

**BAŞKENT UNIVERSITY
INSTITUTE OF EDUCATIONAL SCIENCES
DEPARTMENT OF FOREIGN LANGUAGES TEACHING
ENGLISH LANGUAGE TEACHING MASTER PROGRAM**

**THE IMPACT OF ARCS-BASED VOCABULARY INSTRUCTION
WITH AN ONLINE PRESENTATION TOOL ON EFL STUDENTS'
ACHIEVEMENT AND MOTIVATION**

PREPARED BY

GÖKÇE KOÇ ONAR

MASTER THESIS

ANKARA – 2024

**BAŞKENT UNIVERSITY
INSTITUTE OF EDUCATIONAL SCIENCES
DEPARTMENT OF FOREIGN LANGUAGES TEACHING
ENGLISH LANGUAGE TEACHING MASTER PROGRAM**

**THE IMPACT OF ARCS-BASED VOCABULARY INSTRUCTION
WITH AN ONLINE PRESENTATION TOOL ON EFL STUDENTS'
ACHIEVEMENT AND MOTIVATION**

PREPARED BY

GÖKÇE KOÇ ONAR

MASTER THESIS

THESIS SUPERVISOR

ASSOC. PROF. DR. SELİM SONER SÜTÇÜ

ANKARA – 2024

BAŞKENT ÜNİVERSİTESİ
EĞİTİM BİLİMLERİ ENSTİTÜSÜ

Yabancı Diller Eğitimi Anabilim Dalı İngiliz Dili Öğretimi Tezli Yüksek Lisans çerçevesinde Gökçe KOÇ ONAR tarafından hazırlanan bu çalışma, aşağıdaki jüri tarafından Yüksek Lisans Tezi olarak kabul edilmiştir.

Tez Savunma Tarihi: 19 / 12 / 2024

Tez Adı: The Impact of ARCS-Based Vocabulary Instruction with an Online Presentation Tool on EFL Students' Achievement and Motivation

Tez Jüri Üyeleri (Unvanı, Adı - Soyadı, Kurumu)

İmza

Prof. Dr. Paşa Tefvîk CEPHE, Gazi Üniversitesi

.....

Doç. Dr. Aydan IRGATOĞLU, Ankara Hacı Bayram Veli Üniversitesi

.....

Doç. Dr. Selim Soner SÜTÇÜ (Tez Danışmanı), Başkent Üniversitesi

.....

ONAY

Prof. Dr. Servet ÖZDEMİR
Eğitim Bilimleri Enstitüsü
Müdürü
Tarih: ... / ... /

BAŞKENT ÜNİVERSİTESİ
EĞİTİM BİLİMLERİ ENSTİTÜSÜ
YÜKSEK LİSANS TEZ ÇALIŞMASI ORJİNALLİK RAPORU

Tarih: 22 / 11 / 2024

Öğrencinin Adı, Soyadı: Gökçe KOÇ ONAR

Öğrencinin Numarası: 22120209.

Anabilim Dalı: Yabancı Diller Eğitimi

Programı: İngiliz Dili Öğretimi Tezli Yüksek Lisans Programı

Danışmanın Unvanı/Adı, Soyadı: Doç. Dr. Selim Soner Sütçü

Tez Başlığı: Çevrim İçi Sunum Aracı ile ARCS Tabanlı Kelime Öğretiminin Yabancı Dil Olarak İngilizce Öğrenen Öğrencilerin Başarısı ve Motivasyonu Üzerindeki Etkisi

Yukarıda başlığı belirtilen Yüksek Lisans çalışmamın; Giriş, Ana Bölümler ve Sonuç Bölümünden oluşan, toplam 56 sayfalık kısmına ilişkin, 22 / 11 / 2024 tarihinde tez danışmanım tarafından iThenticate adlı intihal tespit programından aşağıda belirtilen filtrelemeler uygulanarak alınmış olan orijinallik raporuna göre, tezimin benzerlik oranı %17'dir. Uygulanan filtrelemeler:

1. Kaynakça hariç

2. Alıntılar hariç

3. Beş (5) kelimeden daha az örtüşme içeren metin kısımları hariç

“Başkent Üniversitesi Enstitüleri Tez Çalışması Orijinallik Raporu Alınması ve Kullanılması Usul ve Esaslarını” inceledim ve bu uygulama esaslarında belirtilen azami benzerlik oranlarına tez çalışmamın herhangi bir intihal içermediğini; aksinin tespit edileceği muhtemel durumda doğabilecek her türlü hukuki sorumluluğu kabul ettiğimi ve yukarıda vermiş olduğum bilgilerin doğru olduğunu beyan ederim.

Öğrenci İmzası:.....

ONAY

Tarih: 22 / 11 / 2024

Öğrenci Danışmanı Unvan, Ad, Soyad, İmza:

.....
Doç. Dr. Selim Soner Sütçü

ACKNOWLEDGEMENTS

Firstly, I would like to express my gratitude to my thesis supervisor Assoc. Prof. Dr. Selim Soner SÜTÇÜ. I believe that this research could not have been completed without his dedicated support and guidance.

Besides my advisor, I would also like to thank my thesis examination committee members Prof. Dr. Paşa Tevfik CEPHE and Assoc. Prof. Dr. Aydan IRGATOĞLU for their valuable time, feedback and suggestions.

I would like to extend my sincere thanks to my colleague İnci BOZ who kindly and willingly supported me.

I am also thankful to my family for their support. They have always stood by me and believed in me.

Finally, I would like to express my gratitude to my beloved husband for his great support and foresight and my lovely sons Mert and Aras.

Gökçe KOÇ ONAR
Ankara 2024

ÖZET

Gökçe KOÇ ONAR

Çevrim İçi Sunum Aracı ile ARCS Tabanlı Kelime Öğretiminin Yabancı Dil Olarak İngilizce Öğrenen Öğrencilerin Başarısı ve Motivasyonu Üzerindeki Etkisi

**Başkent Üniversitesi
Eğitim Bilimleri Enstitüsü
Yabancı Diller Eğitimi Anabilim Dalı
İngiliz Dili Öğretimi Tezli Yüksek Lisans Programı**

2024

Bu çalışma çevrim içi sunum araçları ile ARCS motivasyon tasarımı tabanlı kelime öğretiminin yabancı dil olarak İngilizce öğrenen öğrencilerin kelime öğrenme başarısı ve motivasyonu üzerindeki etkisini incelemeyi amaçlamıştır. Çalışmada yarı deneysel araştırma metodu kullanılmıştır. Veri toplamak amacıyla 4 haftalık bir deney süreci planlanmıştır. 43 lise öğrencisi çalışmaya katılmıştır. Sürecin başında, öğrencilerin kelime bilgisi düzeylerini ölçmek amacıyla bir ön test uygulanmıştır. Sonrasında 21 kişiden oluşan deney grubu 4 hafta boyunca bir çevrim içi sunum aracı yoluyla kelime öğretimi görmüştür. Deney grubunun ders tasarımı Keller (1987) tarafında geliştirilen ARCS motivasyon modeline göre uyarlanmıştır. Kontrol grubu ise deney grubu ile aynı kelimeleri geleneksel yöntemlerle öğrenmişlerdir. ARCS modeli kontrol grubunda uygulanmamıştır. Her iki grup için de 4 hafta sonunda, öğrencilerin kelime bilgilerindeki değişimi belirlemek amacıyla son test ve ardından Keller (2010) tarafından geliştirilen ve Kutu ve Sözbilir (2011) tarafından Türkçe'ye uyarlanan Öğretim Materyalleri Motivasyon Anketi uygulanmıştır. Çalışmanın sonunda elde edilen bulgulara göre her iki grubun da kelime bilgisinde gelişme olmakla beraber gruplar arasında anlamlı bir fark ortaya çıkmamıştır. Ancak, motivasyon gelişimi açısından, deney grubu daha yüksek performans göstermiştir. Sonuç olarak bu çalışma, ARCS modeli ile teknoloji kullanımının öğrenci motivasyonunu iyileştirmede önemini vurgulamıştır.

Anahtar Kelimeler: Bilgi ve İletişim Teknolojileri, Çevrim İçi Sunum Araçları, ARCS Motivasyon Modeli, Kelime Öğretimi

ABSTRACT

Gökçe KOÇ ONAR

The Impact of ARCS-based Vocabulary Instruction with an Online Presentation Tool on EFL Students' Achievement and Motivation

**Başkent University
Institute of Educational Sciences
Department of Foreign Languages
English Language Teaching Master Program with Thesis**

2024

The current study aimed to investigate the impact of ARCS based vocabulary instruction with an online presentation tool on EFL students' vocabulary achievement and motivation. The study employs a quasi-experimental research design. A 4-week intervention was planned to gather necessary data. 43 high school students studying at a state high school participated in the study. A pre-test as a vocabulary achievement test was applied to determine the vocabulary knowledge of students in both the experimental and the control groups before the intervention process began. The number of students in the experimental group was 21 and they were taught vocabulary with an online presentation tool for 4 weeks. The course design for the experimental group was prepared according to ARCS motivational model developed by Keller (1987). The control group, consisting of 22 students, learned the same vocabulary items with traditional methods, and ARCS model was not applied for this group's lesson plan. After the intervention process ended, a post-test as a vocabulary achievement test and the Instructional Materials Motivation Survey, prepared by Keller (2010) and adapted into Turkish by Kutu and Sözbilir (2011) were implemented in both groups. The results of the study revealed that both groups' vocabulary knowledge improved and there was not a significant difference between them. However, there was a significant difference between the motivation scores of these groups in favor of the experimental group. In conclusion, integrating ARCS model of motivational design with technology is significant to improve motivation of EFL students.

Key Words: Information Communication Technologies, Online Presentation Tools, ARCS Model of Motivational Design, Vocabulary Instruction

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	i
ÖZET	ii
ABSTRACT	iii
TABLE OF CONTENTS	iv
LIST OF TABLES.....	vii
LIST OF FIGURES.....	viii
LIST OF ABBREVIATIONS	ix
CHAPTER 1.....	1
INTRODUCTION	1
1.1. Statement of the Problem.....	1
1.2. Purpose of the Study	2
1.3. Research Questions	3
1.4. Significance of the Study	3
CHAPTER 2.....	5
LITERATURE REVIEW	5
2.1. Technology Use in Language Teaching	5
2.2. Integration of Technology into EFL Teaching	8
2.3. Online Presentation Tools.....	9
2.3.1. An online presentation tool: Nearpod	10
2.4. Vocabulary	12
2.4.1. The importance of vocabulary knowledge.....	12
2.4.2. Vocabulary instruction	13
2.4.3. Technology assisted methods for vocabulary instruction	14
2.5. Motivation	15
2.5.1. Motivation theories	15
2.5.2. ARCS model of motivational design.....	16
2.5.3. Integrating ARCS model of motivational design and technology in EFL instruction	18
2.6. The Effect of Technology on Vocabulary Achievement and Motivation	19
CHAPTER 3.....	22

METHODOLOGY	22
3.1. Research Design.....	22
3.2. Setting and Participants.....	22
3.3. Data Collection Instruments.....	23
3.3.1. Vocabulary achievement test	23
3.3.2. Instructional materials motivation survey.....	24
3.4. Normality Tests.....	24
3.4.1. Normality tests for vocabulary achievement tests	25
3.4.2. Normality test for survey.....	25
3.5. Data Collection Procedures	29
3.5.1. Experimental group	29
3.5.2. Online course presentation designed according to ARCS motivational design model	33
3.5.3. Control group	37
3.6. Data Analysis	37
3.7. Limitations of the Study.....	37
CHAPTER 4.....	39
FINDINGS.....	39
4.1. Comparison of Pre-test Results of Experimental Group and Control Group.....	39
4.2. Comparison of Pre and Post Test Results	40
4.2.1. Pre and post test results of experimental group.....	40
4.2.2. Pre and post test results of control group	41
4.2.3. Comparison of the post-test results of experimental group and control group	42
4.3. Instructional Materials Motivation Survey Results	43
4.3.1. Independent samples T-test results of survey for experimental and control groups.....	44
CHAPTER 5.....	48
DISCUSSION.....	48
5.1. Overview of the Study	48
5.2. Effects of Online Presentation Tools on Students' Vocabulary Achievement.....	48
5.3. Effects of Online Presentation Tools on Students' Motivation	50
CHAPTER 6.....	53
CONCLUSION	53

6.1. Conclusion	53
6.2. Implications.....	55
6.3. Suggestions	55
REFERENCES	57
APPENDIX 1: VOCABULARY ACHIEVEMENT TEST	
APPENDIX 2: INSTRUCTIONAL MATERIALS MOTIVATION SURVEY	
APPENDIX 3: PERMISSION TO USE INSTRUCTIONAL MATERIALS MOTIVATION SURVEY	
APPENDIX 4: ETHICS COMMITTEE APPROVAL	
APPENDIX 5: PERMISSION FROM T.R. MINISTRY OF NATIONAL EDUCATION	
APPENDIX 6: ORIGINALITY REPORT	

LIST OF TABLES

Table 3.1.	Shapiro-Wilk normality test for pre-test.....	25
Table 3.2.	Shapiro-Wilk normality test for post-test.....	25
Table 3.3.	Test of normality for survey	26
Table 3.4.	Normality test for attention-relevance subcategory	28
Table 3.5.	Normality test for confidence-satisfaction subcategory	28
Table 3.6.	ARCS simplified design matrix	33
Table 3.7.	Implementation of instructional tactics according to ARCS motivational design model: attention category	35
Table 3.8.	Implementation of instructional tactics according to ARCS motivational design model: relevance category	35
Table 3.9.	Implementation of instructional tactics according to ARCS motivational design model: confidence category	36
Table 3.10.	Implementation of instructional tactics according to ARCS motivational design model satisfaction category.....	36
Table 4.1.	Descriptive statistics of pre-test results	39
Table 4.2.	Mann-Whitney U test of pre-test results	40
Table 4.3.	Descriptive statistics for pre-test and post-test results of experimental group.....	40
Table 4.4.	Wilcoxon signed ranks test for experimental group.....	41
Table 4.5.	Descriptive statistics for pre-test and post-test results of control group	41
Table 4.6.	Wilcoxon signed ranks test for control group	42
Table 4.7.	Descriptive statistics for comparison of pre-test and post-test results	43
Table 4.8.	Comparison of post-test results of treatment and control group with Mann-Whitney U test	43
Table 4.9.	Descriptive statistics of instructional materials motivation survey as a whole	44
Table 4.10.	Comparison of instructional materials motivation survey results for both groups with independent samples T-test.....	44
Table 4.11.	Descriptive statistics of attention-relevance subgroup	45
Table 4.12.	Independent samples T-test for attention-relevance subcategory	45
Table 4.13.	Descriptive statistics confidence-satisfaction subcategory	46
Table 4.14.	Independent samples T-test for confidence-satisfaction subcategory	46

LIST OF FIGURES

Figure 3.1.	Normal Q-Q plot of motivation for experimental group.....	26
Figure 3.2.	Normal Q-Q plot of motivation for control group	26
Figure 3.3.	Detrended normal Q-Q plot of motivation for treatment group.....	27
Figure 3.4.	Detrended normal Q-Q plot of motivation for control group	27
Figure 3.5.	Boxplot of the distribution of the scores for both groups	28
Figure 3.6.	Collaboration board.....	30
Figure 3.7.	A sample presentation of vocabulary	30
Figure 3.8.	Fill in the blanks exercise.....	31
Figure 3.9.	Open ended question activity	31
Figure 3.10.	Drawing activity.....	32
Figure 3.11.	Time to climb board	32



LIST OF ABBREVIATIONS

ARCS	Attention Relevance Confidence Satisfaction
CTML	Cognitive Theory of Multimedia Learning
EFL	English as a Foreign Language
ICT	Information Communication Technologies
IMMS	Instructional Materials Motivation Survey
TPCK	Technological Pedagogical Content Knowledge



CHAPTER 1

INTRODUCTION

This chapter presents and discusses the statement of the problem, the purpose of the study, research questions, and significance of the study.

1.1. Statement of the Problem

Vocabulary learning constitutes an essential part of EFL education. With the presence of vocabulary items, effective communication can occur, and learners can develop their language skills (Folse, 2004, p. 2). Therefore, students' vocabulary knowledge plays a crucial role in language learning. Plenty of methods could be used to teach vocabulary. Dictionary use, the pen and paper method, with which students write down words and their meanings, flashcards, and keeping diaries are the most common traditional methods (Mishan & Timmis, 2015, p. 145). However, students' interests and learning styles have been altered by technological developments. Therefore, a need for teachers to integrate technology into their lessons has appeared. ICT tools have become significant game-changers in this environment to make learning more dynamic, interactive, and personalized (Yeganehpour & Jalilzadeh, 2022, p. 443).

Online presentation tools are among these ICT tools that make the learning process more interactive, collaborative, and motivating (Carmona-Chica & Arguda-Garzon, 2022, p. 29). These tools appeared as an alternative to Power Point by providing opportunities for users to collaborate with other learners simultaneously, make comments, and make adjustments on the presentation on any internet-connected computer (Osipovskaya & Burdovskaya, 2019, p. 1138). Besides, online presentation tools include features, such as allowing users to add videos, audio or images from the web, change the timing of the presentations, add games and collaborative activities, and connect them with social networking sites (Osipovskaya & Burdovskaya, 2019, p. 1138).

