z. (2005). English in Turkey. *World Englishes*, 24(2), 253–265. <https://doi.org/10.1111/j.1467-971X.2005.00408.x>
- Dörnyei, Z. (2003). Attitudes, orientations, and motivations in language learning: Advances in theory, research, and applications. *Language Learning*, 53(S1), 3–32.
- Dörnyei, Z. (2007). *Research methods in applied linguistics*. Oxford University Press. <http://82.194.16.162:8080/xmlui/handle/123456789/573>
- Dreyer, C., & Nel, C. (2003). Teaching reading strategies and reading comprehension within a technology-enhanced learning environment. *System*, 31(3), 349–365.

[https://doi.org/10.1016/S0346-251X\(03\)00047-2](https://doi.org/10.1016/S0346-251X(03)00047-2)

Erten, I. H., & Razi, S. (2009). The Effects of Cultural Familiarity on Reading Comprehension. *Reading in a Foreign Language*, 21(1), 60–77.

Erton, Ä. (2006). Semiotic Nature of Language Teaching Methods in Foreign Language Learning and Teaching. *Journal of Language and Linguistic Studies*, 2(1), Article 1. <http://www.jlls.org/index.php/jlls/article/view/24>

Falk-Ross, F. (2014). *Language-Based Approaches to Support Reading Comprehension*. Rowman & Littlefield.

Farías, M., & Véliz, L. (2019). Multimodal Texts in Chilean English Teaching Education: Experiences From Educators and Pre-Service Teachers. *Profile Issues in Teachers' Professional Development*, 21(2), 13–27. <https://doi.org/10.15446/profile.v21n2.75172>

Farías, M., & Véliz, L. (2019). Multimodal Texts in Chilean English Teaching Education: Experiences From Educators and Pre-Service Teachers. *Profile Issues in Teachers' Professional Development*, 21(2), 13–27. <https://doi.org/10.15446/profile.v21n2.75172>

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. *American Psychologist*, 34(10), 906–911. <https://doi.org/10.1037/0003-066X.34.10.906>

Fraenkel, J. R., & Wallen, N. E. (2005). *How to Design and Evaluate Research in Education*. McGraw-Hill.

Ganapathy, M., & Seetharam, S. A. (2016). The Effects of Using Multimodal Approaches in Meaning-Making of 21st Century Literacy Texts among ESL Students in a Private School in Malaysia. *Advances in Language and Literary Studies*, 7(2), 143–155.

Griffith, P. L., & Ruan, J. (2005). What Is Metacognition and What Should Be Its Role in Literacy Instruction? In *Metacognition in Literacy Learning*. Routledge.

Groebel, L. (1980). A Comparison of Students' Reading Comprehension in the Native Language with Their Reading Comprehension in the Target Language. *ELT Journal*, XXXV(1), 54–59. <https://doi.org/10.1093/elt/XXXV.1.54>

Guillén, S., & Mar, M. del. (2021). *The effects of applying multimodality in oral comprehension*

- tasks in the English classroom of Batxillerat: Students' performance and attitudes.*  
<http://dspace.uvic.cat/xmlui/handle/10854/6863>
- HACETTEPE ÜNİVERSİTESİ - *İngilizce Öğretmenliği (104810274) | YÖK Lisans Atlası.* (n.d.-  
 a). Retrieved June 12, 2021, from <https://yokatlas.yok.gov.tr/lisans.php?y=104810274>
- Harrison, C. (2003). Visual Social Semiotics: Understanding How Still Images Make Meaning. *Technical Communication*, 50(1), 46–60.
- Heaton, J. B., Harmer, J., & Kingsbury, R. (1990). *Writing English language tests*. Longman.  
<https://www.longmanhomeusa.com/catalog/products/language-assessment-principles-and-classroom-practices/>
- Jewitt, C. (2005). Multimodality, “Reading”, and “Writing” for the 21st Century. *Discourse: Studies in the Cultural Politics of Education*, 26(3), 315–331.  
<https://doi.org/10.1080/01596300500200011>
- Jewitt, C. (2012). Multimodal Teaching and Learning. In *The Encyclopedia of Applied Linguistics*. American Cancer Society.  
<https://doi.org/10.1002/9781405198431.wbeal0815>
- Jewitt, C., Bezemer, J., & O'Halloran, K. (2016). *Introducing Multimodality*. Routledge.
- Karatza, S. (2020). Multimodal literacy and language testing: Visual and intersemiotic literacy indicators of reading comprehension texts. *Journal of Visual Literacy*, 39(3–4), 220–255. <https://doi.org/10.1080/1051144X.2020.1826222>
- Kasim, U., & Raisha, S. (2017). EFL students' reading comprehension problems: Linguistic and non-linguistic complexities. *English Education Journal*, 8(3), Article 3.
- Kong, N. (2011). Establishing a Comprehensive English Teaching Pattern Combining the Communicative Teaching Method and the Grammar-Translation Method. *English Language Teaching*, 4(1), 76–78.
- Kökçü, Y., & Demirel, Ş. (2020). A STUDY ON DEVELOPING A READING COMPREHENSION TEST. *European Journal of Education Studies*, 0, Article 0.  
<https://doi.org/10.46827/ejes.v0i0.3075>
- Kress, G., & Van Leeuwen, T. (2001). *Multimodal discourse: The modes and media of*

- contemporary communication*. London: Arnold Publishers.
- Kress, Gunther. 2001. Sociolinguistics and social semiotics. In Paul Cobley (ed.),
- Kress, J. B., Gunther. (2015). *Multimodality, Learning and Communication: A social semiotic frame*. Routledge. <https://doi.org/10.4324/9781315687537>
- Kumar, R. (2010). *Research Methodology: A Step-by-Step Guide for Beginners*. SAGE Publications.
- Language Assessment: Principles and Classroom Practices – Pearson ELT USA*. (n.d.). Retrieved September 5, 2021, from
- Larsen-Freeman, D., & Anderson, M. (2013). *Techniques and Principles in Language Teaching 3rd edition—Oxford Handbooks for Language Teachers*. Oxford University Press.
- Larson-Hall, J. (2009). *A Guide to Doing Statistics in Second Language Research Using SPSS* (0 ed.). Routledge. <https://doi.org/10.4324/9780203875964>
- Lee, H.-C. (2013). An Examination of ESL Taiwanese University Students' Multimodal Reading Responses. *Literacy Research and Instruction*, 52(3), 192–203. <https://doi.org/10.1080/19388071.2013.774449>
- Lier, L. van. (2004). *The Ecology and Semiotics of Language Learning: A Sociocultural Perspective*. Springer Netherlands. <https://doi.org/10.1007/1-4020-7912-5>
- Lin, J. (2018). Factors Related to EFL/ESL Learners' Reading Strategy Use: A Literature Review. *Chinese Journal of Applied Linguistics*, 42(1), 92.
- Liu, F. (2010). A Short Analysis of the Nature of Reading. *English Language Teaching*, 3(3).
- Liu, L.-Y., & Liu, P. (2015). *An Empirical Study on Multimodal Learning Mode in College English*. 244–249. <https://doi.org/10.2991/sschd-16.2016.49>
- Mackey, E. A., Gass, S. M., Dörnyei, Z., & Csizér, K. (2012). *Research Methods in Second Language Acquisition. A Practical Guide*.
- Manalu, T., & Wirza, Y. (2021). *Metacognitive Strategies by Low Achieving Students in Reading Multimodal Texts*. 600–605. <https://doi.org/10.2991/assehr.k.210427.091>
- McCarthy, M. (1996). The teaching of Shakespeare: A semiotic approach. *Irish Educational Studies*, 15(1), 221–236. <https://doi.org/10.1080/0332331960150118>