It is also claimed by researchers that these innovative ICT tools can enhance learners' motivation, achievement, and retention in vocabulary learning, which leads to better language education (Robin & Aziz, 2022, p. 2490). In relation to this claim, there have been several studies depending on a variety of motivation theories that investigated the effect of ICT tools on students' vocabulary achievement and motivation. The impacts of ICT tools,

such as Quizlet, Kahoot, Socrative, and Wordart, on vocabulary acquisition and motivation levels of students are studied by numerous researchers in the field (Açıkgöz, 2019; Altun, 2019; Alzaid, 2018; Brittingham, 2022; Cho, 2021; Çakır, 2019; Dağdeler, 2018; Fu, 2021).

Additionally, some studies examined the effectiveness of online presentation tools. Santiana and Fatimah (2017) examined the effects of using Prezi as an online presentation tool to teach English and studied its effectiveness on catching students' attention. Abdullah, Inayati, and Karyawati (2022) investigated the effect of Nearpod on student motivation in an elementary school. It can be understood from these studies that the use of online presentation tools has a relationship with students' motivation level, which is an affective aspect of learning a language.

Even though there are several studies exploring the effects of ICT tools and online presentation tools on students' vocabulary knowledge and motivation, only a handful of studies are based on ARCS motivational design model proposed by Keller (1987) to investigate the impact of technology on students' vocabulary achievement and motivation. The effects of the ARCS motivational design model on students' vocabulary knowledge and motivation were examined explicitly by a few studies in literature (Lai & Chang, 2021; Solak & Çakır, 2015; Tandoğan, 2019; Wu, 2017).

However, it was understood that there is not enough research studying the effects of the ARCS-based vocabulary instruction with an online presentation tool on EFL learners' vocabulary acquisition levels and motivation in an education setting in Turkey. This deficiency was also pointed out by Tandoğan (2019). In order to fill in this gap, this study aimed to investigate the impacts of ARCS-based vocabulary instruction with an online presentation tool on EFL learners' vocabulary acquisition and motivation.

1.2. Purpose of the Study

The purpose of this study was to investigate the impact of ARCS-based vocabulary instruction with an online presentation tool on EFL students' vocabulary achievement and motivation. The study employed a quasi-experimental method design. In the first section of the study, a pre-test and a post-test as vocabulary achievement tests were administered in both the experimental group and the control group to examine whether there was a relationship between ARCS-based vocabulary instruction with an online presentation tool and students' vocabulary achievement levels. In the second phase of the study, the Instructional Materials Motivation Survey, designed by Keller (2010) and adapted into

Turkish by Kutu and Sözbilir (2011), was implemented with both the experimental group and the control group to investigate the impact of ARCS-based vocabulary instruction with an online presentation tool on students' motivation and to examine if there was a significant difference between each groups' motivational levels as a result of the intervention process.

1.3. Research Questions

The current study aims to investigate the impacts of ARCS-based vocabulary instruction with an online presentation tool on EFL learners' vocabulary acquisition and motivation. In order to meet this objective, the following research questions are addressed:

1. Does ARCS-based vocabulary instruction with an online presentation tool contribute to students' vocabulary achievement?
2. Does ARCS-based vocabulary instruction with an online presentation tool affect students' motivation level?

1.4. Significance of the Study

The importance of the present study stems from its investigation of the impact of ARCS-based vocabulary instruction with an online presentation tool on students' vocabulary achievement and motivation. This study may contribute to the field of English Language Teaching in several ways. Firstly, understanding the effect of technology-assisted methods on language learning may help EFL instructors enhance their teaching strategies by integrating technology with their teaching methods. The impact of these technology-assisted methods on EFL students' achievement and motivation has been examined by numerous researchers. In their study, David and Weinstein (2023) provided insights into the effects of technology on students' academic well-being and noted that the classroom experience of students can be enhanced with technology by making students feel encouraged to complete tasks effectively and feel related to their peers (p. 1458). Bueno-Alastuey and Nemeth (2022) also investigated the effects of two different technology-integrated methods for vocabulary teaching, and they found both methods effective (p. 1428). The significant effect technology-assisted methods have on vocabulary knowledge and motivation of EFL students was revealed by several studies, too (Katemba et al., 2022; Aulia et al., 2020; Setiawan & Wiedarti, 2020). Secondly, it may help EFL instructors seeking to improve student motivation in EFL classrooms. This study employed the ARCS model of motivational design to enhance student motivation in an EFL classroom. Several studies highlighted the

importance of integrating ARCS motivation strategies for effective language teaching in an EFL classroom (Jin, 2024; Hariyanto et al., 2019; Kurt & Keçik, 2017). Some studies also focused on the effects of the ARCS model on specific aspects of language learning such as listening, speaking and writing. Zhang (2015) concluded that the ARCS model could be utilized to improve EFL students' listening proficiency and motivation. Munawarah et al. (2018) stated that the ARCS model decreased students' anxiety about speaking English and enhanced their confidence and satisfaction while improving their performance (p.375). Regarding writing skills, Mirzaei et al. (2022) found significant results related to ARCS motivational model's positive effect on EFL writing together with learner engagement and motivation.

The ARCS model of motivational design and its effects on students' achievement and motivation have been examined by researchers from various fields, too. Thaer and Thaer (2016) studied the effects of ARCS on students' motivation and academic achievement and found that lessons designed with ARCS model increased not only success but also engagement and motivation of students (p.75). Astletiner and Lintner (2004) studied the effects of ARCS on self-regulated learning and pointed out both positive and negative impacts of ARCS design model. Turel and Sanal (2018) also revealed that ARCS based e-book lowered students' mathematics anxiety levels and increased their performance (p. 130).

Overall, in the light of these studies, it can be inferred that there is a gap in literature regarding examining the effects of an ARCS motivational model-based vocabulary instruction integrated with technology on students' vocabulary achievement and motivation. There are few studies in Turkey exploring the effects of ARCS model of motivational design on students' vocabulary knowledge and motivation. Tandoğan (2019) pointed out this gap with her study "The Impact of ARCS Based Instructional Materials Enhanced with Augmented Reality on ESP Vocabulary Achievement and Motivation". Therefore, the objective of this study is to investigate the impact of ARCS-based vocabulary instruction with an online presentation tool on EFL students' vocabulary achievement and motivation. All things considered, the present study can enhance teaching strategies employed by EFL instructors by shedding light on the effects of technology-assisted methods integrated with ARCS motivational design on students' achievement and motivation. The results of this study may have applications in different teaching fields, too. Understanding the effects of technology assisted methods based on ARCS model on student achievement and motivation can help educators enhance their teaching experience.

CHAPTER 2

LITERATURE REVIEW

This chapter presents and discusses technology use in language teaching in line with its integration into vocabulary instruction by adopting the framework for ARCS motivational model. Also, studies related to the effect of integrating ARCS design model into teaching and learning, and impact of technology assisted methods on vocabulary knowledge were presented.

2.1. Technology Use in Language Teaching

Technology use in language education is becoming common as the availability of resources is increasing. It is among the equipment in a classroom environment (Mishan & Timmis, 2015, p. 75). Smartboards, Wi-Fi, computer labs, mobile networking devices and even mobile phones are now widely used in educational settings. There are several reasons why technology has become an indispensable part of language classrooms. The most important reason is that the new generation of student profile is totally different from the previous ones. These students are called ‘digital natives’, which is a term that means being born into technology and knowing the computer and internet language like their own native languages (Prensky, 2001, p. 1). It is emphasized that these students have been using digital tools like computers, cell phones, and all the other ones throughout their whole lives (Prensky, 2001, p. 1). Digital tools are usual items in their lives (Oblinger, 2003, p. 38), and they can make use of these items in education without any special treatment. As a result, this brought changes to the way how students receive information and do tasks. They are not very patient with the lectures as they are used to sending messages or downloading things instantly, and they want to get information instantly and fast as well (Prensky, 2001, p. 3). They choose to learn from graphics or visuals instead of texts, and they prefer to play games rather than do serious work (Prensky, 2001, p. 3). Also, Prensky (2001) states that networking is common among them, so they like cooperating while doing tasks (p. 3). Lastly, multi-tasking is an important feature of this new generation of students because they are accustomed to doing multiple things at the same time, such as sending messages, listening to music and doing homework (Oblinger, 2003, p. 40). Considering these facts, a need to change the way the information is presented has emerged, and technology has taken a significant role in the classroom.

Another reason why technology usage has become common in EFL teaching is that it provides a lot of opportunities in the learning environment. It offers more authentic materials so that students can be exposed to more real-life like activities in the classroom (Saydakhmatova, 2020, p. 210). It can help to shift the classroom environment from being teacher-centered to a more learner-centered one so that learners can take more responsibility for their own learning and think more independently (Saydakhmatova, 2020, p. 210).

Furthermore, using technology in EFL classrooms provides variety and flexibility. Zengin and Aksu (2017) state that technology gives the chance to learn things both inside and outside the class with the help of online tools (p. 82). Games can be integrated into lessons, which may result in a more engaging and motivating learning experience (Zengin & Aksu, 2017, p. 82). Thanks to technology, lesson materials can be adapted according to learners' interests, ages, skills, and different learning styles (Aysu, 2020, p. 87).

Lastly, Savaş (2020) lists the benefits of using technology in EFL classroom as providing interaction with native speakers, increasing intercultural competence, personalizing the learning experience, promoting learner autonomy, tracking the learners' progress, and encouraging collaboration among learners (pp. 70 – 72).

Thus, throughout the course of these changes within the learner profile and the teaching environment, new terminologies have appeared related to the use of technology in language learning. One of these terms is Computer Assisted Language Learning (CALL), which is used to emphasize the use of computers in a language classroom, and the other term is information and communication technologies (ICT) which is a more neutral term to describe use of technologies in education (Mishan & Timmis, 2015, p. 76).

As a result of the advances in technology, a lot of ICT tools have appeared and have taken their place in education. The term ICT embodies the hardware and software equipment and information systems that are available in schools (Hennessy, Ruthven & Brindley, 2005, p. 2). ICT tools include plenty of items from smartphones and personal computers to applications like Quizlet, Kahoot, Socrative and online presentation tools such as Prezi and Nearpod, and they provide several opportunities for students to improve their language skills and enable teachers to enhance their teaching experiences (Khan et al., 2023, p. 2). Using ICT tools in language teaching makes contributions such as enabling teachers to motivate students and providing students with chances to develop their knowledge and skills and communicate and collaborate with other learners (Madhavi et al., 2023, p. 324). Students can improve their reading, listening, writing and speaking skills along with their vocabulary and grammar knowledge with the help of ICT tools (Madhavi et al., 2023, p. 329). It is also

stated by Madhavi et al. (2023) that ICT tools promote a more student-centric learning environment which in turn makes students more autonomous, motivated and self-confident learners (p. 329). They continue by adding that more interaction between students and teachers takes place with the help of these tools.

Studies have been carried out in order to examine the effects of using technology in the classroom. In the study 'The Integration of Technology into Foreign Language Teaching', Altun (2015) examined how technology-based instruction helps learners become successful in learning a foreign language. 99 students from an English language teaching department at a university participated in the study. The quantitative method was adopted, and the data was collected through a survey. The study showed that integration of technology into language teaching enhanced learning and motivated learners.

Using technology and ICT tools not only provides benefits but also it may bring some challenges into the educational setting. This idea has been supported by a study by Tanveer (2011). The study 'Integrating E-Learning in Classroom Based Language Teaching: Perceptions, Challenges and Strategies' carried out by Tanveer (2011) examined the perceptions of teachers and students on the use of e-learning tools, challenges they face and strategies to enhance the application of these tools to language learning classrooms. The qualitative and quantitative research methods were adopted to gather data. 8 English language instructors were interviewed, and a five-point Likert scale questionnaire was conducted among 46 learners. The study revealed that e-learning tools had benefits such as diversifying activities, providing more motivation for learning, enabling introvert students to interact better, helping to gain better time management skills, and allowing teachers to have a more student-centered form of teaching. The challenges discussed were the excessive use of technology, unreliable technology, lack of tools, confidence and experience by the teachers and the students, and time limits. As a result, it was suggested that by providing more time and training, the experience of using e-learning tools could be improved.

The utilization of technology and ICT tools in language education has had certain effects on language learning and teaching. Mishan and Timmis (2015) state that teachers need to consider these effects on teaching and learning when they try to integrate technology into their teaching in pedagogically valuable ways (p. 7).

2.2. Integration of Technology into EFL Teaching

Integrating technologies into teaching and learning requires careful planning and knowledge. Due to this fact, Mishra and Koehler (2006) formed a framework called 'Technological Pedagogical Content Knowledge (TPCK)' for using technology in education. TPCK requires knowledge of three components technology, pedagogy and content.

Mishra and Koehler (2006) draw attention to the fact that one technological solution is not suitable for every student, every teacher or every content (p. 1029). Firstly, teachers need to consider how technology can be used to teach the subject matter and how the subject matter changes with the application of technology (Mishra & Koehler, 2006, p. 1028). Then, teachers should have information about students' prior knowledge, what makes learning difficult or easy for them, and they should know that their teaching style may change because of using a specific technology (Mishra & Koehler, 2006, pp. 1028-1029). Lastly, having the knowledge about how to use that specific technology and being able to learn and adapt to new technologies is important within this framework (Mishra & Koehler, 2006, p. 1028). Therefore, technology, pedagogy and content knowledge cannot be separated from one another. Having a deep understanding of these three components may lead to the development of content-specific strategies and productive technology integration in teaching (Mishra & Koehler, 2006, p. 1029).

Ferdig (2006) draws attention to the importance of technological pedagogical content knowledge by stating that the impact of technology has on education can be best assessed when appropriate technology is selected according to curriculum, pedagogy and instruction (p.757). He continues by listing important features technologies should own to be pedagogically suitable for an educational context. First, it must include authentic, engaging and challenging activities (Ferdig, 2006, p. 750). Then it should provide an opportunity for students to have control over their own learning and should promote active participation, collaboration and social interaction (Ferdig, 2006, p. 750). However, some technological innovations may not have these properties to be used as an educational material. In this case, educators with technological pedagogical content knowledge can design such materials in a pedagogically sound way, so Ferdig (2006) highlights the significance of TPCK for determining the value of technological tools in teaching (p. 756).

It is essential that teachers transform and improve their TPCK according to the developments happening in educational technologies and contexts. Regarding this, Bueno et

al. (2023) state that a constant change happens in ICT and teaching contexts, so teachers need to revise their TPCK and learn new ways of teaching with technologies (p.100). If teachers change the way that they teach continuously based on developing digital technologies, they can make the learning content more meaningful for their students (Bueno, et al., 2023, p. 100). There are also studies supporting this view. Teachers' TPCK and their use of ICT could further be developed (Zainal, 2012; Malik et al., 2018).

2.3. Online Presentation Tools

Online presentation tools are among ICT tools that are widely used in language education settings. Google slides, Prezi, Powtoon, Canva, Haiku Deck, Mentimeter and Nearpod are significant examples of online presentation tools that are used by teachers. Presentation software enables teachers to organize, store and show the learning content in creative ways (Scrivener, 2011, p. 337) These tools provide opportunities to both teachers and students during the learning process. Kamaluddin, Azizah, Allan and Robert (2023) suggest that learning can be made more effective and efficient with the utilization of online presentation tools (p. 200). Le (2023) concluded that using online presentation tools changed the attitude of students in a positive way and led to more effective learning (p. 33). Klymenko et al. (2017) list the advantages of using online presentation tools as offering opportunities to add images, videos, audio etc., conveying the message effectively, promoting motivation of both teachers and students, and improving both teachers and students' skills to use technological devices and think creatively (p. 91). In addition to these pros, they mention the cons of using these tools as being time-consuming, boring when used excessively, and prone to technical problems such as viruses and deactivated links.

Engagement in online presentation tools in language education is also connected to the concept of intensification (Klymenko et al., 2017, p. 93). Thanks to these tools, plenty of teaching materials can be included in the teaching process in a faster way. For instance, students and teachers can interact with one another instantly, students can get immediate feedback, and students can be monitored easily (Klymenko et al., 2017, p. 93).

Besides multiple benefits they provide, Scrivener (2011) warns about the negative effects presentation software may produce (p. 339). Reducing the flexibility of the lesson is the first drawback of them as teachers might stick to pre-arranged presentation and ignore the spontaneous questions asked by the students (Scrivener, 2011, p. 339). The other negative consequence of using presentation software is that teachers could lose interaction

with students and instead they may interact more with the presentation (Scrivener, 2011, p. 339).

The use of online presentation tools in language education can be discussed in the context of Cognitive Theory of Multimedia Learning (CTML). Mayer's Cognitive Theory of Multimedia Learning involves the use of multimedia materials with cognitive strategies to promote efficient learning (Rudolph, 2017, p. 1). It is suggested that students learn with illustrations together with text in a meaningful way. Meaningful learning happens when students comprehend the material in detail by relating the visual and verbal information through cognitive processes (Mayer & Moreno, 2003, p. 43). It is indicated that these visual and verbal materials should be presented in a way that it should not cause any cognitive overload on students (Mayer & Moreno, 2003, p. 43).

2.3.1. An online presentation tool: Nearpod

The online presentation tool "Nearpod" is an interactive learning and teaching tool that can be used via both computer and mobile phone applications. It was especially chosen for this study because an ARCS-based lesson can be designed thanks to its wide variety of features that can enrich the lesson material. Learners' attention can be aroused and sustained with various activities like polls, collaboration board, fill-in-the-blanks, matching pairs, drawing and competitions. Relevance can be easily set by relating the lesson to students' personal interests, goals, or life skills. For instance, Nearpod has a positive impact on students' pragmatic competence. The study carried out by Civelek and Karatepe (2021) revealed that Nearpod helped students improve their pragmatic competence by providing pragmatic language input outside the classroom, which is accessible to everyone (p. 72). Besides, it can increase students' confidence. For example, it reduces the students' anxiety in speaking by giving them with more freedom to share their ideas and discuss with other students. Le and Doan (2023), in their study, concluded that learners express their ideas without the fear of being ashamed (p. 112). It is also noted that students have more chances to participate in learning activities and interactions, their interests are kept alive with various materials, and they are more satisfied with their learning.

There are various studies that put forward the benefits of using the online presentation tool 'Nearpod' in teaching. In the study "Nearpod Use as a Learning Platform to Improve Student Learning Motivation in an Elementary School", Abdullah et al. (2022) found out that it increased the levels of student engagement, motivation, students' learning interests

and attention (p. 127). Putra et al. (2021) found that Nearpod increases student activity and engagement and attracts attention with its many features (p. 302).

Some studies highlight Nearpod's positive impact on students' language skills. In the study 'Nearpod Website Strategy in Increasing Students' Listening Ability', Turahmah et al. (2023) found out that Nearpod use in the lessons made a significant improvement in the participation and the listening skills of the students in the experimental group compared to the control group who were taught with the traditional method (p. 97). It was also shown that it was a fun way to engage students in the lesson. Pupah and Sholihah (2022) investigated whether Nearpod could enhance students' reading skills and found out that students' reading skills improved in the following aspects: finding the main idea and the details and making inferences (p. 17).

It was also shown that Nearpod is a motivating tool for students, and it lets teachers track the students' progress easily. Herwawan and Panjaitan (2022) state that the use of Nearpod in vocabulary instruction made a significantly impacted students' scores by making learning more interactive, interesting, and motivating (p. 6079). Nearpod is used in a variety of ways both in the classroom and out of the classroom. It has also become a part of the flipped education. Mattei and Ennis (2014) list advantages of using Nearpod in a flipped classroom model (p. 4). They state that it is an efficient way to track student progress in real time instead of applying class participation approach or tests. Besides, it enables active learning due to its interactive features and encourages students to complete pre-class tasks. It is noted that 80% of the students came to class prepared compared to the result of traditional method approach, which is 20%. (Mattei & Ennis, 2014, p. 4)

In addition to the benefits of Nearpod, it has a few drawbacks. One of them is the small size of the PDF material which makes reading a text difficult (Le & Doan, 2023, p. 101). Demanding high internet connection, having paid apps to add more features, allowing limited number of users and slide sizes are other disadvantages of Nearpod (Putra et al., 2021, p. 298).

In conclusion, the online presentation tool, Nearpod, was studied in various contexts, and the benefits and drawbacks of it were put forward by them. In this study, Nearpod was utilized to investigate online presentation tools' effects on learning and motivation. When it is compared to its counterparts, it offers more interactivity, engagement, and fun. Lowry-Brock (2016), in her study, compared Nearpod with one of its rivals, Power Point, and stated that Nearpod promoted enthusiasm among her students as they could see the information on their devices instead of trying to see the board in front of the classroom (p.30). She continued

by adding that Nearpod provided a record of student performance, which was a feature that Power Point did not include (Lowry-Brock, 2016, p. 31). Besides, thanks to its student paced mode, material can be revisited after the lecture has been completed (McClean & Crowe, 2017, p.6). This is another feature of Nearpod that most other presentation tools do not offer to their users. Also, Nearpod features “draw it” activities, which are different from other tools. It has the function of building lessons with interactive features like discussion questions, interactive video lessons and quizzes (Çekiç & Bakla, 2021, p. 1476). Due to these distinguishing functions, Nearpod stands out as an attractive tool for lesson building. Therefore, in this study, the effectiveness of the online presentation tool, Nearpod, on EFL learners’ vocabulary achievement and motivation was investigated.

2.4. Vocabulary

2.4.1. The importance of vocabulary knowledge

Vocabulary constitutes a significant part of a language. Meanings and ideas are conveyed by words in a language. As Wilkin (1972) stated, communication cannot occur without the presence of words (as cited in Mishan & Timmis, p. 141). Thornbury (2002) mentions that even though vocabulary was not given priority in most language courses’ curricula in the past, the importance of knowing vocabulary was revisited with the development of communicative approach (p. 14). Thornbury (2002) adds that it was understood that words provide meaning and communication, and as a result, vocabulary became a learning objective and found a place in coursebook syllabuses (p. 14). Recognizing the role of lexical syllabus and the lexical chunks in language learning and achieving fluency has also raised awareness of the reasons why vocabulary should be given special attention (Thornbury, 2002, p. 14).

Folse (2004) points out the reason why vocabulary is as important as other areas in language learning by emphasizing the importance of comprehensible input (p. 2). He further explains that when a learner has too many unknown words while listening or reading in the target language, that language cannot be comprehensible and cannot even be an input for the learner (Folse, 2004, p. 2). He adds that learners rely on vocabulary knowledge to be good L2 writers, listeners, and speakers (Folse, 2004, p. 2). It is mentioned by Folse (2004) that effective communication has been given emphasis in language teaching, and vocabulary knowledge should be present for effective communication (p. 10). Apart from

communicative purposes, Folse (2010) draws attention to the importance of vocabulary for academic achievement, which relies highly on vocabulary knowledge (p. 140).

Zimmerman (1997) indicates that vocabulary can be a linguistic barrier for L2 learners in their academic studies, as conveying a clear message depends on their vocabulary knowledge rather than grammatical correctness (p. 122). For this reason, Zimmerman (1997) argues that special attention should be given to vocabulary instruction in EFL settings (p. 122).

As a result, it can be understood that vocabulary knowledge is an indispensable part of learning another language. Therefore, it is essential that vocabulary teaching should be a part of a language lesson for both communicative and academic purposes.

2.4.2. Vocabulary instruction

Vocabulary learning constitutes an important part of language learning. Even though it is considered as a sub-skill, it is an essential element to activate skills such as listening, reading, speaking and writing. According to Schmitt (2000) vocabulary teaching can happen in two ways: explicitly and incidentally (p. 145). Schmitt (2000). states that there should be a balance between the activities that teach words in both ways in a language classroom (p. 145).

Explicit vocabulary teaching is especially necessary for beginner students to build word knowledge that they can make use of in different contexts (Schmitt, 2000, p. 120). Integrating new words with old, providing numerous encounters with the word, promoting a deep level of processing, facilitating imaging, connecting words to the learners' experiences, using different techniques and encouraging independent learning strategies are major principles of explicit vocabulary teaching (Sökmen, 1997, as cited in Schmitt, 2000, p. 147).

Incidental vocabulary teaching provides learners opportunities to meet words in different contexts and help them remember those words in the long term (Schmitt, 2000, p. 120). In this approach, learners get as much exposure to the language as they can in different contexts (Schmitt, 2000, p. 120).

Folse (2011) states that the best way to teach vocabulary to EFL learners is to teach it explicitly (p. 363). He argues that, unlike native speakers who learn vocabulary naturally over time, learners have time constraints that make it difficult to learn the words through natural exposure. To fill in the lexical gap and learn words more effectively, they need to be

instructed explicitly (Folse, 2011, p. 363). In addition, Folse (2011) draws attention to the fact that vocabulary should be practiced through a variety of activities (p. 364). For him, the number of times a learner is exposed to a word is important for permanent learning. Folse (2011) proposes short interactions with the words during lessons, such as asking learners questions that provide interactions with the words (p. 364).

Zimmerman (1997) points out that vocabulary learning is a complex task that includes several aspects, such as having knowledge of a word's syntactic use, collocations, situational limitations, and its different forms (p. 122). Zimmerman (1997) states that vocabulary instruction should cover several different dimensions of vocabulary knowledge (p. 123). For this reason, Zimmerman (1997) draws attention to the role of reading and interactive vocabulary instruction as a result of the study conducted among post-secondary L2 students preparing for university entrance (p. 132). Learners have the chance to meet the academic vocabulary in meaningful contexts thanks to reading (Zimmerman, 1997, p. 133). It is also highlighted that encountering the target words in natural contexts enables learners to have knowledge about various meanings and uses of those words and their relationships with the other words (Zimmerman, 1997, p.133). Lastly, it is indicated that having the opportunity to use the target words is highly valued by the learners (Zimmerman, 1997, p. 136).

2.4.3. Technology assisted methods for vocabulary instruction

Advances in technology changed the way vocabulary was presented and taught in EFL classrooms. New strategies for teaching vocabulary are applied by EFL teachers with the help of technology. A new term called 'eVoc' appeared to define these technology-based strategies that are used to improve students' vocabulary knowledge (Dalton & Grisham, 2011, p. 306). This term also suggests that when technology is present in instruction, it can evoke the learning potential of learners (Dalton & Grisham, 2011, p. 306). One of the eVoc strategies presented by Dalton and Grisham (2011) is using graphic organizers and visual representations to display word relationships (p. 308). Preparing word clouds and mind maps on Web 2.0 tools such as Wordle and Wordsift is one of the suggestions to present verbal and visual displays at the same time in order to engage students to find out the relationships and meanings of the words (Dalton & Grisham, 2011, p. 309). Another strategy by Dalton and Grisham (2011) is the utilization of online vocabulary games such as Kahoot, crossword puzzle, picture - word matches, and word scrambles, which promote both individual practice and collaboration (p. 310). Next, learners can also benefit from media such as videos,

animations, graphics, podcasts, and audio as they represent and express the several uses of words in different contexts (Dalton & Grisham, 2011, p. 311). In addition to these tools mentioned, there are various applications, social media websites, and toolbars that inform learners about words (Dalton & Grisham, 2011, p. 312). Lastly, Dalton and Grisham (2011) highlight the importance of reading while learning vocabulary and they suggest getting help from online dictionaries when an unknown word is encountered during the reading process instead of asking the teacher (p. 312). Apart from this, reading provides the opportunity for incidental vocabulary learning and digital texts, which offer up-to-date information and variety for different learner interests and levels, are available for this purpose (Dalton & Grisham, 2011, p. 313).

Sharma and Unger (2016) emphasize the significance of the utilization of Web 2.0 tools in vocabulary teaching since they generate engaging, relevant, interesting and meaningful vocabulary learning activities (p. 17). Sharma and Unger (2016) state that Web 2.0 tools help learners modify the way they learn words by providing them with a lot of opportunities for individual and collaborative practice, such as games, mind maps, word clouds, graphic organizers, videos etc. (p. 20). Finally, Sharma and Unger (2016) mention that Web 2.0 tools are beneficial for fast and meaningful vocabulary learning and vocabulary retention (p. 27).

2.5. Motivation

2.5.1. Motivation theories

Motivation plays a significant role in language learning, so it is important to define and explain it. Various studies attempt to explain what motivation means. Gardner (2007) states that it is difficult to define motivation; however, he lists some characteristics of motivated people as being persistent, goal-directed, and attentive; having expectancy, self-confidence, reasons and desires; and showing positive affect (p. 10). He goes on to mention that motivation is not a basic structure because it consists of cognitive, behavioral and affective factors. There are two types of motivation related to second language acquisition: language learning motivation and classroom learning motivation (Gardner, 2007, p. 10). Language learning motivation refers to an individual's feature to learn the language, however; the latter is connected to the factors such as classroom situation, an individual's perception of the task, course material, content and facilities (Gardner, 2007, p. 11). Gardner

(2007) adds that it is not an easy task to differentiate between these two types of motivation as they are interrelated and work together (p. 3).

Gardner proposed an approach to describe motivation, and this approach conceptualizes motivation in three aspects: integrativeness, attitudes toward the learning situation and motivation (Dörnyei, 2001, p. 16). Integrativeness refers to learner's integrative orientation, interest in foreign languages and attitudes toward L2 community while attitudes toward learning situation is associated with the L2 teacher and the course (Dörnyei, 2001, p. 17). Lastly, motivation is related to motivational intensity, desire to learn L2 and attitudes toward learning the language (Dörnyei, 2001, p. 17).

Dörnyei (2001) states that motivation is related to “why people decide to do something, how hard they are going to pursue it, and how long they are going to sustain the activity” (p. 7). Dörnyei's L2 motivation approach focuses on three levels: the language level, the learner level and the learning situation level (Dörnyei, 2001, p. 18). The language level is connected with different features of L2, culture, community, pragmatic values and benefits whereas learner level is related to characteristics of the learner that affect the learning experience (Dörnyei, 2001, p. 19). The last one, the learning situation level, is about the syllabus, teaching materials, teaching method, the tasks, the teacher's personality, and the characteristics of the learner group (Dörnyei, 2001, p. 19).

Deci and Ryan (1985) formed the self-determination theory in order to explain motivation and stated that self-determination is an individual's ability to choose, and it is not driven by any forces or pressures (p. 38). They continue by adding that a person is aware of his/her needs and external events, and he/she makes decisions based on these items. Within this theory, they propose two types of motivation: intrinsic and extrinsic motivation. While intrinsic motivation is related to one's own satisfaction, the latter is associated with an action that has a purpose or a result (Deci & Ryan, 1985, as cited in Dimitroff et al., 2018, p. 2). As a result, it is emphasized that both intrinsically motivated behavior and extrinsically motivated behavior are affected by self-determination, and this concept is important for understanding these two types of motivation (Deci & Ryan, 1985, p. 40).

2.5.2. ARCS model of motivational design

Keller (2010) describes motivation as “what people desire to do; what people choose to do and what they commit to do” (p. 3), and he developed ARCS model of motivational design in order to provide guidance to arouse learner motivation and to stimulate and sustain

it during teaching. According to this model of motivational design, there are four areas that affect motivation: Attention, relevance, confidence, and satisfaction (Keller, 2010, p. 45). The first component, attention, is related to raising curiosity and interest in learners (Keller, 2010, p. 45). In order to arouse curiosity, teachers can make use of unexpected events or mentally stimulating situations and use a range of teaching strategies that keep learners interested in the lesson (Keller, 2000, p. 2). The second component of the model is relevance, and it suggests that learners should relate the instruction to their personal goals (Keller, 2010, p. 45). The lesson should be in line with the aims of learners, their interests, and their learning styles (Keller, 2000, p. 2). According to Keller (2000) relevance can be achieved by relating the lesson content to the learners' prospective career plans and academic needs (p. 2). The third one is that learners should have confidence so that they can learn and achieve success in that specific area (Keller, 2010, p. 45). To build confidence in learners, Keller (2000) suggests that setting clear objectives and displaying acceptable achievement models can help learners build confidence (p. 2). He continues by adding that learners should believe in the fact that their success is a result of their personal effort, not by chance. In other words, learners should have positive expectations towards success. The last item in the model is satisfaction. Keller (2010) explains that learners should be satisfied with the learning process in order to be able to continue learning in that specific area (p. 46). He adds that intrinsic and extrinsic factors can have an impact on satisfaction levels of learners. Extrinsic elements include grades, certificates and other material rewards, whereas intrinsic ones consist of feelings of self-esteem, respect, and competence (Keller, 2010, p. 46).

Keller (2000) highlights the importance of motivational analysis before preparing a lesson plan (p. 3). He draws attention to the fact that motivation increases performance only to a certain point. Keller (2000) states that learners can be under-motivated, which results from the fact that they are bored with the topic, and are not interested in it, or learners can be over-motivated as they are stressed and are trying to do a lot of things at the same time, so they cannot pay attention to the task (p. 5). Therefore, he emphasizes that the lesson should be designed to solve these specific problems while sustaining the desirable motivational levels. This is a 10-step approach proposed by Keller (2000) to integrate ARCS Model of Motivational design into a lesson plan; however, it has been found that the suggested process is complicated and time consuming (Keller, 2000, p. 7). Therefore, another team of teachers in Japan has introduced a simpler version of the plan (Keller, 2000, p. 8). The simpler plan included identifying key motivational characteristics of the learners,

content of the lesson, and materials to be used. After the evaluation of the data, teachers developed strategies to deal with motivational problems (Keller, 2000, p.8).

2.5.3. Integrating ARCS model of motivational design and technology in EFL instruction

In an EFL classroom, instructional materials and lesson plans can be prepared according to the principles set by ARCS Model of Motivational Design together with the use of technology in order to stimulate motivation and engage learners in the task. Annamalai (2016) designed mE-book for English language learners in a polytechnic language classroom. In order to attract the attention of the learners, Annamalai (2016) utilized multimedia elements like animations and soft sounds (p. 322). The content was made relevant to students' experiences and prospective careers with the help of video clips, analogies and scenarios (Annamalai, 2016, p. 323). The accessibility feature of the material enabled students to control mE-book and learn at their own pace, so that students were able to build confidence in sustaining their motivation (Annamalai, 2016, p. 323). To satisfy learners, the teacher gave positive feedback for each question, and a certificate was provided as a reward after finalizing all the tasks (Annamalai, 2016, p. 323). As a result of this study, Annamalai (2016) found out that mE-book, prepared according to the ARCS Model of Motivational Design, increased motivation levels of the students (p. 324).

Mirzaei et al. (2022) state that ARCS model of motivation can be used as a framework to integrate technology into an EFL lesson in order to stimulate learner motivation and interest. In their study, 'Integrating ARCS Motivational Model and Flipped Teaching in Classrooms: A Case of EFL Expository Writing', they studied impacts of ARCS-flipped teaching on EFL learners' expository writing and performance and motivation. 59 EFL learners participated in the study. The experiment group got instruction through flipped writing course in which ARCS model was integrated whereas the control group took courses face to face. The result showed that the ARCS - flipped group had better performance, increased motivation and engagement.