- McNamara, D. S., & Magliano, J. (2009). Chapter 9 Toward a Comprehensive Model of Comprehension. In *Psychology of Learning and Motivation* (Vol. 51, pp. 297–384). Academic Press. [https://doi.org/10.1016/S0079-7421\(09\)51009-2](https://doi.org/10.1016/S0079-7421(09)51009-2)
- McNamara, D. S., & Magliano, J. (2009b). Toward a comprehensive model of comprehension. In *The psychology of learning and motivation, Vol. 51* (pp. 297–384). Elsevier Academic Press. [https://doi.org/10.1016/S0079-7421\(09\)51009-2](https://doi.org/10.1016/S0079-7421(09)51009-2)
- Miki, M. H. (2020). *Investigating of Pre- Service Teavhers' Perception and Readiness to Digital Multimodal Literacy at Lakidende University*. <https://doi.org/10.21009/ijlecr.061.08>
- Mokhtari, K., & Reichard, C. A. (2002). Assessing students' metacognitive awareness of reading strategies. *Journal of Educational Psychology, 94*(2), 249–259. <https://doi.org/10.1037/0022-0663.94.2.249>
- Monika, M., & V, A. D. (2022). A Systematic Review on the Effectiveness of Metacognitive Strategies and Multimodal Tools in Blended Learning English Language Classroom. *Theory and Practice in Language Studies, 12*(11), Article 11. <https://doi.org/10.17507/tpis.1211.03>
- Moreno, R., & Mayer, R. (2007). Interactive Multimodal Learning Environments: Special Issue on Interactive Learning Environments: Contemporary Issues and Trends. *Educational Psychology Review, 19*(3), 309–326. <https://doi.org/10.1007/s10648-007-9047-2>
- Nan, C. (2018). Implications of Interrelationship among Four Language Skills for High School English Teaching. *Journal of Language Teaching and Research, 9*(2), 418. <https://doi.org/10.17507/jltr.0902.26>
- Nan, C. (2018). Implications of Interrelationship among Four Language Skills for High School English Teaching. *Journal of Language Teaching and Research, 9*(2), 418. <https://doi.org/10.17507/jltr.0902.26>
- National Park Service. (2009, October 27). *Ellis Island*. HISTORY. Retrieved August 28, 2022, from <https://www.history.com/topics/immigration/ellis-island>
- Neisser, U. (1964). Visual search. *Scientific American, 210*(6), 94–102. <https://doi.org/10.1038/scientificamerican0664-94>



- Ntelioglou, B. Y., Fannin, J., Montanera, M., & Cummins, J. (2014). A multilingual and multimodal approach to literacy teaching and learning in urban education: A collaborative inquiry project in an inner city elementary school. *Frontiers in Psychology*, 5. <https://doi.org/10.3389/fpsyg.2014.00533>
- Özdemir Ç., E., & Akyol, H. (2019). The Development of a Reading Comprehension Test. *Universal Journal of Educational Research*, 7(2), 563–570. <https://doi.org/10.13189/ujer.2019.070229>
- Pan, X., & Zhang, Z. (2020). An Empirical Study of Application of Multimodal Approach to Teaching Reading in EFL in Senior High School. *International Journal of Emerging Technologies in Learning (iJET)*, 15(2), 98–111.
- Pang, E. S., Muaka, A., Bernhardt, E. B., & Kamil, M. L. (2003). *Teaching reading*.
- Pardo, L. S. (2004). What Every Teacher Needs to Know About Comprehension. *The Reading Teacher*, 58(3), 272–280. <https://doi.org/10.1598/RT.58.3.5>
- PISA 2018 Results (Volume I): What Students Know and Can Do*. (n.d.). [Text]. Retrieved September 4, 2021, from [https://www.oecd-ilibrary.org/education/pisa-2018-results-volume-i\\_5f07c754-en](https://www.oecd-ilibrary.org/education/pisa-2018-results-volume-i_5f07c754-en)
- Pourhosein Gilakjani, A., & Sabouri, N. (2016). How Can Students Improve Their Reading Comprehension Skill? *Journal of Studies in Education*, 6, 229. <https://doi.org/10.5296/jse.v6i2.9201>
- Price C. P., & Rajiv S. J., & I-Chant A. C., & Dana C. L., & Carrie C. *Research Methods in Psychology – Simple Book Publishing*. (n.d.). Retrieved January 23, 2024, from <https://opentext.wsu.edu/carriecuttler/>
- Programs, H. D. (n.d.-a). *Ellis Island | Virtual Tour by Heritage Documentation Programs*. Retrieved September 2, 2021, from [https://www.nps.gov/hdp/exhibits/ellis/Ellis\\_Index.html?html5=prefer](https://www.nps.gov/hdp/exhibits/ellis/Ellis_Index.html?html5=prefer)
- Publications—PISA*. (n.d.-b). Retrieved September 4, 2021, from <https://www.oecd.org/pisa/publications/pisa-2018-results-volume-iii-acd78851-en.htm>
- Putra, K. M. (2021). The use of infographics to enhance EFL students reading interest. *Journal*

- of Educational Study*, 1(1), 60-66.
- Rossiana, Y. (2010). The Effects of Jigsaw and GTM on the Reading Comprehension Achievement of the Second Grade of Senior High School Students. *Magister Scientiae*, 27, 87–95. <https://doi.org/10.33508/mgs.v0i27.647>
- Royce, T. D., & Bowcher, W. L. (2007). *New Directions in the Analysis of Multimodal Discourse*. Psychology Press.
- Rumelhart, D. E. (1985). *Toward an Interactive Model of Reading*.
- Sankey, M., Birch, D., & Gardiner, M. (2010). Engaging students through multimodal learning environments: The journey continues. In C. Steel, M. Keppell, P. Gerbic, & S. Housego (Eds.), *Proceedings ASCILITE 2010: 27th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education: Curriculum, Technology and Transformation for an Unknown Future* (pp. 852–863). University of Queensland. <http://ascilite.org.au/conferences/sydney10/Ascilite%20conference%20proceedings%202010/Sankey-full.pdf>
- Schmitt, N., & Rodgers, M. P. H. (2019). *An Introduction to Applied Linguistics*. Routledge.
- Scollon, R., & Scollon, S. W. (2003). *Discourses in Place: Language in the Material World*. Routledge.
- Semetsky, I. (2010). Semiotics Education Experience. <https://doi.org/10.1163/9789460912252>
- Serafini, F. (2013). *Reading the Visual: An Introduction to Teaching Multimodal Literacy* (Illustrated edition). Teachers College Press.
- Sert, O. (2006). Semiotic approach and its contributions to English language learning and teaching. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 31(31), Article 31.
- Siegel, M. (2012). New Times for Multimodality? Confronting the Accountability Culture. *Journal of Adolescent & Adult Literacy*, 55(8), 671–681. <https://doi.org/10.1002/JAAL.00082>
- Snow, C. (2002). *Reading for Understanding: Toward an R&D Program in Reading Comprehension*. RAND Corporation. [https://www.rand.org/pubs/monograph\\_reports/MR1465.html](https://www.rand.org/pubs/monograph_reports/MR1465.html)

- Solak, E. (2016). *Teaching Listening Skills* (pp. 29–44).
- Sornkeaw, J. (2021). The Effects of Using KWL-Plus Strategy through Infographics on Thai EFL Students' Reading Comprehension Skills: The Effects of Using KWL-Plus Strategy through Infographics on Thai EFL Students' Reading Comprehension Skills. *SOCIAL SCIENCES RESEARCH AND ACADEMIC JOURNAL*, 16(3), Article 3.
- Soto, C., Gutiérrez de Blume, A. P., Jacovina, M., McNamara, D., Benson, N., & Riffo, B. (2019). Reading comprehension and metacognition: The importance of inferential skills. *Cogent Education*, 6(1), 1565067. <https://doi.org/10.1080/2331186X.2019.1565067>
- Stanovich, K. E. (1980). Toward an Interactive-Compensatory Model of Individual Differences in the Development of Reading Fluency. *Reading Research Quarterly*, 16(1), 32–71.
- Su, Y. (2009). *A Case Study of How a Kindergarten Teacher Incorporates Multiple Semiotic Systems in Her Classroom Instruction*.
- Şenel, M. (2007). The Semiotic Approach and Language Teaching and Learning. *Journal of Language and Linguistic Studies*, 3(1), Article 1.
- The New London Group. (1996). A Pedagogy of Multiliteracies: Designing Social Futures. *Harvard Educational Review*, 66(1), 60–93. <https://doi.org/10.17763/haer.66.1.17370n67v22j160u>
- The New London Group. (2010). A Pedagogy of Multiliteracies: Designing Social Futures. *Harvard Educational Review*, 66(1), 60–93. <https://doi.org/10.17763/haer.66.1.17370n67v22j160u>
- The Routledge companion to semiotics and linguistics*, 66–82. London: Routledge.
- Thorndike, E. L. (1917). Reading as reasoning: A study of mistakes in paragraph reading. *Journal of Educational Psychology*, 8(6), 323–332. <https://doi.org/10.1037/h0075325>
- Unsworth, L. (2008). *Multimodal Semiotics: Functional Analysis in Contexts of Education*. Bloomsbury Publishing.
- Unsworth, L. (2014). Multimodal reading comprehension: Curriculum expectations and large-scale literacy testing practices. *Pedagogies: An International Journal*, 9(1), 26–44.

<https://doi.org/10.1080/1554480X.2014.878968>

- Unsworth, L., & Chan, E. (2009). Bridging multimodal literacies and national assessment programs in literacy. *The Australian Journal of Language and Literacy*, 32(3), 245–257. <https://doi.org/10.1007/BF03651812>
- Varaporn, S., & Sitthitikul, P. (2019). *Effects of multimodal tasks on students' critical reading ability and perceptions*. 31(1), 81–108.
- Weninger, C., & Kiss, T. (2013). Culture in English as a Foreign Language (EFL) Textbooks: A Semiotic Approach. *TESOL Quarterly*, 47(4), 694–716. <https://doi.org/10.1002/tesq.87>
- Yilmaz, C. (2012). An Investigation into Turkish EFL Students". *Journal of Language Teaching and Research*, 3(5), 823–828. <https://doi.org/10.4304/jltr.3.5.823-828>
- Yimwilai, S. (2019). Increasing EFL Students' English Reading Ability and Engagement through Multimodal Learning Environments. *Humanities and Social Sciences Journal of Pibulsongkram Rajabhat University*, 13(2), Article 2.
- Yurko, N., & Protsenko, U. (2020). READING COMPREHENSION: THE SIGNIFICANCE, FEATURES AND STRATEGIES. *COLLECTIVE MONOGRAPHS*, 106–114. <https://doi.org/10.36074/rodmrffssn.ed-1.10>
- Zabitgil Gülseren, Ö. (2019). *Revisiting the Classical Method in Language Education: Grammar Translation Method (Gtm)* (pp. 336–344). <https://doi.org/10.5281/zenodo.4603663>
- Zhang, L. J. (2010). Awareness in Reading: EFL Students' Metacognitive Knowledge of Reading Strategies in an Acquisition-poor Environment. *Language Awareness*, 10(4), 268–288. <https://doi.org/10.1080/09658410108667039>

## **APPENDIX-A: Informed Consent Form**

I kindly invite you to participate in a study which intends to investigate the impact of Multimodal Semiotic Approach (MSA) on reading comprehension of English Language Teaching (ELT) students in Turkish context through a quasi-experimental and a survey design. Firstly, a posttest-only with nonequivalent groups research design in which a reading comprehension test is administered to the participants will be conducted. A pilot study will be carried out to establish the reliability and the validity of the reading comprehension test which the researcher herself has developed and will be used for the posttest, and then a survey will be conducted on the participants who have attended the experimental phase of this research in order to discover their attitudes towards MSA and the relationship between their metacognitive awareness of reading strategies and their reading comprehension levels. In the survey, there are Likert type items for both the attitudes and the metacognitive awareness of reading strategies. The data that the participants will provide is valuable to ELT and English as a foreign language (EFL) field in that the implications regarding the teaching reading practices for English language will be obtained with the contributions of the participants who are prospective English language teachers receiving education in EFL context.

This research is being conducted by Suna Yerdelen, a master's degree student in English Language Teaching department at Hacettepe University, under the guidance of the thesis supervisor, Prof. Dr. Nuray Alagözülü. The permission has been obtained from Hacettepe University Ethics Commission to conduct this research. The requirements to participate in this research are being a native speaker of Turkish, using English as a foreign language, and being an undergraduate student studying in English Language Teaching department at a Turkish University.

I assure that the participation in this research is absolutely on voluntary basis. The participants may quit the reading comprehension tests and the survey whenever they want. Withdrawing from the research will not bring any responsibilities. Online test takers and survey

respondents have to answer each test and survey item to provide a complete data set for the research, yet they may leave the test and survey at any time without completing them. An invitation link will be sent to the potential participants who meet the above-mentioned requirements so that they can participate in the research by taking the tests and filling out the survey. In the posttest, there will be twenty (20) multiple-choice reading comprehension test items and then, the participants will be given the survey that includes two sections. First section is comprised of eight (8) Likert type items which are related to attitudes towards MSA and for which the participants are required to choose to what degree they agree with the statements in the items. Second section comprises the Metacognitive Awareness of Reading Strategies Inventory (MARS) which has thirty (30) items.

This research does not have the potential to expose the participants to any kind of known risks. By conforming this informed consent, you have not renounced your rights to legal recourse in case that you get harmed due to the participation to this research project.

There will be no direct benefit to the participants for their participation in this study. However, the information obtained from them for this study may benefit the ELT and EFL fields by having them gained new insights into reading instruction.

The privacy and the confidentiality of the participants will be protected from beginning to end of this research. The electronic data collected through this online survey will be stored on the password-protected Google account of the investigator with the help of Google Forms application. Before taking the test, the participants are required to provide personally identifiable information such as their names, surnames, grades, and sections, etc. To maintain confidentiality, code numbers will be used to label the data instead of using names, and a separate list of code-to-name match-ups will be kept.

If you may have any questions related to this research, please do not hesitate to get in contact with the investigator whose contact information provided below. This informed consent form introduces the research that you are invited to take part in. At any time during this research

as well as after the research, you may ask your questions about it. Please read this informed consent form carefully and if you consent to participate in it, you need to click the buttons next to the consent statements below. Also, you can find the contact information of the investigator as follows:

- **Date:**

- **Participant's:**

**Name and Surname:**

**Address:**

**Telephone Number:**

**Signature:**

- **Researcher's:**

**Name and Surname:** Suna YERDELEN

**Signature:**

- **Thesis Supervisor's:**

**Name and Surname:** Nuray ALAGÖZLÜ

**Signature:**

## APPENDIX-B: Gönüllü Katılım Formu

Sizleri Çok Modlu Göstergibilimsel Yaklaşımın (ÇMGY) İngiliz Dili Eğitimi (İDE) öğrencilerinin okuduğunu anlaması üzerindeki etkisini Türkiye bağlamında yarı deneysel tasarım ve anket tasarımıyla incelemeyi amaçlayan bir araştırmaya katılmaya davet ediyorum. Öncelikle katılımcılara bir okuma anlama testinin verildiği bir karşılaştırmalı eşitlenmemiş grup son test modeli uygulanacaktır. Son test için kullanılacak, araştırmacının kendisinin geliştirdiği okuduğunu anlama testinin güvenilirlik ve geçerliliğini belirlemek için bir pilot çalışma yapılacaktır. Daha sonra bu araştırmanın deneysel aşamasına katılan katılımcılara ÇMGY'ye yönelik tutumlarını ve okuma stratejilerine ilişkin üstbilişsel farkındalıkları ile okuduğunu anlama düzeyleri arasındaki ilişkiyi keşfetmek için bir anket uygulanacaktır. Ankette; hem tutumlar için hem de okuma stratejilerine ilişkin üstbilişsel farkındalıklar için Likert tipi maddeler bulunmaktadır. İngilizce okuma öğretimi uygulamalarına ilişkin çıkarımlar, İngilizcenin yabancı dil olarak kullanıldığı bir bağlamda eğitim alan İngilizce öğretmeni adaylarının katkılarıyla elde edileceği için katılımcıların sağlayacağı veriler İngilizce öğretimi ve Yabancı Dil Olarak İngilizce (EFL) alanı için değerlidir.

Bu araştırma tez danışmanı Prof. Dr. Nuray Alagozlu rehberliğinde, Hacettepe Üniversitesi İngiliz Dili Eğitimi Bölümünde yüksek lisans öğrencisi olan Suna Yerdelen tarafından yürütülmektedir. Bu araştırmanın yapılabilmesi için Hacettepe Üniversitesi Etik Komisyonundan izin alınmıştır. Bu araştırmaya katılım koşulları ana dilin Türkçe olması, İngilizcenin yabancı dil olarak kullanmak ve bir Türk Üniversitesinde İngiliz Dili Eğitimi Bölümünde lisans öğrencisi olmaktır.