In their study 'Learning Foreign Language through an Interactive Multimedia Program: An Experimental Study on the Effects of the Relevance Component of the ARCS Model', Chang and Lehman (2002) studied effects of intrinsic motivation and integrated relevance enhancement on EFL learners in a lesson designed with computer-based interactive multimedia. A post-test and a motivational survey were applied after learners

completed the lesson. The results revealed that relevance enhancement strategies improved students' learning despite the differences in their intrinsic motivation levels. Also, students with higher intrinsic motivation performed better regardless of the treatment they got. Finally, the intrinsically motivated students who got instructions integrated with relevance strategies achieved the best as a result of the study.

Tandoğan (2019), in the study 'Investigating the Effectiveness of ARCS Based Instructional Materials Enhanced with Augmented Reality on ESP Vocabulary Achievement and Motivation' aimed to study the impacts of instructional materials developed according to ARCS model of motivation and improved with augmented reality (AR) on engineering students' ESP vocabulary knowledge and motivation. 67 upper-intermediate level students participated in the study, and it lasted for 6 weeks. The experiment group studied ESP vocabulary through a material developed according to ARCS model of motivation by using a mobile AR application. The control group learned that vocabulary without the application. Both groups took pretest and post-test, and the experiment group took the motivation survey, and at the same time, 10 of the learners were interviewed. At the end of the study, it was found that the experimental group had better results regarding vocabulary achievement, and their motivation level was higher than the control group, and they had a positive attitude towards such kind of material.

2.6. The Effect of Technology on Vocabulary Achievement and Motivation

There are various studies that investigate the effects of using online tools on students' vocabulary acquisition and motivation levels. Altun (2019), in his study 'Transforming Receptive Vocabulary Knowledge into Productive Vocabulary Through ICT Tools and Investigation of Students' Views', investigated the impacts of ICT tools, Quizlet and WordArt on the receptive and productive vocabulary knowledge of students and their perspectives toward them. Mixed method one group research design was adopted by the researcher. Students with the intermediate level at an engineering department at a university were the participants of the study. Pre-test, post-test, pre-writing, post receptive writing and post productive writing tasks were the means of collecting quantitative data. In order to obtain qualitative data, structured interviews were conducted. Findings of the study showed that students' success increased depending on the results of the post-test. It was also shown that Word Art was more effective than Quizlet in terms of using vocabulary productively. In terms of lexical density scores, students' vocabulary knowledge was affected positively by

the ICT tools. According to the qualitative findings, students had a positive attitude towards ICT tools. ICT tools created an enjoyable mood, provided repetition, increased permanency, and helped produce target vocabulary effectively. One drawback noted was that it sometimes became dull for the learners.

Brittingham (2022), in her study 'Using Multimedia Vocabulary Games to Improve Newcomer ESOL Students' Motivation and Vocabulary Acquisition', explored how multimedia learning platform, Quizlet, helped newcomer ESOL students learn English vocabulary. Mixed methods design was adopted in this study. The participants in the study were the newcomer ESOL students at Boiling Springs Middle School. The quantitative methods included a pre-test, post-test, weekly assessment, and weekly motivation surveys. The qualitative methods included observations and interviews. The study found that online quiz games motivated students to learn and helped them grow their vocabulary knowledge.

In the study 'The Effectiveness of Using Multimedia for Teaching Phrasal Verbs in Community College ESL Classes', Fu (2021) examined how effective was using multimedia instruction to teach phrasal verbs to ESL learners in community colleges. Mixed methods research design was used and 35 community college ESL students participated in the study. 22 students were in the multimedia treatment group and 13 of them were in the text-based comparison group. According to the quantitative findings, there was a significant difference between the comparison and treatment groups in terms of knowledge and learning engagement. Qualitative findings showed that phrasal verbs multimedia lessons were fun and interesting for the participants. Thus, it had positive effects on language learning.

Dağdeler (2018), in the study 'The Role of Mobile Assisted Language Learning (MALL) in Vocabulary Knowledge, Learner Autonomy and Motivation of Prospective English Language Teachers', aimed to explore the effectiveness of mobile applications to improve vocabulary knowledge and learner autonomy of prospective teachers of English and impact of them on the motivation of learners. The study was conducted in two state universities of Turkey and 73 prospective English language teachers participated in it. The study employed a quasi-experimental design which includes an experimental and a control group. Findings revealed that mobile applications proved to be effective for improving vocabulary knowledge for only short-term memory. The use of mobile applications and worksheets to improve productive vocabulary knowledge and learner autonomy showed no difference. Also, it was stated that learners found mobile applications motivating and helpful.

Alzaid (2018), in the study 'The Effects of Gamification Based Formative Assessment on Motivation and Vocabulary Acquisition in ESL Classroom', aimed to investigate the

effectiveness of technology game based formative assessment on vocabulary acquisition, perceived learning values, motivation and competence of ESL students. Two higher intermediate ESL classrooms participated in the study. Both qualitative and quantitative methods were used to gather data. It was revealed that technology and gamification in classroom formative assessment could improve vocabulary acquisition, motivation, and competence compared to traditional paper based formative assessment.

Cho (2021), in the study ‘Quizlet in the EFL Classroom: Enhancing Vocabulary Acquisition of Korean Middle School Students’, investigated perceptions of Korean middle school students on Quizlet and its effect on their vocabulary test results. 520 Korean EFL middle school students participated in the study, and they were divided into 2 groups as the experimental group and the control group. To collect data, a pre-test and a post-test, and a survey were conducted. The results revealed that students had a positive attitude towards Quizlet and their performance on vocabulary tests increased.

Acıkgöz (2019), in the study ‘Effects of Two Different Gamified Student Response Systems on EFL Students’ Vocabulary Achievement and Intrinsic Motivation’, aimed to investigate the impact of the gamified student’s response systems on students’ academic vocabulary achievement and what difference different GSRs make. Mixed methods design was employed in this study. It was carried out among A2 level preparatory school students. There were 2 experimental groups that used 2 different GSRs. Also, an interview was done with 10 of the students to find out their perceptions and support quantitative data. Findings indicated that GSRs improved students’ academic vocabulary achievement and students had a positive attitude towards them.

Çakır (2019), in the study ‘The Effect of Five Different Gamified Student Response Applications on Students’ Vocabulary Development and Intrinsic Motivation in EFL’, examined the difference in vocabulary acquisition levels of students who used gamified student response applications and traditional methods to learn vocabulary. Also, effects of GSRA on students’ intrinsic motivation were investigated. Finally, perceptions and thoughts of participants were explored. Mixed research design was implemented and 40 B1-B2 level students at a university in Turkey participated in the study. Findings indicated that GSRA had a positive effect on vocabulary learning. Students who used GSRA in the experimental group learned better and they found these applications fun, enjoyable and useful, adding that they had a positive influence on their intrinsic motivation.

CHAPTER 3

METHODOLOGY

In this chapter, research design, participants, data collection instruments, data collection procedures and normality tests are presented and discussed.

3.1. Research Design

In this study, quasi-experimental research design methods were adopted. Survey and experimental methods are used in order to collect data in this form of research design (Creswell, 2009, p. 137). In the first part of this study, a quasi-experimental design was applied. A quasi-experimental research design is applied when the researchers do not have the possibility to randomly assign participants in an educational setting (Dörnyei, 2007, p. 117). Rather than random assignment, naturally formed groups, such as classrooms, are chosen by the researchers (Creswell, 2009, p. 146). Therefore, convenience sampling was used to determine participants for this study (Creswell, 2009, p. 146). Two 11th-grade classes, both of which were instructed by the same teacher who willingly participated in the study, were chosen. Participants were not randomly assigned to the experimental group and the control group as they were the intact groups available to the researcher (Creswell, 2009, p. 149). The classes were determined as the experimental group and the control group based on the intention to minimize the disruptions to their regular schedules. The pre-test and post-test applications included both groups as a part of the quasi-experimental research model. In addition to pre and post-tests, survey methods were used to collect data related to motivation levels of the participants as a part of the quantitative data collection method.

3.2. Setting and Participants

The study was conducted at a high school in Turkey in the 2024-2025 fall semester. The participants were 11th-grade high school students. Convenience sampling was used to determine the participants in the study. Two 11th-grade classes participated in the study. Both classes were instructed by the same teacher who willingly participated in the study. Participants were not randomly assigned to the experimental group and the control group as they were the intact groups available to the researcher (Creswell, 2009, p. 149). One of the classes was considered an experimental group and the other one was the control group. The classes were determined as the experimental group and the control group based on the

intention to minimize the disruptions to their regular schedules. There were 21 students in the experimental group while there were 22 students in the control group. Hence, 43 students in total took part in the study. While the experimental group used the smart board and the online presentation tool Nearpod, the control group was taught using traditional methods such as books, worksheets and the board. In both groups, students' proficiency levels were intermediate, which was determined with the help of the pre-test before the experiment. They followed the same curriculum and the same coursebook with the same instructor.

3.3. Data Collection Instruments

In this study, quasi-experimental research design models were adopted to collect data. Therefore, vocabulary achievement tests as pre and post tests were used to compare the vocabulary learning success of participants in the experimental group and the control group. Pre-test and Post-test were prepared by the researcher and were applied before and after the treatment process. To find out about the impact of online presentation tools on motivation levels of students in both groups, Keller's (2010) Instructional Materials Motivation Survey (IMMS) that was adapted into Turkish by Kutu and Sözbilir (2011) was used.

3.3.1. Vocabulary achievement test

A vocabulary achievement test with 30 multiple choice questions was developed by the researcher. SPSS analyses were conducted to test the reliability and validity of the test. KR-20 coefficient value was found to be .87. This value showed that the test has an acceptable level of internal consistency (Pallant, 2020). A class hour, which is approximately 40 minutes, was given to the participants to answer the questions on the test. There were 3 absent students in the treatment group during the class hour when the pre-test was applied. However, those students could complete the tests within a class hour in the afternoon shift during the same day. The vocabulary items used to prepare the test were taken from the MEB book Spice Up for the 11th grade. Sentence completion with a word is the only question type in the test. Two subject matter experts, who are both EFL instructors, checked the questions in the pre-test. The pre-test was applied before the 4-week treatment process began for the purpose of comparing the vocabulary knowledge of participants in the experimental group and control group. In order to analyze the pre-test results of both groups, IBM SPSS (Statistical Package of Social Sciences) version 25 was performed.

After the 4-week treatment process, the same vocabulary achievement test was applied as a post-test to both groups. The main aim of implementing a post test was to find out if there was a statistical difference between the pre-test and post-test results after the treatment. Besides this, it was aimed at investigating the statistical differences between the post-test results of treatment and control groups after the treatment process. The results of the tests were analyzed using the IBM SPSS (Statistical Package of Social Sciences) version 25.

3.3.2. Instructional materials motivation survey

After finalizing the 4-week treatment process, The Turkish version of Keller's (2010) Instructional Materials Motivation Survey that was adapted into Turkish by Kutu and Sözbilir (2011) was conducted within the treatment group to investigate the motivation levels of students. The purpose of conducting the Turkish version of the survey was to prevent any misunderstandings and to make students clearly understand the items in the survey. The survey consists of 24 items and is designed with a Likert scale ranging from 1 to 5. Scales are described in the following way: Scale 1 "Not true", scale 2 "Slightly true", scale 3 "Moderately true", scale 4 "Mostly true", scale 5 "Very true".

The original version of the survey was developed by Keller in 1987. It consists of 36 items in total including 4 subcategories described as attention (12 items), relevance (9 items), confidence (9 items), and satisfaction (6 items). Within the Turkish version of the survey, the number of items is reduced to 24 because of the adaptation into Turkish, validity and reliability studies conducted by Kutu and Sözbilir (2011). Because of the data obtained from the analyses during the adaptation process, survey was divided into two dimensions as attention-relevance and confidence-satisfaction (Kutu & Sözbilir, 2011, p. 308). Items 1., 2., 3., 4., 5., 6., 7., 8., 9., 10., and 11. were included in the attention-relevance dimension while the items 12., 13., 14., 15., 16., 17., 18., 19., 20., 21., 22., 23., and 24. were included in the confidence-satisfaction dimension (Kutu & Sözbilir, 2011, p. 308). Cronbach Alpha reliability value of the survey was found to be .83 and it was stated that it was adequate for a survey's reliability (Kutu & Sözbilir, 2011, p. 308). It was also stated by Kutu and Sözbilir (2011, p. 308) that this survey could be used to investigate the impact of instructional materials on both high school and university students' motivation.

3.4. Normality Tests

3.4.1. Normality tests for vocabulary achievement tests

Before analyzing the data, the normal distribution of scores was determined. As there were less than 30 participants in each group, the Shapiro-Wilk test was used to check the normality assumption. Values for pre-test were presented in Table 3.1. P value for the experimental group is smaller than .05 ($P = .006 < .05$) This result suggests violation of the assumption of normality.

Table 3.1.

Shapiro-Wilk normality test for pre-test

	GROUP	Kolmogorov-Smirnov ^b			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Pre-Test	Control	.188	22	.041	.924	22	.093
	Exp	.196	21	.034	.858	21	.006

The same procedure was followed for the post-test and values were presented in Table 3.2. A Sig. Value for the control group suggests violation of the assumption of normality ($P = .001 < .05$).

Table 3.2.

Shapiro-Wilk normality test for post-test

	GROUP	Kolmogorov-Smirnov ^b			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Post-test	Control	.208	22	.014	.821	22	.001
	Exp	.154	21	.200*	.910	21	.055

Due to the violation of the assumption of normal distribution of the scores, non-parametric tests were conducted to analyze the data from pre-test and post-test scores.

3.4.2. Normality test for survey

The Shapiro-Wilk test of normality was conducted to assess the normality of the distribution of the scores. According to Table 3.3, Sig. Values are .078 and .353 respectively for control and treatment groups. Pallant (2020) states that a Sig. value of more than .05 indicates normality. Therefore, it can be concluded that the test results show the normality of the distribution of scores.

Table 3.3.

Test of normality for survey

	GROUP	Kolmogorov-Smirnov ^b			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Motivasyon	Control	.145	22	.200*	.921	22	.078
	Treatment	.111	21	.200*	.951	21	.353

Normal probability plots labelled as Normal Q-Q Plot also show the normal distribution of the scores. Pallant (2020) indicates that a straight line suggests a normal distribution. Figures 3.1 and 3.2 below show the normally distributed scores for the survey implemented within each group.

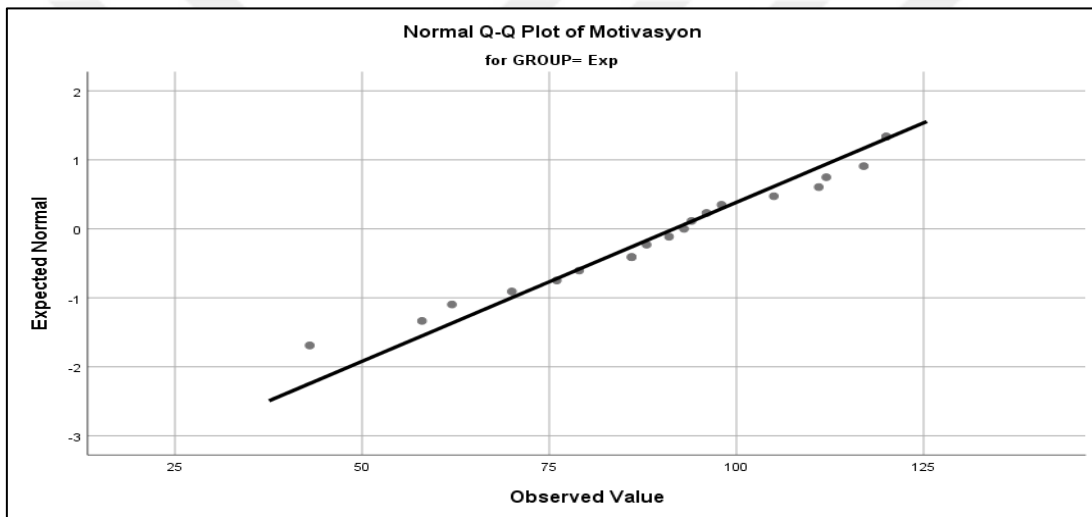


Figure 3.1. Normal Q-Q plot of motivation for experimental group

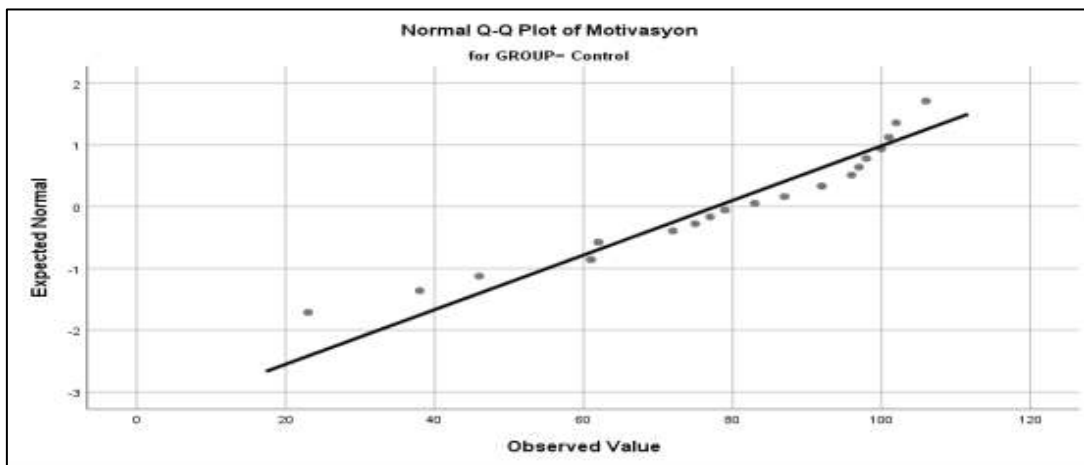


Figure 3.2. Normal Q-Q plot of motivation for control group

Additionally, the Detrended Normal Q-Q Plots were obtained for both groups and were shown in Figures 3.3 and 3.4 for the treatment and the control group respectively. Pallant (2020) states that there should not be a clustering of scores with most collecting around zero line. As can be seen from figures 3.3 and 3.4, scores for both groups are normally distributed.