Bu araştırmaya katılımın kesinlikle gönüllülük esasına dayalı olduğunu temin ederim. Katılımcılar okuduğunu anlama testlerini ve anketi istedikleri zaman bırakabilirler. Araştırmadan çekilmek herhangi bir sorumluluk getirmeyecektir. Çevrimiçi sınava girenler ve



ankete katılanlar, arařtırmaya eksiksiz bir veri seti saęlamak için her test ve anket maddesini yanıtlamak zorundadır, ancak istedikleri zaman testi ve anketi tamamlamadan bırakabilirler. Yukarıda belirtilen řartları saęlayan potansiyel katılımcılara davet linki gönderilecektir. Böylece testleri çözerek ve anketi doldurarak arařtırmaya katılabilecekler. Son testte yirmi (20) çoktan seçmeli okuduęunu anlama test maddesi bulunacak ve son olarak katılımcılara, iki bölümden oluşan bir anket verilecektir. Birinci bölüm, ÇMGY'ye yönelik tutumlarla ilgili sekiz (8) Likert tipi maddeden oluşmaktadır ve katılımcıların verilen ifadelere ne derecede katıldıklarını belirtmeleri gerekmektedir. İkinci bölüm, içerisinde otuz (30) madde bulunan Okuma Stratejileri Üstbilişsel Farkındalık Envanteri'nden (MARSI) oluşmaktadır.

Bu arařtırma, katılımcıları bilinen herhangi bir riske maruz bırakma potansiyeline sahip değildir. Bu gönüllü katılım formunu onaylamakla, bu arařtırma projesine katılımınız nedeniyle zarar görmeniz durumunda hukuki başvuru hakkınızdan vazgeçmemiş olursunuz.

Katılımcılara bu çalışmaya katılmalarının doğrudan bir faydası olmayacaktır ancak bu çalışma için onlardan elde edilen bilgiler, okuma öğretilimi konusunda İngiliz Dili Eğitimi (ELT) ve Yabancı Dil Olarak İngilizce (EFL) alanlarına yeni anlayışlar kazandırarak fayda sağlayabilir.

Bu arařtırmanın başından sonuna kadar katılımcıların kişisel bilgileri ve verileri korunacaktır. Bu çevrimiçi anket aracılığıyla toplanan elektronik veriler, Google Forms uygulaması yardımıyla arařtırmacının şifre korumalı Google hesabında saklanacaktır. Testi çözmeden önce katılımcıların adları, soyadları, notları ve şubeleri gibi kişiyi tanımlamak için kullanılan bilgileri saęlamaları gerekmektedir. Gizlilięi korumak amacıyla, verileri etiketlemek için isim kullanmak yerine kod numaraları kullanılacak ve kodlar ile isimler arası eşleşmelerin ayrı bir listesi tutulacaktır.

Bu arařtırmayla ilgili herhangi bir sorunuz olursa, lütfen ařađıda iletiřim bilgileri verilen arařtırmacı ile iletiřim kurmaktan çekinmeyin. Bu arařtırma sırasında ve arařtırma sonrasında herhangi bir zamanda, arařtırma ile ilgili sorularınızı sorabilirsiniz. Lütfen bu gönüllü katılım formunu dikkatlice okuyun ve arařtırmaya katılmayı kabul ediyorsanız, ařađıdaki onay ifadelerinin yanındaki düğmeleri tıklamanız gerekmektedir. Ayrıca, arařtırmacının iletiřim bilgilerini ařađıdaki gibi bulabilirsiniz:

- **Tarih:**

- **Katılımcı:**

**Adı, soyadı:**

**Adres:**

**Tel:**

**İmza:**

- **Arařtırmacı:**

**Adı, soyadı:** Suna YERDELEN

**İmza:**

- **Tez Danıřmanı:**

**Adı, soyadı:** Nuray ALAGÖZLÜ

**İmza:**

## APPENDIX- C: Reading Comprehension Post-test Items

### Reading Comprehension: Multimodal Semiotic Approach, Attitudes and Metacognitive Awareness Post-test

This online reading comprehension test is being shared in support of master's thesis research being conducted by Suna Yerdelen who is a M.A. student at Hacettepe University.

sunayerdelen18@gmail.com [Hesap deęiřtir](#)



\* Gerekli

E-posta \*

E-posta adresiniz

What is your name? \*

Yanıtınız

What is your surname? \*

Yanıtınız

What is your gender? \*

Female

Male

How old are you? \*

- 18-20
- 20-22
- 22-24
- 24+

At which university do you study? \*

Yanıtınız \_\_\_\_\_

What is your grade? \*

- 1st Year (Freshman)
- 2nd Year (Sophomore)
- 3rd Year (Junior)
- 4th Year (Senior)

What is your section/group? (Şubeniz nedir?) \*

Yanıtınız \_\_\_\_\_

Please choose the score interval that contains your GPA (Grade Point Average). \*

- 1,75 - 2,00
- 2,00 - 2,25
- 2,25 - 2,50
- 2,50 - 2,75
- 2,75 - 3,00
- 3,00 - 3,25
- 3,25 - 3,50
- 3,50 - 3,75
- 3,75 - 4,00

How long have you been learning English as a foreign language? \*

- 0-3 years
- 3-6 years
- 6-9 years
- 9-12 years
- 12+ years

Please choose the relevant option if you have an available result for the following English language proficiency exams (If you have more than one result, consider the latest exam you took). If not, choose the option None.

What is your TOEFL iBT score? \*

- None
- 114 - 120
- 108 - 114
- 102 - 108
- 96 - 102
- 90 - 96
- 84 - 90
- 78 - 84
- 72 - 78
- 66 - 72
- 60 - 66
- 54 - 60
- 48 - 54
- 0 - 48

What is your YDS/YÖKDİL score? \*

- None
- 90 - 100
- 80 - 89
- 70 - 79
- 60 - 69
- 50 - 59
- 0 - 49

Sonraki

Formu temizle

## READING COMPREHENSION TEST

-This test includes 30 paragraph questions related to Ellis Island. Please answer the questions according to the given paragraphs and DO NOT EXCEED THE 60-MINUTE TIME LIMIT.

-The paragraphs have been taken from <http://teacher.scholastic.com/activities/immigration/tour/stop1.htm> and all rights are reserved to Scholastic Inc.

### 1st STOP: THE PASSAGE

Most of the immigrants who came to America through Ellis Island were from eastern and southern Europe. In many cases, they came to escape the poverty and religious intolerance that existed in small towns in countries such as Italy, Poland, and Russia. They began their journey to America on foot, horseback, or train. Many trekked hundreds of miles across Europe to get to a seaport. When they arrived at the coast, they boarded a steamship. The trip across the Atlantic Ocean lasted one to two weeks. The ships divided passengers by wealth and class. First- and second-class passengers stayed in staterooms and cabins. But most people were in third class, called "steerage." Steerage was a large, open space at the bottom of the ship. As many as 3,000 people crowded the ships. They often came from different countries, spoke different languages, and belonged to different religions.

PLEASE ANSWER THE QUESTIONS 1,2 AND 3 ACCORDING TO THE READING PARAGRAPH WITH THE TITLE "1st STOP: THE PASSAGE"

1. It is understood from the passage that, by going aboard steamships, the \* 5 puan  
people who ----.

- were from different regions of eastern and southern Europe, left their homeland to dwell in America so that they would run away from the racism they had experienced in their homeland
- came from countries located in both east and south of Europe and believed in the same religion, set out to explore new places in America for missionary activities
- were from various European countries, went to America to live there permanently so that they would flee from poor economic conditions and religious discrimination in their home country
- were impoverished Europeans, traveled to America in the hope of finding a new job and a little town to have a prosperous future
- came from western countries such as Poland, Italy and Russia, and were polyglots, went to America with the intention of providing aid for poor residents of Ellis Island

2. One can conclude from the passage that ----. \*

5 puan

- Italy, Poland, and Russia were among the European countries which were trying to dispel prejudice against the immigrants coming from America and the people believing in different religions
- the immigrants coming from Europe had to cross the Atlantic Ocean to arrive in America and the sea voyage took at least two weeks through steamships unless there were adverse weather conditions
- America offered many job opportunities for the immigrants and allowed those who could speak English to reside in particular places of the country such as Ellis Island
- steamships could carry more than 3000 passengers with their extremely spacious steerage and cabins
- the immigrants experienced a discrimination based on their economic status during the sea voyage besides the discrimination in their homeland which was against the religions they believed in

3. As can be understood from the passage, the word "immigrant" means ---- \* 5 puan

- somebody who moves from country of origin to another country in order to reside in there
- a person who comes to a different country in order to live there permanently
- someone who is responsible for the safety of a ship
- anybody who travels in a vehicle, or on a ship, train, or plane
- a health officer who checks the health conditions of the passengers before they enter a country



### 2nd STOP: THE ARRIVAL

The trip across the Atlantic Ocean was rough. The ships were crowded and dirty. So most passengers were very tired when they arrived in New York Harbor. One of the first things they saw was the Statue of Liberty, which has stood on its own island in the harbor since 1886. People would cheer when they spotted this famous symbol of America. Some would weep with joy as the ship passed by it. Health officers would board the ship in the harbor and look for signs of diseases. If the ship passed their inspection, doctors then would check the health of first- and second-class passengers on the ship. These lucky few were processed quickly and could leave the ship when it docked at New York City. But third-class passengers often would wait for hours or days until a smaller ferryboat took them to Ellis Island for immigration processing.

PLEASE ANSWER THE QUESTIONS 4,5 AND 6 ACCORDING TO THE READING PARAGRAPH WITH THE TITLE "2nd STOP: THE ARRIVAL"

4. According to the passage, which of the following is certainly true about the Statue of Liberty? \* 5 puan

- The passengers picked up bad smells while the ship was passing by the Statue of Liberty due to its filthy surrounding.
- The statue was built in 1886 and it became an icon of freedom in the same year.
- The immigration processing was made on the island where the Statue of Liberty was located.
- The statue is a well-known symbol of the United States and situated on an island in New York Harbor.
- The Statue of Liberty would illuminate the sea to guide the ships into the harbor at nights.

5. From the immigration processing, which the passengers were subjected to, told in the passage, it becomes clear that ---. \* 5 puan

- If no diseases had been detected in the passengers during the health inspection, all of them could have been processed at once regardless of their class
- when the health officers diagnosed a disease in the passengers, they were quarantined on the island where the Statue of Liberty stood
- the doctors would decide whether the passengers had to wait on the ship or not according to their health condition before the immigration processing
- there was no discrimination in the immigration processing on the grounds of the class of the passengers
- class discrimination was made against the third-class passengers during the immigration processing

6. Which of the following can be inferred from the passage? \*

5 puan

- People used to have negative feeling about the Statue of Liberty.
- Health workers treated only the first-class passengers in a hospitable way during the health inspection.
- Third-class passengers were not subjected to the health inspection.
- The appearance of the Statue of Liberty was a sign indicating that the ships were close to New York Harbor.
- The passengers were pleased with the voyage from Europe to America.

### 3rd STOP: THE ELLIS ISLAND BAGGAGE ROOM

Officers wearing uniforms greeted the ferryboat as it docked at Ellis Island. They shouted and motioned to the passengers to walk down the gangplank to the main building. The officers passed out numbered identity tags. The people who did not speak English were often unsure what the officers were saying. The commotion was overwhelming. Men, women, and children struggled off the boat carrying trunks, cloth sacks, and suitcases. They followed one another along a path and entered the imposing red brick building. Wearing their numbered tags, the immigrants entered the Baggage Room on the building's ground floor. They left their precious belongings here until their inspection was done. Next, the immigrants went up stairs to the Registry Room. That is where the medical and legal inspections took place.

PLEASE ANSWER THE QUESTIONS 7,8 AND 9 ACCORDING TO THE READING PARAGRAPH WITH THE TITLE "3rd STOP: THE ELLIS ISLAND BAGGAGE ROOM"

7. As one learns from the passage, the officers ----. \*

5 puan

- threatened the passengers to push them down from the gangplank if they did not follow the instructions
- could speak the mother languages of the passengers, so the passengers did not have to know how to speak English to understand them
- showed the building plan to the passengers before taking them to there so that they would not get lost
- warned the passengers about the danger of the red brick building's collapse, and told them to be careful about its falling bricks after they went into it
- gave the passengers instructions in English to get the main building, yet some of the passengers could not understand them as they did not speak English

8. Which of the following is true about the inspections? \*

5 puan

- For their health and legal inspections to be made, the immigrants climbed up stairs to the Registry Room.
- The immigrants were supposed to keep their valuable belongings in with them until their medical and legal inspections were completed.
- The immigrants should have handed in their numbered identity tags to the officers in the Baggage Room before the inspections were made.
- The health inspection took place in the Baggage Room while the legal inspection was made in the Registry Room.
- Both the medical and legal inspections were done on the ground floor of the red brick building.

9. Which of the following can be concluded from the passage? \*

5 puan

- The passengers were welcomed by the officers in a serene environment.
- The immigrants were so poor that they did not have any valuable belongings to carry with them.
- The red brick building into which the immigrants went for the inspections to be made was multistorey.
- A large ship carrying luggage brought the passengers to Ellis Island.
- The ferryboat had enough capacity for only the baggage to carry.

#### 4th STOP: THE STAIRS TO THE REGISTRY ROOM

The immigration process began on the winding stairs that led to the Registry Room. Doctors stood on the second floor and watched each person. They looked for people who had trouble walking or breathing or showed signs of other health problems.

PLEASE ANSWER THE QUESTIONS 10 AND 11 ACCORDING TO THE READING PARAGRAPH WITH THE TITLE "4th STOP: THE STAIRS TO THE REGISTRY ROOM"

10. Which of the following can be true about the immigration process? \* 5 puan

- The doctors diagnosed lung diseases in most of the immigrants after recognizing them breathing hard.
- That the immigrants went up the stairs was a part of the health inspection made for the immigration process.
- The doctors were standing by on the second floor in case the immigrants felt faint while going up the stairs.
- The immigrants having some physical disabilities were accompanied by the doctors as they were going up the stairs.
- The immigrants who entered the Registry Room had great difficulty inhaling since the room was poorly-ventilated.

11. It is pointed out in the passage that the stairs ---. \* 5 puan

- were the place where the immigration processing was terminated after the immigrants came back from the Registry Room
- caused the immigrants to have ache in their legs, and so they were barely able to walk to the Registry Room
- were making a crackling noise because of the weight of the immigrants who were using them to go up
- to the Registry Room were few, and thus the immigrants did not get tired while going up them
- leading the immigrants to the Registry Room were the starting point of the immigration process

### 5th STOP: THE REGISTRY ROOM

The Registry Room was nicknamed the Great Hall because it is so big. The large rectangular room is 200 feet long and 102 feet wide. Many immigrants had never seen such a large indoor space. The waiting area in the Great Hall had long metal rails that helped maintain an orderly line as people went through the medical and legal inspections. Wooden benches were added in 1903. The noise in this room could be intense. The sounds of thousands of voices bounced off the vaulted ceilings. Officials in the Great Hall decided whether each person could enter the country right away or whether that person's case required further review. From 1903 to 1914, immigrants were checked for trachoma, a contagious eye disease. Doctors used a tool called a buttonhook to lift a person's eyelid to look for the disease. The buttonhook was a well-known and feared part of the immigration process. People with trachoma were often sent back to their home countries.

PLEASE ANSWER THE QUESTIONS 12-16 ACCORDING TO THE READING PARAGRAPH WITH THE TITLE "5th STOP: THE REGISTRY ROOM"

12. What is the main purpose of the author? \*

5 puan

- To inform readers about the structural characteristics of the Registry Room and the immigration processing taking place in the room
- To point out the oppression that the immigrants experienced during trachoma screening and the legal inspections
- To catch the attention of historians to enlighten the incidents which happened between 1903 and 1914
- To introduce an ancient building the name of which is the Great Hall and emphasize its reputation among the immigrants in 1900's
- To indicate that the Registry Room was risky for the immigrants to wait in line as some of them had an infectious eye disease named trachoma

13. Which of the following can be said about the Great Hall? \*

5 puan

- It was designed in a way that could host as many as a thousand immigrants.
- Its sound insulation was installed with the materials of high quality.
- It became famous for its magnificent ceiling with fancy vaults.
- Its actual name was the Registry Room, but it was later named after its dimension.
- It was used as a jail in which the condemned immigrants were put.