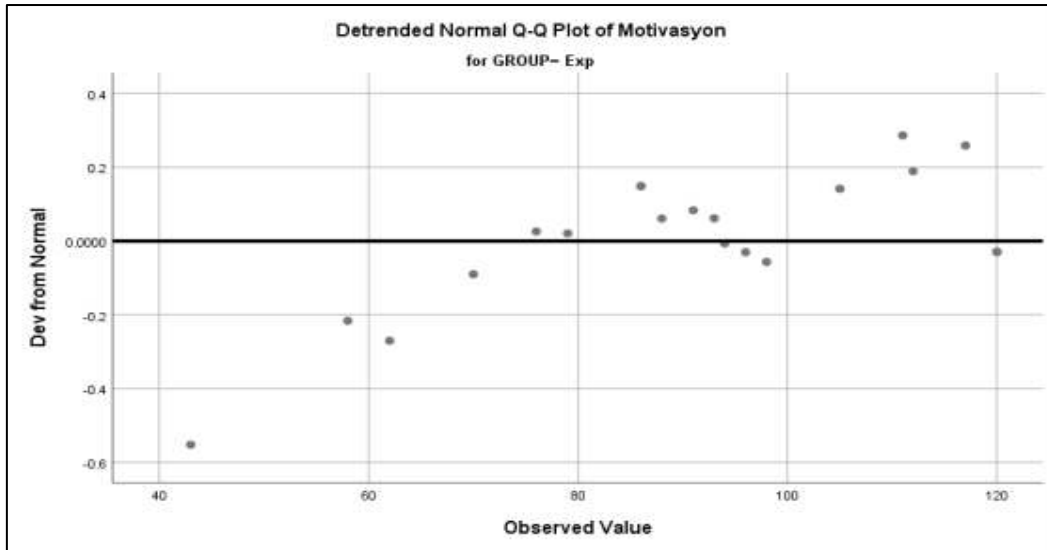


Figure 3.3. Detrended normal Q-Q plot of motivation for treatment group

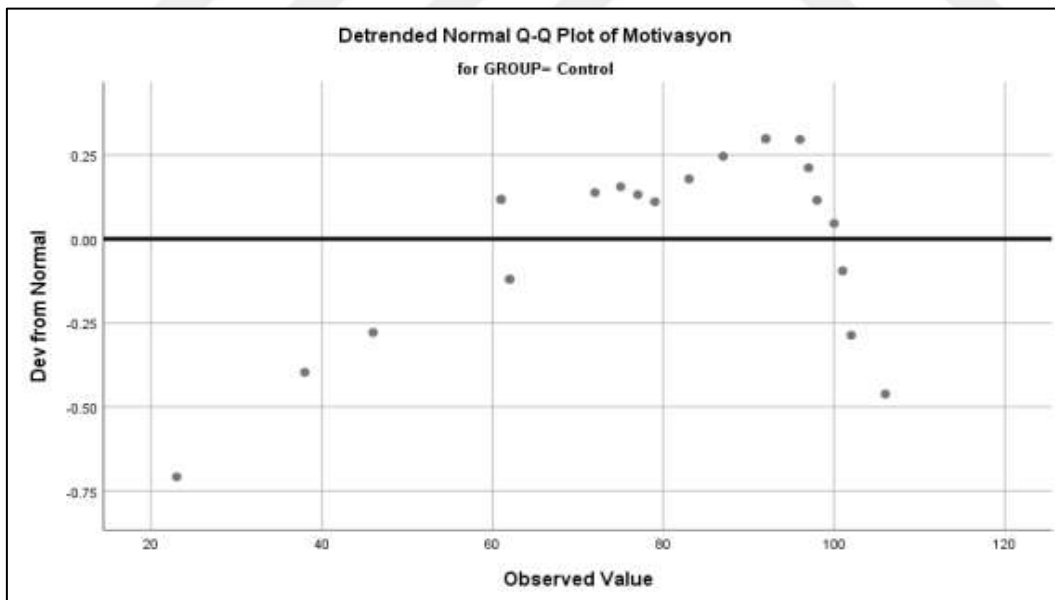


Figure 3.4. Detrended normal Q-Q plot of motivation for control group

Finally, a boxplot of the distribution of the scores for both groups are provided within Figure 3.5. The lines from the box illustrate the smallest and largest values.

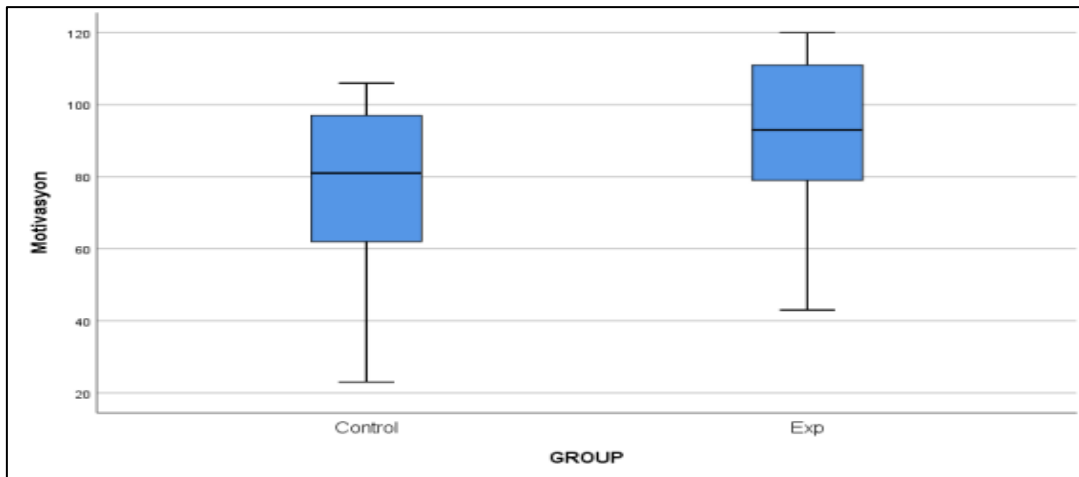


Figure 3.5. Boxplot of the distribution of the scores for both groups

The test of normality was also conducted to assess the normality of the distribution of the scores within attention-relevance category separately. Table 3.4 shows the results of the test of normality using the Shapiro-Wilk statistic. According to the table, Sig. Value ($p=.278>.05$; $p=.146>.05$) indicates that normality assumption was not violated.

Table 3.4.

Normality test for attention-relevance subcategory

	GROUP	Kolmogorov-Smirnov ^b			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Attention – Relevance	Control	.135	22	.200*	.947	22	.278
	Exp	.125	21	.200*	.931	21	.146

In order to find out if the prerequisites were met, normality tests for confidence-satisfaction subcategory were conducted. Shapiro-Wilk test results in Table 3.5 indicated that normality assumption was not violated ($P=.099>.05$; $P=.495>.05$).

Table 3.5.

Normality test for confidence-satisfaction subcategory

GROUP	Kolmogorov-Smirnov ^b			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Control	.136	22	.200*	.926	22	.099
Experimental	.093	21	.200*	.959	21	.495

3.5.Data Collection Procedures

The study was conducted at a state high school in Ankara, Turkey. Therefore, before conducting the study, the researcher got official permission from MEB to be able to conduct the research. After getting the approval from MEB, the researcher started to conduct the study. Firstly, a pre-test was implemented for both the experimental group and the control group to determine their vocabulary knowledge levels. Later, the intervention process began for both groups. After the intervention, a post-test was applied for both groups. The post-test was followed by the Instructional Materials Motivation Survey for both groups, which was prepared by Keller (2010) and adapted into Turkish by Kutu and Sözbilir (2011). After the data was collected, it was analyzed using IBM SPSS (Statistical Package of Social Sciences) version 25.

3.5.1. Experimental group

Before the treatment process began, participants in the experimental group were asked to complete the pre-test consisting of 30 multiple-choice vocabulary questions, and they were given a class hour to take the test. After analyzing the pre-test results, the intervention process started the following week after the pre-test. The experimental group was taken to the computer laboratory for one class hour in order to study target vocabulary through the use of the online presentation tool ‘Nearpod’.

The main focus of the course was vocabulary; however, target words were not presented in a list. The lesson plan had stages as warm-up, presentation, practice, production, and wrap-up. In the warm-up stage students were asked a question related to the theme of the vocabulary to be presented, so their schemata were activated before being exposed to the target words. Students were able to interact with each other using the features of the board, such as liking each other’s comments. Figure 3.6 shows a sample warm-up stage of the lesson.



Figure

3.6. Collaboration board

As Figure 3.7 shows, during the presentation stage, they were presented with the words using images or videos to capture their interest.

STRATEGIES FOR GUESSING THE MEANING FROM THE CONTEXT

4. Punctuation in the sentence can signal an explanation like commas “,...,” or dashes “-...-”.

“Because leaving her job immediately would be an uphill struggle, which is something very difficult to do, for her as she needed money for a living.”

In this sentence, “**uphill struggle**” means “**something very difficult to do**”

Figure 3.7. A sample presentation of vocabulary

After each presentation, basic practice parts including a fill-in-the-blanks, matching pairs or multiple-choice exercises followed the procedure. Figure 3.8 shows a sample fill-in-the-blanks activity.

Boşluk doldurma

You need to fold papers to do this activity: _____

You can go to mountains or forest and walk when doing this hobby: _____

You can turn an empty bottle into a vase with this hobby: _____

You need a laptop and a microphone so that you can record your voice for this hobby: _____

You need threads and a needle for this: _____

This hobby is related to writing with a beautiful style: _____

You can create various pictures with computer programs in this hobby: _____

You need to dive under water with a tube to do this: _____

You can wash your hands with the products you made in this hobby: _____

digital-art podcasting scuba-diving soap-making hiking calligraphy

origami embroidery upcycling

TAMAM

Figure 3.8. Fill in the blanks exercise

In the production part, as illustrated in Figure 3.9, students were asked an open-ended question and required to use newly gained vocabulary in sentences.

Soru

Read the text "Pursue Your Dreams" and its title again. What do you think "pursue your dreams" mean?

SOYADI ▼	SINIF	YANIT
_____		to chase what you want to be in the future
_____		do whatever you want dont be shy follow your dreams
_____		go your dreams
_____		Dont give up
_____		It means there is always hope and it is never late so we should try and never give up

Figure 3.9. Open ended question activity

Besides an open-ended question, the drawing feature of the tool was used in this phase, so that students could draw a representation of what they learned. Figure 3.10 displays the drawing activity.

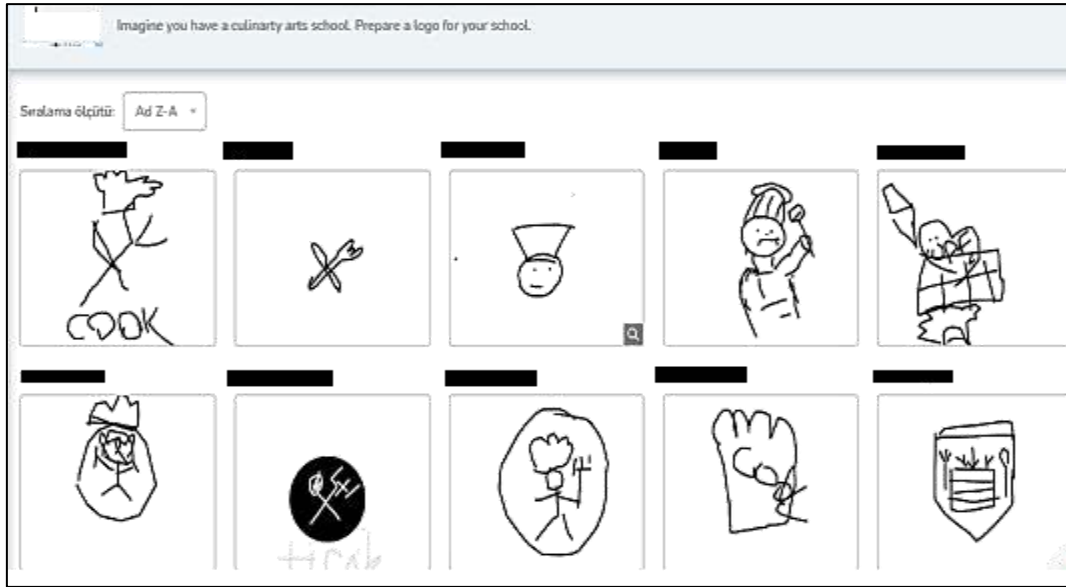


Figure 3.10. Drawing activity

The wrap up part involved a game ‘Time to Climb’ in which students could choose a character for themselves and then start answering the multiple-choice questions. This activity provided a sense of enjoyment and satisfaction in the students as they could see that they accomplished exercises with the target words they just learned, and they could get immediate feedback on their performance. The game board is represented in Figure 3.11.

Time to Climb Puanları			
SOYADI ▼	# DOĞRU	PUAN	SAYILAR
██████████	4/5	80%	3532
██	5/5	100%	3665
██████████	5/5	100%	3665
██████████	4/5	80%	3333
██	4/5	80%	2932
██████████	5/5	100%	3565

Figure 3.11. Time to climb board

3.5.2. Online course presentation designed according to ARCS motivational design model

The course design for the experimental group was prepared in line with the ARCS Motivational Design Model strategies and their subcategories. Normally, ARCS-based course design is a comprehensive process that includes 10 steps. It requires an in-depth analysis of the audience and the learning environment, and it works better for large-scale projects with a team of people working to enhance a whole course (Keller, 2010, p. 269). A simplified ARCS model design process developed and validated by Suzuki (Keller & Suzuki, 2004) was adopted to prepare the course design for this study. Keller (2010, p. 269) stated that this simplified approach fits better for a single lesson designed by an instructor. In this approach, a simplified design matrix developed by Suzuki (Keller & Suzuki, 2004) was used to identify key motivational characteristics of learners, the content area to be taught, and hardware and software to be used (Keller, 2010, p. 269). The simplified design matrix with motivational tactics for the development of this course is shown in table 3.6. ‘Plus’ and ‘Minus’ signs in each of the entries show if it is a positive or a negative motivational characteristic. Within this study, the motivational problem was related to the attention-relevance category, so motivational tactics were given to enhance the attention levels of students. However, motivational tactics were also determined for the other categories for the purpose of sustaining the motivation levels of the students related to those areas.

Table 3.6.

ARCS simplified design matrix

Design Factors	ARCS Categories			
	Attention	Relevance	Confidence	Satisfaction
Learner Characteristics	Required course (-)	Commitment to learn English (+)	Intermediate level, grade 11 (+)	Students know each other (+)
Learning Task: Vocabulary	Arduous (-)	Is it useful for future studies/ daily life? (-)	Some familiar words (+)	Learning outcome (+)

(Table 3.6. continued)

Table 3.6. (Continued)

ARCS simplified design matrix

ARCS Categories				
Design Factors	Attention	Relevance	Confidence	Satisfaction
Medium: Computer	A familiar tool for learning (-)	Frequent use in daily life (+)	Internet connection (+)	Easy to use (+)
Courseware Characteristics: Online Presentation Tool	New, interesting features (+)	Self-learning opportunities (+)	Easy to use (+)	Immediate feedback, sense of enjoyment and accomplishment (+)
Motivational Tactics for the Lesson	Ask warm up questions and use multimedia to arouse interest Use a mediated presentation with multimedia for a change of pace. Add variety of activities	Set the objectives of the lesson at the beginning. Ask personally relevant questions/ student perceptions	Start with basic exercises and continue with more challenging ones.	Use praise to support intrinsic motivation Give students application opportunities.

How these motivational tactics were integrated with instructional tactics according to main categories and subcategories of ARCS Motivational Design Model are represented in the tables 3.7, 3.8, 3.9, 3.10 below.

Table 3.7.

Implementation of instructional tactics according to ARCS motivational design model:
attention category

ATTENTION		
Perceptual Arousal	Inquiry Arousal	Variability
Warm up questions were asked to create schemata about the topic of the lesson.	Pictures were shown and students were asked to make predictions based on the pictures to increase their curiosity levels on the related topic. Also, videos were sources utilized to create a sense of curiosity about what was coming next.	A mixture of activities provided by the tool such as videos, polls, quiz, drawing, discussion board, fill-in-exercises, matching pairs and games were used to sustain attention of the students.

Table 3.8.

Implementation of instructional tactics according to ARCS motivational design model:
relevance category

RELEVANCE		
Goal Orientation	Motive Matching	Familiarity
At the beginning of the lesson, course objectives are clearly set and presented to students. Students are asked questions to describe their own perceptions on a given topic by using the target words they learned. Also, students are asked to complete activities with which they could use target words and connect the activity with their own lives.	Games and quizzes were used to foster the need for achievement in students. Apart from promoting competitive feeling, the collaboration board feature was used to make students work together to brainstorm ideas on a given topic by using the target words.	Students are asked to describe their own experiences by using the target words about the topic of the unit.

Table 3.9.