14. The scary part of the immigration process is that ----. \*

5 puan

- the doctors did not care for the immigrants with trachoma and left them dead
- the doctors accidentally scratched some of the immigrants' eyes out while using the buttonhooks
- the doctors used a hooky medical instrument named as buttonhook for trachoma examination
- the immigrants who were infected with trachoma had to go back to their homeland
- the rate of trachoma spread accelerated among the immigrants waiting in the Great Hall

15. What can be understood about the metal rails in the Great Hall? \*

5 puan

- They hampered the immigrants from getting in the line and caused them to get reprimanded by the officials.
- Thanks to them, the immigrants could queue up in an organized manner to wait for the inspections.
- They were built in the Great Hall long after the wooden benches were placed in there.
- Their length was 200 feet and the length between two rails was 102 feet.
- Because of them, the noise in the Great Hall echoed and became intense.

16. The original name of the Great Hall was the Registry Room because ----. \* 5 puan

- the doctors would record the patients into the system in that room
- it was the place where the immigrant children were registered to a school
- the officials would keep a record of the goods approved by customs there
- the decision on which immigrants could live in America was made by the officials in it
- the officials would detain lonely immigrant women and put their names on register there

### 6th STOP: THE MEDICAL EXAM

The doctors at Ellis Island developed a system to identify immigrants who needed medical attention. The first test was a "six-second physical." A uniformed doctor looked for any signs of illness or contagious diseases. The doctor noted whether the immigrants limped or were short of breath, if their eyes were red, if they acted disturbed or seemed otherwise abnormal. If someone was considered a risk to the public health, his or her clothes were marked by a piece of chalk with an identifying letter. An "X" denoted insanity. A "P" denoted pulmonary (lung) problems. Immigrants who were marked were taken out of the line and kept for further examination. Immigrants who passed the six-second exam continued through the maze of metal rails toward the far end of the hall for the legal inspection.

PLEASE ANSWER THE QUESTIONS 17-19 ACCORDING TO THE READING PARAGRAPH WITH THE TITLE "6th STOP: THE MEDICAL EXAM"

17. The point is made in the passage that, during the medical inspection, -- \* 5 puan

- the doctors classified the immigrants' diseases after making diagnoses of them
- many doctors were indifferent to the immigrants who were suffering from mental illnesses
- the immigrants underwent a medical examination which lasted for six minutes
- the immigrants had to go through a labyrinth for their medical inspection to be done
- the doctors put an "X" mark on the clothing of the immigrants who required further legal inspection

18. It is clear from the passage that a "six-second physical" refers to ---. \* 5 puan

- a uniformed doctor who was responsible for relieving the symptoms of contagious diseases
- the maze which was made of metal rails and led to the other end of the hall
- the immigrants who had a mental, pulmonary, or contagious disease
- the initial part of the medical examination in which a doctor was detecting health problems
- the immigrants who were urgently in need of medical assistance

19. What was done if an immigrant was reckoned as a threat to the public health? \* 5 puan

- All his or her belongings including clothes were destroyed.
- He or she was immediately sent back to his or her homeland.
- He or she was marked for further medical inspection.
- He or she was put on trial for threatening the public health.
- He or she was sent to Ellis Island hospital for a month-long medical care.

#### 7th STOP: THE LEGAL INSPECTION

Each arriving steamship's crew gave officials at Ellis Island a list of names of the passengers onboard. The manifest, as this list was called, had the name and a description of each passenger. One by one, the passengers were called forward to speak with a uniformed inspector seated on a tall stool behind a high desk. Interpreters helped the immigrants communicate. Twenty-nine questions were asked of every immigrant. They included: Where were you born? Are you married? What is your occupation? Have you ever been convicted of a crime? How much money do you have? What is your destination? An immigrant could be detained for further inquiry if his or her answers differed from the answers listed on the manifest.

PLEASE ANSWER THE QUESTIONS 20-22 ACCORDING TO THE READING PARAGRAPH WITH THE TITLE "7th STOP: THE LEGAL INSPECTION "

20. By addressing questions to the immigrants such as "What is your occupation?", "Have you ever been convicted of a crime?"; what could be the primary purpose of the inspector? \* 5 puan

- To make the immigrants confused so that they would be detained for further investigation
- To discriminate against the immigrants based on their income level and criminal past
- To suggest the residential areas that would be suitable for the personal status of the immigrants
- To find jobs in United States that the immigrants could do
- To decide whether further investigation was necessary for an immigrant or not



21. What does "the manifest" refer to in the passage? \*

5 puan

- The person who translated the languages the immigrants spoke into English
- The officer who interrogated the immigrants about the details of their lives
- The name of the steamship which brought the immigrants to Ellis Island
- A record of the immigrants' names and the information on their lives
- A crime that some of the immigrants had been convicted of before

22. What could be inferred about the legal inspection process? \*

5 puan

- The occupation of the immigrants had a great impact on that they passed the legal inspection.
- The inspector made the decision on whether to conduct further investigation according to a list provided by the crew.
- The inspector could speak languages other than English to communicate with the immigrants during the inspection.
- Some wealthy immigrants gave a bribe to the inspector in order to pass the legal inspection.
- The special care was taken that all the immigrants were seated in a comfortable way during the legal inspection.

#### 8th STOP: DETAINEES

For most people, Ellis Island was the "Isle of Hope." But for the unfortunate few who failed the health or legal inspections, it was the "Isle of Tears." Legal detainees lived in a dormitory room on the third floor. They might wait a few days or even a month. Then their case would be reviewed in the Hearing Room. People who were detained for medical reasons were cared for at the island's hospital or kept in quarantine. Some were treated for weeks, or even months. Eventually, a Board of Special Inquiry would review an individual's medical report and decide whether to allow him into the United States or to send him back.

PLEASE ANSWER THE QUESTIONS 23-25 ACCORDING TO THE READING PARAGRAPH WITH THE TITLE "8th STOP: DETAINEES"

23. By using the metaphor "Isle of Tears", what does the author intend to do? \* 5 puan

- S/he intends to emphasize the sadness that the immigrants failing the inspections experienced.
- S/he has the intention of communicating the tension took place in the Hearing Room to the readers.
- S/he intends to describe the dormitory room in which the detainees stayed for further legal inspection.
- S/he has the intention of drawing attention to how gloomy the quarantine room was.
- S/he intends to portray the maltreatment of patients at Ellis Island hospital.

24. One can understand from the passage that the legal detainees ----. \* 5 puan

- were kept in quarantine for a long time before they were summoned to the hearing room
- waited for their case to be reviewed in the Hearing Room from a couple of days till one month
- had to present their medical report for their case to be reviewed in the Hearing Room
- who could not wait for a month were sent back to their native countries free of charge
- could not help shedding tears when they learned that they would be kept for further legal investigation

25. The immigrants who could not pass the medical inspection ----. \* 5 puan

- received a treatment which lasted for a couple of days
- were allowed to enter the United States to be hospitalized
- perished on the voyage home due to a shipwreck
- were paid part of the travelling expenses within two days
- were either hospitalized or put in quarantine till their recovering

### 9th STOP: THE STAIRS OF SEPARATION

After the medical and legal inspections, the immigrants arrived at the top of another staircase at the other end of the Great Hall. This staircase had three aisles. Immigrants who were being detained were often brought down the center aisle. People who were traveling west or south walked down the right side of the staircase. Those going to New York City or to the north walked down the left side. At the bottom of the stairs was a post office, a ticketing office for the railways, and social workers to help the immigrants who needed assistance. There was also an office to exchange money from their home country for U.S. dollars. No matter where they were going after Ellis Island, immigrants needed money. Exchange rates for currencies around the world were posted each day on the blackboard.