Implementation of instructional tactics according to ARCS motivational design model: confidence category

CONFIDENCE		
Learning Requirements	Success Opportunities	Personal Control
Students were informed about the course objectives at the beginning of the lesson. The meanings of the words and their part of speech are presented with definitions, images and gifs. Before they were asked to complete exercises, they knew what was expected by them in this way.	More basic exercises instead of challenging competitions such as fill-in-the-blanks, matching pairs, and open-ended questions were provided to students. In this way, they could get feedback and see their own learning performance. After these basic exercises, competitions were held.	Open-ended questions let them provide a variety of answers to a question, so they could have personal control to succeed. Positive corrective feedback was given to students at the end of the activities to help them see their mistakes.

Table 3.10.

Implementation of instructional tactics according to ARCS motivational design model satisfaction category

SATISFACTION		
Natural Consequences	Positive Consequences	Equity
The relevance of the course was established at the beginning and kept throughout the course. Students had the chance to see that they were able to use newly acquired vocabulary in different contexts related to their own experiences and perceptions. Accomplishment as a result of the games and quizzes also provided satisfaction.	There were not any rewards, grades or bonuses for completing tasks in the course. However, students were praised for active participation.	All the students took the same vocabulary achievement test as pre-test and post-test. Neither students received a specific prize at the end of the course nor were graded according to their performance.

3.5.3. Control group

At the beginning of the process, students in the control group were asked to take the pre-test which was also taken by the experimental group. Throughout the process, the control group learned the same vocabulary items as the experimental group learned. However, the course design for this group was not prepared according to ARCS Motivational Design Model, and they did not use any online presentation tools. They got the vocabulary instruction with traditional methods using their coursebooks, worksheets and dictionaries. At the end of the 4-week process, the control group took the post-test and Instructional Material Motivational Survey, which were taken by the experimental group.

3.6. Data Analysis

This research employed a quasi-experimental study method. The quantitative data obtained from the research was analyzed using IBM SPSS (Statistical Package for Social Sciences) version 25. Descriptive statistics were used to determine mean scores and standard deviations for each test applied throughout the study. The Shapiro-Wilk Test of Normality was applied before analyzing the data. The scores for the pre-test and the post-test were not normally distributed. Therefore, non-parametric tests, Mann-Whitney U test and Wilcoxon Signed Ranks test, were conducted. While the Mann-Whitney U test was used to compare results between the experimental group and the control group, Wilcoxon Signed Ranks test was utilized to compare scores within each group itself.

For the second part of the study, after checking that scores were normally distributed for the Instructional Materials Motivation Survey, an independent samples t-test was applied to examine the differences between the experimental group and the control group. Levene's test was used to check whether equality assumptions were met or not. After that, the t-test results were compared to check whether there was a significant difference between the two groups. The P-value was determined as .05.

3.7. Limitations of the Study

Initially, this study included a 4-week treatment process, but it could have been longer to provide a long-term permanency on vocabulary learning. A delayed post-test could have been conducted to test the retention of the target vocabulary items. Because of the

participants' intense exam schedule, there was not enough time to carry out a longer treatment process and a delayed post-test.

Secondly, a mixed methods research design could have been adopted for more in-depth research. However, due to time constraints, the researcher hesitated to implement it.

Thirdly, the participants may not have concentrated on the survey items while completing it, which may have interfered with the results of the survey.

In addition, the study could have been conducted using a different online presentation tool.

Finally, this study was conducted at a high school among 11th-grade students, but the results cannot be generalized to other student groups studying at different levels and different educational environments.



CHAPTER 4

FINDINGS

This section includes findings of vocabulary achievement tests as pre-test and post-test, and Instructional Materials Motivation Survey, respectively.

4.1. Comparison of Pre-test Results of Experimental Group and Control Group

After the data was collected, pre-test results of both groups were compared to see whether there were any differences between vocabulary knowledge of the students in experimental and control groups. The Mann-Whitney U test was conducted to compare the scores of pre-tests for experimental group and control group. The sample size for the experimental group was 21 and it was 22 for the control group.

As it was reported in table 4.1, mean score for the experimental group ($M= 24.67$, $SD= 4.498$) was higher than control group's score ($M= 23.45$, $SD= 4.667$). However, the Mann-Whitney U test was carried out to find out whether there was a statistically significant difference between each group's vocabulary knowledge.

Table 4.1.

Descriptive statistics of pre-test results

		GROUP	N	Mean	Std. Deviation	Std. Error Mean
Pre-Test	Experimental		21	24.67	4.498	.982
	Control		22	23.45	4.667	.995

According to Table 4.2, Mann-Whitney U test results revealed that there was no significant difference between two groups' pre-test scores ($P= .305 > .05$). It was observed that vocabulary achievement levels of both groups were similar before the start of the treatment procedure.

Table 4.2.

Mann-Whitney U test of pre-test results

GROUP	N	Mean Rank	Sum of Rank	Z	P
Experimental	21	24.00	504.00	-1.026	.305
Control	22	20.09	442.00		
Total	43				

4.2. Comparison of Pre and Post Test Results

In order to answer the question “Does ARCS based vocabulary instruction with an online presentation tool contribute to students’ vocabulary achievement?”, both groups’ vocabulary achievement test results were analyzed and compared in this section. First, pre-test and post-test results of experimental group were compared to check whether there was an improvement within the group itself. Later, the same procedure was followed for the control group. The Wilcoxon Signed Ranks test was implemented for the comparison of results within each group.

4.2.1. Pre and post test results of experimental group

The experimental group was subjected to pre-test before the experimental procedure and a post-test after the process at the same time as the control group. In order to compare pre-test and post-test results of the treatment group, Wilcoxon Signed Ranks test was conducted.

According to the descriptive statistics reported in table 4.3, mean score for the post test (M= 26.76, SD= 2.682) was higher than the mean score for the pre-test (M= 24.67, SD= 4.498).

Table 4.3.

Descriptive statistics for pre-test and post-test results of experimental group

	Mean	N	Std. Deviation	Std. Error Mean
Pre-Test	24.67	21	4.498	.982
Post-test	26.76	21	2.682	.585

It can be seen in Table 4.4 that probability value is .024, which is less than .05 ($P = .024 < .05$). It can be assumed that there is a significant difference between the pre-test and post-test results. Therefore, it can be concluded that the treatment process contributed to the vocabulary knowledge of the group.

Table 4.4.

Wilcoxon signed ranks test for experimental group

Pre/Post Test	N	Mean Rank	Sum of Rank	Z	P
Negative Ranks	4 ^a	7.25	29.00	-2.263 ^b	.024
Positive Ranks	13 ^b	9.54	124.00		
Ties	4 ^c				
Total	21				

4.2.2. Pre and post test results of control group

The control group took the pre-test before the intervention process. While the treatment group got the vocabulary instruction through an online presentation tool, the control group was instructed with traditional methods for vocabulary teaching. After the process was completed, the control group took the same post-test as the experimental group at the same time. According to descriptive statistics in table 4.5, there was a difference between the mean scores of the pre-test ($M = 23.54$, $SD = 4.667$) and the post-test results ($M = 26.27$, $SD = 4.108$).

Table 4.5.

Descriptive statistics for pre-test and post-test results of control group

	Mean	N	Std. Deviation	Std. Error Mean
Pre-Test	23.45	22	4.667	.995
Post-test	26.27	22	4.108	.876

In Table 4.6, data obtained from Wilcoxon Signed Ranks test indicated that probability value, P value was .000, which was less than .05 ($p=.000<.05$). It can be assumed that there was a significant difference between the pre-test and post-test results. Therefore, it can be concluded that the control group also made progress in vocabulary learning although being instructed with traditional vocabulary teaching methods.

Table 4.6.

Wilcoxon signed ranks test for control group

Pre/Post Test	N	Mean Rank	Sum of Rank	Z	P
Negative Ranks	Negative Ranks	1 ^a	5.50	-3.637 ^b	.000
Positive Ranks	Positive Ranks	18 ^b	10.25		
Ties	Ties	3 ^c			
Total	Total	22			

4.2.3. Comparison of the post-test results of experimental group and control group

After conducting the pre-test and determining equality between two groups, the experiment process started. As the treatment group got vocabulary instruction using an online presentation tool, the control group got vocabulary instruction through traditional methods. After the 4-week intervention process was completed, both groups had taken the same post-test at the same time. In order to find out whether there was a statistically significant difference between the post-test scores of the experimental group and control group, descriptive statistics were analyzed, and the Mann-Whitney U test was conducted.

According to descriptive statistics in table 4.7, it can be seen that the mean score of the treatment group was $M= 26.76$ with $SD= 2.682$, and the mean score of the control group was $M= 26.27$ with $SD= 4.108$.

Table 4.7.

Descriptive statistics for comparison of pre-test and post-test results

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
Post-test	Experimental	21	26.76	2.682	.585
	Control	22	26.27	4.108	.876

According to Mann-Whitney U test results shown in Table 4.8, P value is .806 ($p = .806 > .05$). This result shows that there is no statistically significant difference between the post-test scores for treatment and control groups. Therefore, it can be argued that both groups made progress in vocabulary learning, and using online presentation tools did not cause a statistically significant difference between experimental group and control group.

Table 4.8.

Comparison of post-test results of treatment and control group with Mann-Whitney U test

GROUP	N	Mean Rank	Sum of Rank	Z	P
Experimental	21	21.52	452.00	-.245	.806
Control	22	22.45	494.00		
Total	43				

4.3. Instructional Materials Motivation Survey Results

When the vocabulary instruction process was finalized for both groups, participants in both groups took the same post-test. After the implementation of the post-test, the Turkish version of Instructional Materials Motivation Survey, designed by Keller (2010) and adapted into Turkish by Kutu and Sözbilir (2011), was conducted to compare motivation levels of the participants in both groups.

4.3.1. Independent samples T-test results of survey for experimental and control groups

Independent Samples T-test was conducted to answer the research question “Does ARCS based vocabulary instruction with an online presentation tool affect students’ motivation?”

In Table 4.9, it was seen that there was a significant difference between the mean scores for the treatment (M= 91.67 SD= 21.699) and the control group (M= 77.73 SD= 22.615).

Table 4.9.

Descriptive statistics of instructional materials motivation survey as a whole

GROUP	N	Mean	Std. Deviation	Std. Error Mean
Experimental	21	91.67	21.699	4.735
Control	22	77.73	22.615	4.822

According to Table 4.10, Sig. Value for Levene’s Test for Equality of Variances is .746 ($p = .746 > .05$). This result means that equal variances for both groups are the same. Therefore, Sig. (2-tailed) value for the line equal variances assumed is considered to find out if there is a significant difference between two groups within the t-test for Equality of Means. According to Table 4.10, Sig. (2-tailed) value for the line Equal variances assumed is .046 ($p = .046 < .05$). Thus, this result shows a significant difference between motivation scores for treatment and control groups.

Table 4.10.

Comparison of instructional materials motivation survey results for both groups with independent samples T-test

	Levene’s Test for Equality of Variances		T-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
Equal variances assumed	.106	.746	2.061	41	.046
Equal variances not assumed			2.063	40.998	.046

A further analysis was conducted to see if there was a significant difference between the mean scores of treatment group and control group related to subcategories of motivation; attention-relevance and confidence-satisfaction. Table 4.11 shows the mean scores for attention-relevance dimension. It is seen that the mean score for the experimental group (M= 42.05, SD= 11.029) is higher than the control group (M= 33.91, SD= 12.505).

Table 4.11.

Descriptive statistics of attention-relevance subgroup

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
Attention-Relevance	Experimental	21	42.05	11.029	2.407
	Control	22	33.91	12.505	2.666

Levene's test for equality of variances was conducted to check each group's variances within the attention-relevance dimension of the survey. According to Table 4.12, data had a Sig. Value of .568 ($p = .568 > .05$) which indicated that variances could be assumed equal. After Levene's test, an independent t-test for equality of means was conducted. According to this test, table 4.12 shows that there was a significant difference between the attention-relevance related scores for experiment and control group ($p = .029 < .05$). Attention-relevance related mean scores of the experiment group are higher than the control group.

Table 4.12.

Independent samples T-test for attention-relevance subcategory

	Levene's Test for Equality of Variances		T-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
Equal variances assumed	.332	.568	2.259	41	.029
Equal variances not assumed			2.266	40.755	.029

The same procedure was followed for the confidence-satisfaction subcategory of the survey. Descriptive statistics show that mean scores for confidence-satisfaction dimension are higher for the experiment group (M= 49.62 SD= 11.106) than the control group (M= 43.82 SD= 11.979) according to table 4.13.

Table 4.13.

Descriptive statistics confidence-satisfaction subcategory

GROUP	N	Mean	Std. Deviation	Std. Error Mean
Experimental	21	49.62	11.106	2.424
Control	22	43.82	11.979	2.554

When it was seen that scores were normally distributed, independent samples t-test was conducted as it is shown in table 4.14. According to results of Levene's test, variances for both groups could be assumed equal ($P = .978 > .05$). Following these procedures, as it was seen that preliminary requirements were met, independent samples t-test was analyzed. T-test for equality of means reported that there is no statistically significant difference between both groups scores for the dimension of confidence-satisfaction ($p = .108 > .05$).

Table 4.14.

Independent samples T-test for confidence-satisfaction subcategory

	Levene's Test for Equality of Variances		T-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
Equal variances assumed	.001	.978	1.645	41	.108
Equal variances not assumed			1.648	40.968	.107

In conclusion, this study was aimed at examining the impact of ARCS Based vocabulary instruction with an online presentation tool on EFL students' vocabulary achievement and motivation. For this purpose, a quasi-experimental study was conducted. In order to answer the first research question "Does ARCS based vocabulary instruction with an online presentation tool contribute to vocabulary achievement of students?", a vocabulary achievement test was applied before and after the 4-week treatment process. According to the data obtained from the tests, it was observed that vocabulary knowledge of students in the experimental group improved. It was also found out that students in the control group improved their vocabulary knowledge. There was not a statistically significant difference between the experimental group's and the control group's vocabulary achievement scores. Both groups had an improvement in terms of vocabulary knowledge. Next, in order to

answer the second research question “Does ARCS based vocabulary instruction with an online presentation tool affect motivation level of students?”, Instructional Materials Motivation Survey was implemented after the intervention. After the data analysis, it was revealed that there was a statistically significant difference between motivation scores of the experimental group and the control group. Students in the experimental group had a higher level of motivation when compared to the students in the control group. It was deduced that ARCS based vocabulary instruction with an online presentation tool improved student motivation.



CHAPTER 5

DISCUSSION

In this chapter, the findings of the study are discussed in line with similar studies.

5.1. Overview of the Study

The purpose of this study was to investigate the impact of using an online presentation tool for vocabulary instruction on students' vocabulary achievement and motivation. The study was conducted in a state high school in Ankara, Turkey. Before the treatment process began, participants in both the experimental and the control groups took the vocabulary achievement pre-test to find out whether they had similar vocabulary knowledge before the process. After that, the treatment process began. While the experimental group was taught with an online presentation tool according to the lesson plan prepared considering Keller's (1987) ARCS motivation design categories; attention, relevance, confidence and satisfaction, the control group learned vocabulary through traditional methods. ARCS design model was not applied to lesson plans for the control group. At the end of the 4-week treatment process, both groups took the vocabulary achievement post-test. Additionally, the Instructional Materials Motivation Survey was implemented within both groups to check whether their motivational levels differed due to the process. Finally, the data collected was analyzed to determine the impact of the online presentation tool on students' vocabulary achievement and motivation.

5.2. Effects of Online Presentation Tools on Students' Vocabulary Achievement

The first research question aimed to investigate the effect of ARCS-based vocabulary instruction with an online presentation tool on students' vocabulary achievement and check whether there was a major variation between the experimental and the control groups. In order to answer the first research question, "Does ARCS-based vocabulary instruction with an online presentation tool contribute to students' vocabulary achievement?", a vocabulary achievement test was applied before and after the 4-week treatment process. Upon conducting a pre-test prior to the intervention, it was revealed that both groups' vocabulary achievement levels were similar according to the obtained data. Thus, it was suggested that any noteworthy achievement difference between the two groups could be assumed to be the result of the instructional materials used. Following the 4-week treatment process, the post-

test was carried out for both groups to find out whether the treatment process caused an improvement in the vocabulary knowledge of students and whether vocabulary performance results of each group differed notably. It was found that both groups made progress, and their vocabulary knowledge improved. Also, results revealed that although both groups' mean scores increased, there was no enormous distinction between the experimental and the control groups' scores. Hence, it can be deduced that both instruction types were effective.

There are a few studies from which similar results were concluded. Başöz and Çubukçu (2014) found that computer-assisted instruction did not reveal a major difference between both groups of students' vocabulary achievement scores, and both teacher-led and computer-assisted teaching methods had a positive effect on students' vocabulary learning (p. 53). The findings of this study related to digital tools' effect on vocabulary achievement are also in line with Eglash's (2020) study, which suggested that digital methods had no substantial impact on students' academic achievement (p. 25). In addition to these studies with similar results, Bagheri et al. (2012) also studied effects of Call based vocabulary instruction and concluded that both Call-based and non-Call based methods proved to be effective and there was not an important shift between each method for vocabulary teaching (p.744). Similarly, Merzifonluoğlu and Tulgar (2022) concluded that technology-integrated language learning did not lead to a significant difference between the two groups because of their intervention process, as desired level of vocabulary development could not be observed (p. 63).

The findings of this study contradict several studies in literature. Hao et al. (2021) point out that vocabulary learning could happen more efficiently with technology-assisted methods (p. 661). Kaboocha and Elyas (2018) studied the effects of YouTube on multimedia vocabulary instruction and obtained positive results in favor of using YouTube in vocabulary lessons (p. 72). There are also several more studies that concluded that technological tools have beneficial effects on vocabulary achievement (Tsai, 2020; Yu & Trainin, 2021; Sanosi, 2018; Hussain, 2018).