PLEASE ANSWER THE QUESTIONS 26-28 ACCORDING TO THE READING PARAGRAPH WITH THE TITLE "9th STOP: THE STAIRS OF SEPARATION"

26. As the passage suggests, ----. \*

5 puan

- the immigrants were separated by the help of hallways according to the location that they were going to
- there were various offices on Ellis Island where the immigrants were allowed to work
- New York city was determined as the meeting point for the immigrants passing both inspections
- social workers were available on the island to help disabled immigrants communicate with deaf and dumb language
- no matter where the immigrants were going to, they passed through the same corridor

27. It is clear from the passage that the exchange rates ---. \*

5 puan

- were floating because of the unrest that the immigration led to
- in the USA were falling, and this triggered a rise in inflation
- of all countries' currency were shown at the exchange office on a daily basis
- did not concern the immigrants as the USA government provided them with money
- were stabilized during the immigration, enabling high purchasing power for the immigrants

28. It is implied in the passage that, the immigrants ---. \*

5 puan

- had to spend money in US dollars after they settled in the USA
- could spend the currency of their homeland at the stores in Ellis Island
- did not have to buy tickets to the places in the USA they were going to
- who did not have any money were detained in the island
- were allowed to travel by train to the particular destinations for free

#### 10th STOP: THE KISSING POST

An area on the first floor of the building became known as "the kissing post." It got that nickname because it is where family and friends waited for their loved ones. After months or years apart, they kissed and hugged and shouted with joy and relief. For the immigrants, the long journey was finally over. They were in America.

PLEASE ANSWER THE QUESTIONS 29 and 30 ACCORDING TO THE READING PARAGRAPH WITH THE TITLE "10th STOP: THE KISSING POST"

29. According to the passage, "the kissing post" is ---. \*

5 puan

- the place that the lovers from the immigrants set as a rendezvous point
- the area where the immigrants kissed and embraced each other with the joy of entering the USA
- the location where the immigrants met with their beloved ones after being apart for a long time
- the point at which further health and legal inspections were carried out for the detainees
- a special place which was assigned to the marriage events of the immigrants

30. It can be inferred from the passage that ---. \*

5 puan

- the kissing post was signifying the beginning of another challenging inspection process for the immigrants
- the immigrants who could reach the kissing post were the lucky ones allowed to settle in the USA
- the detainees were given a chance to meet with their families and friends before they left Ellis Island
- the kissing post was on the uppermost floor and therefore, the immigrants and their loved ones enjoyed the scenery of NYC
- some immigrants had a quarrel with each other at the kissing post because they could not find enough seats

[Geri](#)

[Gönder](#)

[Formu temizle](#)

## APPENDIX- D: Attitude Survey

### READING COMPREHENSION: MULTIMODAL SEMIOTIC APPROACH, ATTITUDES AND METACOGNITIVE AWARENESS - SURVEY

We would like to ask you to help us by filling in this survey concerning EFL reading. This survey is being conducted by a masters' degree student from the ELT department of Hacettepe University. This survey will be responded by only the students who were administered the reading comprehension test with multimodal reading passages (the passages with pictures, videos, sound recordings, virtual tour, etc.) and the semiotic elements such as icons. The aim of this survey is to reveal the students' attitudes towards MSA (Multimodal Semiotic Approach) to reading comprehension in Turkish EFL context and to find out about their metacognitive awareness of reading strategies. Please respond to the survey items honestly and sincerely, otherwise the research will not be successful. Thank you for taking your time to complete this survey.

 sunayerdelen18@gmail.com (paylaşılmıyor) [Hesap değiştir](#) 

\* Gerekli

#### QUESTIONNAIRE OF ATTITUDES TO MULTIMODAL SEMIOTIC APPROACH (MSA)

INSTRUCTION: Below are eight statements related to the different aspects of attitudes to MSA. Five points are provided along with the statements for you to indicate to what degree you agree or disagree with the statements. The points mean as follows: (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) Strongly agree. Please do not hesitate to choose what you think honestly because the answers that you provide will be kept confidential and will not be shared with third parties.

1. I think that using various modes and signs together (e.g. language, audio, visual images) has become increasingly prominent in different text-types in recent times. \*

1      2      3      4      5

Strongly disagree                        Strongly agree

2. I feel that the reading texts integrating language with signs and other modes— images, color, graphics, etc. are more enjoyable than the ones including only language. \*

1      2      3      4      5

Strongly disagree                        Strongly agree

3. I think that the multiple modes including signs in communication technologies have facilitated the way people read the texts in the target language. \*

1      2      3      4      5

Strongly disagree                        Strongly agree

4. I think that literacy instruction must account for the increasing variety of textual forms, e.g. media texts, print-based texts, visual images, maps, etc. \*

1      2      3      4      5

Strongly disagree                        Strongly agree

5. I believe that teacher training programs should provide preservice teachers with the skills for teaching to analyze the means by which images make meanings in texts. \*

1      2      3      4      5  
Strongly disagree                        Strongly agree

6. I believe that teacher training programs should prepare preservice teachers to teach how different modes (language, audio, visual) offer differing possibilities for reading comprehension. \*

1      2      3      4      5  
Strongly disagree                        Strongly agree

7. I would prefer to learn the strategies to teach my students how to use signs as alternative resources for reading comprehension. \*

1      2      3      4      5  
Strongly disagree                        Strongly agree

8. When I become a teacher, I will teach my students the skills to use all modes, speech, image, action, color, to derive meaning from reading texts. \*

1      2      3      4      5  
Strongly disagree                        Strongly agree



## APPENDIX- E: MARSİ

## METACOGNITIVE AWARENESS OF READING STRATEGIES INVENTORY

**DIRECTIONS:** Listed below are statements about what people do when they read academic or school-related materials such as textbooks, library books, etc. Five numbers follow each statement (1, 2, 3, 4, 5)

and each number means the following:

☐ 1 means "I never or almost never do this."

☐ 2 means "I do this only occasionally."

☐ 3 means "I sometimes do this." (About 50% of the time.)

☐ 4 means "I usually do this."

☐ 5 means "I always or almost always do this."

After reading each statement, choose the number (1, 2, 3, 4, or 5) that applies to you using the scale provided. Please note that there are no right or wrong answers to the statements in this inventory.

1. I have a purpose in mind when I read. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

2. I take notes while reading to help me understand what I read. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

3. I think about what I know to help me understand what I read. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

4. I preview the text to see what it's about before reading it. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

5. When text becomes difficult, I read aloud to help me understand what I read. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

6. I summarize what I read to reflect on important information in the text. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

7. I think about whether the content of the text fits my reading purpose. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

8. I read slowly but carefully to be sure I understand what I'm reading. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

9. I discuss what I read with others to check my understanding. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

10. I skim the text first by noting characteristics like length and organization. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

11. I try to get back on track when I lose concentration. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

12. I underline or circle information in the text to help me remember it. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

13. I adjust my reading speed according to what I'm reading. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

14. I decide what to read closely and what to ignore. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

15. I use reference materials such as dictionaries to help me understand what I read. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

16. When text becomes difficult, I pay closer attention to what I'm reading. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

17. I use tables, figures, and pictures in text to increase my understanding. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

18. I stop from time to time and think about what I'm reading. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

19. I use context clues to help me better understand what I'm reading. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

20. I paraphrase (restate ideas in my own words) to better understand what I read. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

21. I try to picture or visualize information to help remember what I read. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

22. I use typographical aids like bold face and italics to identify key information. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

23. I critically analyze and evaluate the information presented in the text. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

24. I go back and forth in the text to find relationships among ideas in it. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

25. I check my understanding when I come across conflicting information. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

26. I try to guess what the material is about when I read. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

27. When text becomes difficult, I re-read to increase my understanding. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

28. I ask myself questions I like to have answered in the text. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

29. I check to see if my guesses about the text are right or wrong. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

30. I try to guess the meaning of unknown words or phrases. \*

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

[Geri](#)

[Gönder](#)

[Formu temizle](#)

## APPENDIX-F: Ethics Committee Approval

Tarih: 06/09/2022  
Sayı: E-35853172-300-00002373977  
00002373977



T.C.  
**HACETTEPE ÜNİVERSİTESİ REKTÖRLÜĞÜ**  
Rektörlük

Sayı : E-35853172-300-00002373977  
Konu : Suna YERDELEN Hk. (Etik Komisyon İzni)

6.09.2022

### EĞİTİM BİLİMLERİ ENSTİTÜSÜ MÜDÜRLÜĞÜNE

İlgi : 25.07.2022 tarihli ve E-51944218-300-00002300689 sayılı yazımız.