The insignificance of the results may have been caused by several factors. One of these factors could be the duration of the intervention. Sadeghi and Dousti (2014) supported this view in their study by pointing out that long-term exposure to computer-based activities yielded better results than short-term activities (p. 1699). Zhang & Song et al. (2011) stated that the use of digital tools in vocabulary learning could be effective through repeated exposures over a longer period (p. 211). This study lasted for 4 weeks, during which only

40-minute sessions could be held. Students did not have much chance to repeat activities using the online presentation tool.

Another factor could be because of learner characteristics. Roick et al. (2023) found that low self-efficacy beliefs and low self-regulation could influence this type of information delivery. As a result of this, some students may have needed more teacher assistance. Some students might not have preferred to complete tasks, the online presentation tool offered, at their own pace. Also, Astleitner and Lintner (2004) pointed out “seductive details” (Harp & Mayer, 1998) by explaining that some activities might be interesting but also disturbing at the same time, so coherency within the learning process might be disrupted. Therefore, it can be claimed that some students might have been disturbed by these activities. Additionally, as Astleitner and Lintner (2004) stated, ARCS-based instructional strategies might have increased the cognitive load of some students. As a result of this, they might have struggled to concentrate on the target words.

Finally, the technological infrastructure of the learning environment could have affected the treatment process. During this study, some students had internet problems on their devices. While the experimental group was dealing with technical problems at some stages of the intervention process, the control group could learn vocabulary with traditional methods more smoothly without interruption. This factor may have affected the results adversely. Therefore, it could be concluded that relying on technology to teach may yield inefficient outcomes due to such inconveniences.

5.3. Effects of Online Presentation Tools on Students’ Motivation

In order to answer the second research question “Does ARCS-based vocabulary instruction with an online presentation tool affect students’ motivation?”, the Instructional Materials Motivation Survey was implemented after the intervention. The second question was asked to find out whether ARCS-based vocabulary instruction with an online presentation tool affected students’ motivation. After vocabulary achievement post-test, the Instructional Materials Motivation Survey, which was formed by Keller (2010) and adapted into Turkish by Kutu and Sözbilir (2011), was implemented in both groups. Turkish version of the survey was used to avoid any misunderstandings. The findings revealed that the experimental group had higher motivation scores than the control group. Thus, it was concluded that ARCS-based vocabulary instruction with online presentation tools enhanced students’ motivation.

There are several studies that revealed results that are in line with this study. Chen et al. (2018) used ARCS model to integrate augmented reality and game-based learning into vocabulary teaching within their study and found that the experimental group's motivation differed notably from that of the control group (p. 27). Wu (2018) concluded that game-based vocabulary learning integrated with ARCS stimulated learner motivation and encouraged them to actively participate in the learning activities (p. 321). Implementation of ARCS was found to be effective in improving students' motivation in EFL classrooms by several other studies in literature (Lai & Chang, 2021; Lestari, 2021; Solak & Çakır, 2015; Xie & Zhu, 2023).

For a deeper understanding, the Instructional Materials Motivation Survey's two dimensions as attention-relevance and confidence-satisfaction were analyzed separately. Initially, results for the attention-relevance category were checked. It was found that the experimental group outperformed the control group. The two groups' motivation scores varied dramatically from one another. Kurt and Keçik (2017) found parallel results and stated that implication of attention-relevance related strategies improved students' motivation (p. 34). They indicated that getting students' attention plays a vital role in motivating students, and they added that attention strategies enabled students to focus on the lesson and stay concentrated (Kurt & Keçik, 2017, p.35). In this study, motivational problems were spotted within the attention-relevance dimension according to the simplified design matrix used to plan an ARCS-based vocabulary lesson. It was seen that applying attention-getting strategies such as using multimedia and adding variety helped catch and sustain the students' attention. Likewise, Chang and Lehman (2002) reported that relevance enhancement strategies had a significant impact on students' motivation, and students in the experimental group performed better than the students in the control group (p. 94). Relevance-building strategies, such as connecting the topic with students' lives and past experiences, stating the objectives and future usefulness of the instruction (Kurt & Keçik, 2017, p. 36) helped students to form a connection between themselves and the instruction.

The second dimension of this survey is the confidence-satisfaction category. In the simplified design matrix prepared to integrate ARCS motivational tactics into the lesson plan, sustaining confidence and satisfaction was aimed. Therefore, motivational tactics were applied in line with this aim. Students were provided with exercises beginning from basic to more challenging ones. Although the experimental group had a higher mean score than the control group according to the descriptive statistics, independent t-test results found no significant statistical difference between the two groups' motivational scores for the

confidence-satisfaction dimension. This result might be attributed to the educational backgrounds of the students. They study at a science high school which demands high exam scores from students for enrollment. Thus, they might already have confidence in completing learning tasks. In addition, students' personality traits can be a decisive factor in this result. As Önce and Gürol suggested (2021), introvert students may not want to participate in collaborative tasks (p. 433). They continue by adding that those introverted students might avoid attending competitive tasks for fear of being left behind by extroverted students who are more eager to compete with others.

In conclusion, the implementation of ARCS-based vocabulary instruction affected students' motivation positively, specifically regarding attention-relevance category. For this study, motivational tactics were implemented to promote motivation within the attention-relevance category. Applying those tactics improved students' motivation related to this dimension of the ARCS motivational model. As for the confidence-satisfaction dimension, the instructor's goal was to sustain motivation.

CHAPTER 6

CONCLUSION

This chapter includes conclusions drawn from the study, implications and suggestions for future research.

6.1. Conclusion

Learning vocabulary can be an overwhelming process for EFL students as they need to learn plenty of words in a limited time, and they cannot be exposed to as many words as native speakers encounter in daily life (Folse, 2004; Zimmermann, 1997). In addition to this, the learning styles of many students changed owing to the recent developments in technology. For this reason, they may lose interest and motivation to learn vocabulary in traditional ways (Folse, 2011). Technology-assisted methods can aid in overcoming this problem. Online presentation tools can be used for this purpose. However, lesson design with a technological tool should be based on a framework to make it pedagogically appropriate (Mishra & Koehler, 2006). Pedagogically appropriate methods can promote positive differences in an EFL classroom (Azmi, 2017, p. 117). Therefore, the ARCS model of motivation design was adopted to integrate technology into vocabulary instruction in this study. Hence, the purpose of this study was to investigate the impact of ARCS-based vocabulary instruction with an online presentation tool on EFL students' vocabulary achievement and motivation. For this purpose, the following research questions were addressed; "Does ARCS-based vocabulary instruction with an online presentation tool contribute to students' vocabulary achievement?" and "Does ARCS-based vocabulary instruction with an online presentation tool affect students' motivation?". The findings shed light on the relationship between instruction method, vocabulary achievement, and motivation.

Initially, the findings regarding the first research question, "Does ARCS-based vocabulary instruction with an online presentation tool contribute to students' vocabulary achievement?" indicated that both the experimental group and the control group improved their vocabulary knowledge. Both groups showed improvements in vocabulary learning when each group's mean scores were analyzed separately. These findings indicated that both the technology-assisted method and traditional methods worked well for vocabulary achievement. These findings imply that learning does not solely depend on the type of

instruction used. There are several other factors affecting the success of students in a learning environment. The learner characteristics and their needs had vital effects on the results of this study. Since participants in this study were students at a science high school that demands high exam scores for enrolment, they had higher engagement in learning activities. By considering these students' strengths in learning, it can be suggested that a study could have been conducted among students with lower engagement and participation in learning activities. Like this view, Reynolds et al. (2021) suggested that such applications may be particularly utilized for low-motivated EFL students based on their study's findings which revealed no noteworthy distinction between experimental group and control group in terms of vocabulary acquisition yet pointed out higher motivation level for experimental group. Additionally, the material for the experimental group was supplemented with a variety of activities. However, this might have caused cognitive load for some students. As a result of this, they might be disrupted and fail to focus on target words. Also, some students needed teacher assistance during the learning process instead of using the online presentation application at their own pace. Regarding this, Astleitner and Lintner (2004) pointed out that materials should be adapted according to learners' needs and characteristics by stimulating motivation and without creating a cognitive load. Lastly, the technological infrastructure of the learning environment and internet connection problems caused interruptions during the learning process. This situation directly affected students' concentration in the experimental group. Therefore, it can be suggested that the lesson design can be revised by considering these issues.

Considering the second research question, "Does ARCS-based vocabulary instruction with an online presentation tool affect students' motivation?", survey results revealed that participants in the experimental group demonstrated a higher level of motivation. ARCS-based vocabulary instruction with an online presentation tool caught the attention of the learners and fostered their motivation. Therefore, it can be suggested that using technology-based instruction methods can be a driving factor for cultivating student motivation. Ilter (2009) supports this view by stating that technological tools should be used in classrooms as they promote student motivation and learning and create a lively classroom atmosphere (p.155).

Lastly, two different dimensions of the survey were analyzed separately, and it was found that students in the experimental group showed a higher motivation level in favor of the attention-relevance part. As for the confidence-satisfaction dimension, the two groups showed similarity. However, during the design process attention-relevance dimension was

sought to be improved with motivational tactics. For the confidence-satisfaction dimension, no problems were pointed out, so sustaining motivation was the objective of the lesson plan prepared in line with ARCS motivational design model.

Overall, it can be observed that ARCS-based vocabulary instruction with an online presentation tool contributed to the vocabulary achievement and motivation of the students. Also, traditional instruction methods led to an improvement in vocabulary development of students even though they did not contribute to the motivation level of students. These findings emphasize that ARCS-based vocabulary instruction with an online presentation tool can increase the motivation of students in foreign language learning environments; however, a few factors need to be considered while planning a lesson with technological tools to enable a higher achievement in vocabulary learning when compared to traditional methods.

6.2. Implications

This study can suggest several pedagogical implications for EFL teachers, researchers, and curriculum and materials developers. The findings provide insights into the impact of online presentation tools and the ARCS motivational design model in language teaching. First, online presentation tools can be useful in improving student involvement and interaction in a language classroom. Then, these tools provide a variety of activities so that they can be easily integrated with the ARCS motivational design model. Thus, student motivation can be enhanced with the help of motivational tactics that the ARCS motivational design model suggests. Enhancement in student motivation can also lead to better achievement scores for students. Therefore, these tools, along with ARCS, can be used to improve student success as well. Consequently, by considering the results of this study, language learning stakeholders may improve their instruction and materials design, and they can support student motivation in this way, which can lead to a better language learning process.

6.3. Suggestions

Future research can be conducted based on the findings of this study. Firstly, a study with a longer intervention period can be carried out for more accurate results. There are various reasons why there is a need for longer intervention. These reasons can be listed as student absenteeism, technical problems, and participants' ability to use ICT software. These factors all lead to disruptions during the process, and as a result, a need for a longer

intervention period appears. Secondly, the study could be conducted with a larger population to get more precise and generalizable data. Besides, this study could be conducted with a different population. In this study, participants were attending a science high school, which requires high exam scores from students. Thus, participants had strong educational backgrounds. Although their motivational levels differed due to the intervention, their vocabulary development showed similarity. This result can be attributed to their educational backgrounds.



REFERENCES

- Abdullah, M. I., Inayati, D., & Karyawati, N. N. (2022). Nearpod use as a learning platform to improve student learning motivation in an elementary school. *Journal of Education and Learning (EduLearn)*, 16(1), 121–129. <https://doi.org/10.11591/edulearn.v16i1.20421>
- Açıkgöz, Z. (2019). *Effects of two different gamified student response systems on efl students' vocabulary achievement and intrinsic motivation* (Publication No. 544082) [Master's Thesis, Bahcesehir University]. Yök Tez Merkezi.
- Altun, L. (2019). *Transforming Receptive Vocabulary Knowledge into Productive Vocabulary Through ICT Tools and Investigation of Students' Views* (Publication No. 591677) [Master's Thesis, Bursa Uludag University]. Yök Tez Merkezi.
- Altun, M. (2015). The integration of technology into foreign language teaching. *International Journal on New Trends in Education and Their Implications*, 6(1), 29-34. <http://www.ijonte.org/FileUpload/ks63207/File/03a.altun.pdf>
- Alzaid, F. (2018). *The effects of gamification based formative assessment on motivation and vocabulary acquisition in esl classroom* [Master's Thesis, McGill University]. ProQuest Dissertations & Theses Global.
- Annamalai, S. (2016). Designing motivating mE-book for polytechnic language classroom using arcs model. *European Proceedings of Social and Behavioural Sciences*, 320 - 326. <https://doi.org/10.15405/epsbs.2016.08.45>
- Astleitner, H., & Lintner, P. (2004). The effects of arcs-strategies on self-regulated learning with instructional texts. *E-Journal of instructional science and technology*, 7(1). <https://eric.ed.gov/?id=EJ850349>
- Aulia, H. R., Wahjuningsih, E., & Andayani, R. (2020). The effect of Duolingo application on students' English vocabulary mastery. *ELTR Journal*, 4(2), 131-139. <https://doi.org/10.37147/eltr.v4i2.71>

- Aysu, S. (2020). The use of technology and its effects on language learning motivation. *Journal of Language Research (JLR)*, 4(1), 86-100. <https://dergipark.org.tr/en/pub/jlr/issue/54148/809373>
- Azizah, W., Allan, M., & Robert, Y. (2022). Digital-based online presentation media in improving students' language skills. *JILTECH: Journal International of Lingua and Technology Journal International of Lingua and Technology*, 1(1), 172–187. <https://doi.org/10.25217/jiltech.v1i3.142>
- Azmi, N. (2017). The benefits of using ict in the EFL classroom: From perceived utility to potential challenges. *Journal of Educational and Social Research*, 7(1), 111-118. <https://www.semanticscholar.org/paper/The-Benefits-of-Using-ICT-in-the-EFL-Classroom%3A-to-Azmi/fb0bfb309c48b1e2268d1e913e7ed17e79b78705>
- Bagheri, E., Roohani, A., & Ansari, D. N. (2012). Effect of call-based and non-call-based methods of teaching on L2 vocabulary learning. *Journal of Language Teaching and Research*, 3(4), 744-752. <https://doi.org/10.4304/jltr.3.4.744-752>
- Başöz, T., & Cubukcu, F. (2014). The effectiveness of computer assisted instruction on vocabulary achievement. *Mevlana International Journal of Education*, 4(1), 44–54. <https://doi.org/10.13054/mije.13.77.4.1>
- Brittingham, E.E. (2017). *Using multimedia vocabulary games to improve newcomer esol students' motivation and vocabulary acquisition* (Publication No. 29256735) [Doctoral Dissertation, University of South Carolina]. ProQuest Dissertations & Theses Global.
- Bueno-Alastuey, M. C., & Nemeth, K. (2020). Quizlet and podcasts: Effects on vocabulary acquisition. *Computer Assisted Language Learning*, 35(7), 1407–1436. <https://doi.org/10.1080/09588221.2020.1802601>
- Bueno, R., Niess, M. L., Engin, R. A., Ballejo, C. C., & Lieban, D. (2023). Technological pedagogical content knowledge: Exploring new perspectives. *Australasian Journal of Educational Technology*, 39(1), 88-105. <https://doi.org/10.14742/ajet.7970>
- Carmona-Chica, L. M., & Argudo-Garzón, A. L. (2022). Vocabulary skills and virtual tools in students of A2 Universidad Católica de Cuenca. *Revista Arbitrada Interdisciplinaria Koinonía*, 7(1), 23–45. <https://doi.org/10.35381/r.k.v7i1.1677>

- Chang, M. M., & Lehman, J. D. (2002). Learning foreign language through an interactive multimedia program: An experimental study on the effects of the relevance component of the ARCS model. *CALICO Journal*, 20(1), 81-98. <http://www.jstor.org/stable/24149610>
- Chen, S. Y., Hung, C. Y., Chang, Y. C., Lin, Y. S., & Lai, Y. H. (2018). A study on integrating augmented reality technology and game-based learning model to improve motivation and effectiveness of learning English vocabulary. *Proceedings of 2018 1st International Cognitive Cities Conference (IC3)*, 24–27. <https://doi.org/10.1109/IC3.2018.00015>
- Cho, H. (2021). *Quizlet in the efl classroom: Enhancing vocabulary acquisition of Korean middle school students* (Publication No. 28496406) [Doctoral Dissertation, Alliant International University]. ProQuest Dissertations & Theses Global.
- Civelek, M., & Karatepe, Ç. (2021). The impact of student-paced pragmatics instruction through Nearpod on EFL learners' request performance. *Advances in Language and Literary Studies*, 12(6), 67-78. <https://doi.org/10.7575/aiac.all.v.12n.6.p.67>
- Cresswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage Publications.
- Çakır, S. (2019). *The effect of five different gamified student response applications on students' vocabulary development and intrinsic motivation in efl* (Publication No. 569100) [Master's Thesis, Bahcesehir University]. Yök Tez Merkezi.
- Çekiç, A., & Bakla, A. (2021). A review of digital formative assessment tools: Features and future directions. *International Online Journal of Education and Teaching (IOJET)*, 8(3). 1459-1485. <https://eric.ed.gov/?id=EJ1308016>
- Dağdeler, K.O. (2018). *the role of mobile assisted language learning (mall) in vocabulary knowledge, learner autonomy and motivation of prospective English language teachers* (Publication No. 513439) [Doctoral Dissertation, Ataturk University]. Yök Tez Merkezi.
- Dalton, B., & Grisham, D. L. (2011). eVoc strategies: 10 ways to use technology to build vocabulary. *The Reading Teacher*, 64(5), 306-317. <https://doi.org/10.1598/rt.64.5.1>