Enstitünüz Yabancı Diller Eğitimi Anabilim Dalı İngiliz Dili Eğitimi yüksek lisans programı öğrencilerinden **Suna YERDELEN**'in **Prof. Dr. Nuray ALAGÖZLÜ** danışmanlığında yürüttüğü "**Okuma Anlama Çok Modlu Göstergibilimsel Yaklaşım, Tutumlar ve Üstbilişsel Farkındalık**" başlıklı tez çalışması, Üniversitemiz Senatosu Etik Komisyonunun **09 Ağustos 2022** tarihinde yapmış olduğu toplantıda incelenmiş olup, etik açıdan uygun bulunmuştur.

Bilgilerinizi ve gereğini rica ederim.

Prof. Dr. Vural GÖKMEN  
Rektör Yardımcısı

**Bu belge güvenli elektronik imza ile imzalanmıştır.**

Belge Doğrulama Kodu: CC43AD9D-706E-4077-A06E-A4611B22EE42

Belge Doğrulama Adresi: <https://www.turkiye.gov.tr/hu-ebys>

Adres: Hacettepe Üniversitesi Rektörlük 06100 Sıhhiye-Ankara  
E-posta: yazimd@hacettepe.edu.tr İnternet Adresi: www.hacettepe.edu.tr Elektronik  
Ağ: www.hacettepe.edu.tr  
Telefon: 0 (312) 305 3001-3002 Faks: 0 (312) 311 9992  
Kep: hacettepeuniversitesi@hs01.kep.tr

Bilgi için: Duygu Didem İLERİ

Bilgisayar İşletmeni

Telefon: .





**APPENDIX-G: Declaration of Ethical Conduct**

I hereby declare that...

- I have prepared this thesis in accordance with the thesis writing guidelines of the Graduate School of Educational Sciences of Hacettepe University;
- all information and documents in the thesis/dissertation have been obtained in accordance with academic regulations;
- all audio visual and written information and results have been presented in compliance with scientific and ethical standards;
- in case of using other people's work, related studies have been cited in accordance with scientific and ethical standards;
- all cited studies have been fully and decently referenced and included in the list of References;
- I did not do any distortion and/or manipulation on the data set,
- and **NO** part of this work was presented as a part of any other thesis study at this or any other university.

(07) /(12)/(2023)

(Signature)

Suna YERDELEN

## APPENDIX-H: Thesis/Dissertation Originality Report

07/12/2023

HACETTEPE UNIVERSITY  
Graduate School of Educational Sciences  
To The Department of Foreign Language Education

Thesis Title: Reading Comprehension: Multimodal Semiotic Approach, Attitudes and Metacognitive Awareness

The whole thesis that includes the *title page, introduction, main chapters, conclusions and bibliography section* is checked by using **Turnitin** plagiarism detection software take into the consideration requested filtering options. According to the originality report obtained data are as below.

Time Submitted	Page Count	Character Count	Date of Thesis Defense	Similarity Index	Submission ID
25/01/2024	182	227724	02/02/2024	%21	2278171247

Filtering options applied:

1. Bibliography excluded
2. Quotes included
3. Match size up to 5 words excluded

I declare that I have carefully read Hacettepe University Graduate School of Educational Sciences Guidelines for Obtaining and Using Thesis Originality Reports; that according to the maximum similarity index values specified in the Guidelines, my thesis does not include any form of plagiarism; that in any future detection of possible infringement of the regulations I accept all legal responsibility; and that all the information I have provided is correct to the best of my knowledge.

I respectfully submit this for approval.

**Name Lastname:** Suna YERDELEN

**Student No.:** N20134647

**Department:** Foreign Language Education

**Program:** English Language Teaching

**Status:**  Masters  Ph.D.  Integrated Ph.D.

Signature

### ADVISOR APPROVAL

APPROVED  
Prof. Dr. Nuray ALAGÖZLÜ

## APPENDIX-I: Yayınlama ve Fikrî Mülkiyet Hakları Beyanı

Enstitü tarafından onaylanan lisansüstü tezimin/raporumun tamamını veya herhangi bir kısmını, basılı (kâğıt) ve elektronik formatta arşivleme ve aşağıda verilen koşullarla kullanıma açma iznini Hacettepe Üniversitesine verdiğimi bildiririm. Bu izinle Üniversiteye verilen kullanım hakları dışındaki tüm fikri mülkiyet haklarım bende kalacak, tezimin tamamının ya da bir bölümünün gelecekteki çalışmalarda (makale, kitap, lisans ve patent vb.) kullanım hakları bana ait olacaktır.

Tezin kendi orijinal çalışmam olduğunu, başkalarının haklarını ihlal etmediğimi ve tezimin tek yetkili sahibi olduğumu beyan ve taahhüt ederim. Tezimde yer alan telif hakkı bulunan ve sahiplerinden yazılı izin alınarak kullanılması zorunlu metinlerin yazılı izin alınarak kullandığımı ve istenildiğinde suretlerini Üniversiteye teslim etmeyi taahhüt ederim.

Yükseköğretim Kurulu tarafından yayınlanan "**Lisansüstü Tezlerin Elektronik Ortamda Toplanması, Düzenlenmesi ve Erişime Açılmasına İlişkin Yönerge**" kapsamında tezim aşağıda belirtilen koşullar haricince YÖK Ulusal Tez Merkezi / H.Ü. Kütüphaneleri Açık Erişim Sisteminde erişime açılır.

- Enstitü/Fakülte yönetim kurulu kararı ile tezimin erişime açılması mezuniyet tarihinden itibaren 2 yıl ertelenmiştir. <sup>(1)</sup>
- Enstitü/Fakülte yönetim kurulunun gerekçeli kararı ile tezimin erişime açılması mezuniyet tarihinden itibaren ... ay ertelenmiştir. <sup>(2)</sup>
- Tezimle ilgili gizlilik kararı verilmiştir. <sup>(3)</sup>

07 /12 /2023

(imza)

Suna YERDELEN

---

"Lisansüstü Tezlerin Elektronik Ortamda Toplanması, Düzenlenmesi ve Erişime Açılmasına İlişkin Yönerge"

- (1) Madde 6. 1. Lisansüstü teze ilgili patent başvurusu yapılması veya patent alma sürecinin devam etmesi durumunda, tez danışmanının önerisi ve enstitü anabilim dalının uygun görüşü üzerine enstitü veya fakülte yönetim kurulu iki yıl süre ile tezinerişime açılmasının ertelenmesine karar verebilir.
- (2) Madde 6.2. Yeni teknik, materyal ve metotların kullanıldığı, henüz makaleye dönüşmemiş veya patent gibi yöntemlerle korunmamış ve internette paylaşılması durumunda 3 şahıslara veya kurumlara haksız kazanç; imkânı oluşturabilecek bilgi ve bulguları içeren tezler hakkında tez danışmanın önerisi ve enstitü anabilim dalının uygun görüşü üzerine enstitü veya fakülte yönetim kurulunun gerekçeli kararı ile altı ayı aşmamak üzere tezin erişime açılması engellenebilir.
- (3) Madde 7. 1. Ulusal çıkarları veya güvenliği ilgilendiren, emniyet, istihbarat, savunma ve güvenlik, sağlık vb. konulara ilişkin lisansüstü tezlerle ilgili gizlilik kararı, tezin yapıldığı kurum tarafından verilir\*. Kurum ve kuruluşlarla yapılan işbirliği protokolü çerçevesinde hazırlanan lisansüstü tezlere ilişkin gizlilik kararı ise, ilgili kurum ve kuruluşun önerisi ile enstitü veya fakültenin uygun görüşü üzerine üniversite yönetim kurulu tarafından verilir. Gizlilik kararı verilen tezler Yükseköğretim Kuruluna bildirilir.  
Madde 7.2. Gizlilik kararı verilen tezler gizlilik süresince enstitü veya fakülte tarafından gizlilik kuralları çerçevesinde muhafaza edilir, gizlilik kararının kaldırılması halinde Tez Otomasyon Sistemine yüklenir  
\*Tez danışmanının önerisi ve enstitü anabilim dalının uygun görüşü üzerine enstitü veya fakülte yönetim kurulu tarafından karar verilir.