- David, L., & Weinstein, N. (2023). Using technology to make learning fun: technology use is best made fun and challenging to optimize intrinsic motivation and engagement. *European Journal of Psychology of Education*, 39(2), 1441–1463. <https://doi.org/10.1007/s10212-023-00734-0>
- Deci, E. L. & Ryan, R. M. (1985). *Intrinsic motivation and self determination in human behavior*. Berlin: Springer Science and Business Media.
- Dimitroff, A. R., Dimitroff, A. J., & Alhashimi, R. (2018). Student motivation: A comparison and investigation of ESL and EFL environments. *International Journal of Curriculum and Instruction*, 10(2), 1-13. <https://files.eric.ed.gov/fulltext/EJ1207226.pdf>
- Dörnyei, Z. (2001). *Motivational strategies in the language classroom* (Vol. 10). Cambridge: Cambridge University Press.
- Dörnyei, Z. (2007). *Research methods in applied linguistics*. Oxford: Oxford University Press.
- Eglash, K. (2020). *The effect of teaching vocabulary using a digital media and traditional methods on student's academic performance in 11th grade literature class* [Doctoral dissertation, Milligan College]. <https://mcstor.library.milligan.edu/items/189db8a7-ae70-4c1e-bbce-8b0b87e8b15b>
- Ferdig, R.E. (2006), Assessing technologies for teaching and learning: understanding the importance of technological pedagogical content knowledge. *British Journal of Educational Technology*, 37(5), 749-760. <https://doi.org/10.1111/j.1467-8535.2006.00559.x>
- Folse, K. (2004). Myths about teaching and learning second language vocabulary: What recent research says. *TESL Reporter*, 37(2): 1–13. <https://www.solidmemory.com/assets/pdf/Folse-2004-MythsAboutTeachingAndLearningSecondLanguageVocabulary.pdf>

- Folse, K. (2010). Is explicit vocabulary focus the reading teacher's job?. *Reading in a Foreign Language*, 22(1), 139-160. <https://scholarspace.manoa.hawaii.edu/server/api/core/bitstreams/18f3b583-a449-46eb-84a3-dfa05453b4a3/content>
- Folse, K. (2011). Applying L2 lexical research findings in esl teaching. *Tesol Quarterly*, 45(2), 362-369. <https://doi.org/10.5054/tq.2010.254529>
- Fu, G. (2021). *the effectiveness of using multimedia for teaching phrasal verbs in community college esl classes* (Publication No. 28547701) [Doctoral Dissertation, The University of San Francisco]. ProQuest Dissertations & Theses Global.
- Gardner, R. (2007). Motivation and second language acquisition. *Porta Linguarum*, 8, 9-20. <https://digibug.ugr.es/handle/10481/31616>
- Hao, T., Wang, Z., & Ardasheva, Y. (2021). Technology-assisted vocabulary learning for efl learners: a meta-analysis. *Journal of Research on Educational Effectiveness*, 14(3), 645–667. <https://doi.org/10.1080/19345747.2021.1917028>
- Hariyanto., Joyoatmojo, S., Nurkamto, J., & Gunarhadi. (2019). Correlation of learning motivation based on ARCS model with English achievement of midwifery students. *Lingua Cultura*, 13(3), 161-166. <https://doi.org/10.21512/lc.v13i3.557>
- Harp, S. F., & Mayer, R. E. (1998). How seductive details do their damage: A theory of cognitive interest in science learning. *Journal of Educational Psychology*, 90(3), 414–434. <https://doi.org/10.1037/0022-0663.90.3.414>
- Hennessey, S., Ruthven, K., & Brindly, S. (2005). Teacher perspectives on integrating ict into subject teaching: commitment, constraints, caution, and change. *Journal of Curriculum Studies*, 37(2), 155–192. <https://doi.org/10.1080/0022027032000276961>
- Herwawan, N. M., & Panjaitan, N. B. (2022). The influence of using Nearpod to improve student's vocabulary in learning English as foreign language. *Jurnal Pendidikan dan Konseling (JPDK)*, 4(6), 6076-6081. <https://doi.org/10.31004/jpdk.v4i6.9261>

- Hussain, Z. (2018). The effects of ICT-based learning on students' vocabulary mastery in junior high schools in Bandung. *International Journal of Education*, 10(2), 149–156. <https://doi.org/10.17509/ije.v10i2.7592>
- İlter, B. G. (2009). Effect of technology on motivation in EFL classrooms. *Turkish Online Journal of Distance Education*, 10(4), 136-158. https://dergipark.org.tr/en/pub/tojde/issue/16914/176463#article_cite
- Jin, S. (2024). Optimizing English teaching: Arcs motivation model and task-based language teaching in university. *Learning and Motivation*, 87, 1-15. <https://doi.org/10.1016/j.lmot.2024.102028>
- Kabooha, R., & Elyas, T. (2018). The effects of Youtube in multimedia instruction for vocabulary learning: Perceptions of EFL students and teachers. *English Language Teaching*, 11(2), 72-81. <https://doi.org/10.5539/elt.v11n2p72>
- Kamaluddin, K., Azizah, W., Allan, M., & Robert, Y. (2023). Digital-based online presentation media in improving students' language skills. *Journal International of Lingua and Technology*, 1(3), 172-187. https://www.researchgate.net/publication/372381526_Digital-Based_Online_Presentation_Media_in_Improving_Students'_Language_Skills
- Katamba, C. V., Tobing, J. H., & Putri, T. A. (2022). Do Kahoot! Games enhance vocabulary learning?. *Journal of Elementary Education/Revija za Elementarno Izobraževanje*, 15(3), 393-408.
- Keller, J. M. (1987). Development and use of the arcs model of instructional design. *Journal of Instructional Development*, 2–10. <https://doi.org/10.1007/BF02905780>
- Keller, J. M. (2000, February). How to integrate learner motivation planning into lesson planning: The ARCS model approach [Conference presentation]. *VII Semanario, Santiago, Cuba*. <https://doi.org/10.1111/modl.12214>
- Keller, J., & Suzuki, K. (2004). Learner motivation and e-learning design: A multinationally validated process. *Journal of Educational Media*, 29(3), 229–239. <https://doi.org/10.1080/1358165042000283084>

- Keller, J. M. (2010). *Motivational design for learning and performance: The arcs model approach*. New York: Springer.
- Khan, R. M. I., Ali, A., Kumar, T., & Venugopal, A. (2023). Assessing the efficacy of augmented reality in enhancing efl vocabulary. *Cogent Arts & Humanities*, 10(1), 2223010. <https://doi.org/10.1080/23311983.2023.2223010>
- Klymenko, A. O., Zakordonets, N. I., & Shymkiv, I. V. (2017). The use of multimedia presentations for intensification of foreign languages teaching at tertiary level. *Information Technologies and Learning Tools*, 59(3), 87-95. <https://journal.iitta.gov.ua/index.php/itlt/article/view/1607>
- Kurt, P. Y., & Kecik, I. (2017). The effects of arcs motivational model on student motivation to learn English. *European Journal of Foreign Language Teaching*, 2(1), 22-44. <https://oapub.org/edu/index.php/ejfl/article/view/478/1300>
- Kutu, H. ve Sözbilir, M. (2011). Öğretim materyalleri motivasyon anketi'nin Türkçe'ye uyarlanması: Güvenirlilik ve geçerlik çalışması. *Necatibey Eğitim Fakültesi Elektronik Fen ve Matematik Eğitimi Dergisi*, 5(1), 292-312. <https://toad.halileksi.net/olcek/ogretim-materyalleri-motivasyon-anketi/>
- Lai, J. Y., & Chang, L. T. (2021). Impacts of augmented reality apps on first graders' motivation and performance in English vocabulary learning. *SAGE Open*, 11(4), 1-13. <https://doi.org/10.1177/21582440211047549>
- Le, H. H. V., & Doan, T. K. O. (2023). Efl students' perceptions of using Nearpod in online English learning. *ICTE Conference Proceedings, Vietnam*, 3, 98-117. <https://doi.org/10.54855/icte.2338>
- Le, T. N. H. (2023). A case study on using presentation software in teaching and learning grammar for English-majored undergraduates. *International Journal of TESOL & Education*, 3(3), 17-38. <https://doi.org/10.54855/ijte.23332>
- Lestari, F. D. (2021). The implementation of arcs learning-motivational model to enhance students' listening proficiency. *English Teaching and Linguistics Journal (ETLiJ)*, 2(2), 188-197. <https://jurnal.umsu.ac.id/index.php/ETLiJ/article/view/7332/5814>

- Liao, H. C. & Wang, Y. H. (2008). Applying the arcs motivation model in technological and vocational education. *Contemporary Issues In Education Research*, 1(2), 53-58. <https://eric.ed.gov/?id=EJ1056387>
- Lowry-Brock, M. R. (2016). The effect of using Nearpod as a tool of active learning in the high school science classroom. [Masters Thesis, Montana State University]. <https://scholarworks.montana.edu/server/api/core/bitstreams/e9aa0a2a-9a69-419f-bc73-090472f41252/content>
- Madhavi, E., Sivapurapu, L., & Kati, P. (2023). Value role of ict tools in English language teaching and learning: Emphasis on Covid-19 pandemic. *World Journal of English Language*, 13(2), 324-324. <https://doi.org/10.5430/wjel.v13n2p324>
- Malik, S., Rohendi, D., & Widiaty, I. (2019, February). Technological pedagogical content knowledge (TPACK) with information and communication technology (ICT) integration: A literature review. In *5th UPI International Conference on Technical and Vocational Education and Training (ICTVET 2018)*, 98-503. <https://www.atlantis-press.com/proceedings/ictvet-18/55914000>
- Mattei, M.D., & Ennis, E. (2014). Continuous, real-time assessment of every student's progress in the flipped higher education classroom using Nearpod. *Journal of Learning in Higher Education*, 10(1), 1-7. <https://files.eric.ed.gov/fulltext/EJ1143320.pdf>
- Mayer, R. E., & Moreno, R. (2003). Nine ways to reduce cognitive load in multimedia learning. *Educational Psychologist*, 38(1), 43-52. https://doi.org/10.1207/S15326985EP3801_6
- McClean, S., & Crowe, W. (2017). Making room for interactivity: Using the cloud-based audience response system Nearpod to enhance engagement in lectures. *FEMS microbiology letters*, 364(6), 1-6. doi.org/10.1093/femsle/fnx052
- Merzifonluoglu, A., & Tulgar, A. T. (2022). Are digital technologies effective for the improvement of 12 vocabulary at tertiary level. *The Reading Matrix: An International Online Journal*, 22(1), 56-72. <https://mail.readingmatrix.com/files/27-46fafx5r.pdf>

- Mirzaei, A., Shafiee Rad, H., & Rahimi, E. (2024). Integrating ARCS motivational model and flipped teaching in L2 classrooms: A case of EFL expository writing. *Computer Assisted Language Learning*, 37(5-6), 1136-1165.
<https://doi.org/10.1080/09588221.2022.2068614>
- Mishan, F. and Timmis, I. (2015). *Materials development for TESOL*. Edinburgh University Press.
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017-1054.
<https://doi.org/10.1111/j.1467-9620.2006.00684.x>
- Munawarah, J., Kasim, U., & Daud, B. (2018). Improving speaking sub-skills by using the attention, relevance, confidence and satisfaction (arcs) model. *English Education Journal*, 9(3), 356-376.
<https://jurnal.usk.ac.id/EEJ/article/view/12217>
- Oblinger, D. (2003). Boomers gen-xers millennials. *EDUCAUSE review*, 500(4), 37-47.
<https://er.educause.edu/articles/2003/7/boomers-genxers-and-millennials-understanding-the-new-students>
- Osipovskaya, E., & Burdovskaya, E. (2019). Presentation software tools in higher educational setting. *ARPHA Proceedings*, 1, 1487-1496.
<https://ap.pensoft.net/article/22177/>
- Önce, B. E., Gürol, M. (2021). İşbirlikli öğrenme ile zenginleştirilmiş arcs motivasyon modelinin İngilizce öğrenim motivasyonuna etkisi. *IBAD Sosyal Bilimler Dergisi*, (10), 412-441.
- Pallant, J. (2016). *SPSS survival manual*. London: Mc Graw Hill Education.
- Reynolds, E. D., Fuchs, R. W., & Johnson, P. (2021). Game on with Kahoot!: Effects on vocabulary learning and motivation. *International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT)*, 11(4), 40-53.
<https://doi.org/10.4018/IJCALLT.2021100103>

- Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon*, 9(5): 1–6.
<https://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf>
- Pupah, E. M., & Sholihah, U. (2022). Enhancing efl students' reading learning process in COVID-19 pandemic through Nearpod. *Englisia: Journal of Language, Education, and Humanities*, 9(2), 17. <https://doi.org/10.22373/ej.v9i2.10400>
- Putra, A. P., Arafik, M., & Pratiwi, I. (2021). Use of Nearpod to Enhance Student Engagement in Online Learning. In Proceedings of the 7th International Conference on Education and Technology (ICET), 298-303.
<https://doi.org/10.1109/icet53279.2021.9575062>
- Robin, S. J., & Aziz, A. (2022). The use of digital tools to improve vocabulary acquisition. *International Journal of Academic Research in Business and Social Sciences*, 12(1), 2472–2492. <https://doi.org/10.6007/ijarbss/v12-i1/12198>
- Roick, J., Poethke, P., & Richter, M. (2023). Learners' characteristics and the mastery of digital education during the COVID-19 pandemic in students of a medical faculty in Germany. *BMC Medical Education*, 23(1). <https://doi.org/10.1186/s12909-023-04012-x>
- Rudolph, M. (2017). Cognitive theory of multimedia learning. *Journal of Online Higher Education*, 1(2), 1-15.
- Sadeghi, K., & Dousti, M. (2014). The effect of length of exposure to computer-based vocabulary activities on young Iranian efl learners' vocabulary gain. *Theory and Practice in Language Studies*, 4(8), 1692-1701. <https://doi.org/10.4304/tpls.4.8.1692-1701>
- Sanosi, A. B. (2018). The effect of Quizlet on vocabulary acquisition. *Asian Journal of Education and e-learning*, 6(4), 71-77.
https://www.researchgate.net/profile/Abdulaziz-Sanosi/publication/327108959_The_Effect_of_Quizlet_on_Vocabulary_Acquisition/links/5b7a8aeb92851c1e12219602/The-Effect-of-Quizlet-on-Vocabulary-Acquisition.pdf

- Santiana, S., & Fatimah, A. S. (2017). Prezi, cloud-based presentation, for teaching: How is it interesting?. *EduLite: Journal of English Education, Literature and Culture*, 2(2), 445-456. <http://dx.doi.org/10.30659/e.2.2.445-456>
- Savaş, P. (2020). Teaching EFL with technology. *Preparing Teachers for A Changing World: Contemporary Issues in EFL Education*. <https://portalcris.vdu.lt/server/api/core/bitstreams/70d3c264-9633-4ebc-b34b-e84523ad2339/content>
- Saydakhmatova, I. H. (2020). Use of technology in English language learning. *JournalNX*, 6(11), 209-211. <https://repo.journalnx.com/index.php/nx/article/view/144>
- Schmitt, N. (2000). *Vocabulary in language teaching*. Cambridge: Cambridge University Press.
- Scrivener, J. (2011). *Learning teaching*. Oxford: Macmillan.
- Setiawan, M., & Wiedarti, P. (2020). The effectiveness of Quizlet application towards students' motivation in learning vocabulary. *Studies in English Language and Education*, 7(1), 83-95. <https://doi.org/10.24815/siel>
- Sharma, S. A., & Unger, S. (2016). Employing web 2.0 technologies to support students' academic vocabulary acquisition. *Michigan Reading Journal*, 48(3), 17-29. <https://scholarworks.gvsu.edu/cgi/viewcontent.cgi?article=1094&context=mrj>
- Solak, E., & Cakir, R. (2015). Exploring the effect of materials designed with augmented reality on language learners' vocabulary learning. *Journal of Educators Online*, 12(2), 50-72. <https://files.eric.ed.gov/fulltext/EJ1068381.pdf>
- Tandoğan, B. (2019). *Investigating the effectiveness of arcs based instructional materials enhanced with augmented reality on ESP vocabulary achievement and motivation* (Publication No. 573364) [Master's thesis, Middle East Technical University]. Yök Tez Merkezi.
- Tanveer, M. (2011). Integrating e-learning in classroom-based language teaching: Perceptions, challenges and strategies. *In Conference Proceedings, 4th International*

Conference ICT for Language Learning, Florence, Italy.
https://conference.pixelonline.net/conferences/ICT4LL2011/common/download/Paper_pdf/IEC141-252-FP-Tanveer-ICT4LL2011.pdf

Thaer, A., & Thaer, G. (2016). The effect of arcs motivational model on achievement motivation and academic achievement of the tenth-grade students. *The New Educational Review*, 43, 68-77. <https://doi.org/10.15804/tner.2016.43.1.05>

Thornbury, S. (2002). *How to teach vocabulary*. Essex: Pearson Education.

Tsai, C. C. (2020). The effects of augmented reality to motivation and performance in efl vocabulary learning. *International Journal of Instruction*, 13(4), 987–1000. <https://doi.org/10.29333/iji.2020.13460a>

Turahmah, A., Djunaidi, D., & Jaya, A. (2023). Nearpod website strategy in increasing students' listening ability. *Esteem Journal of English Education Study Programme*, 6(1), 94-99. <https://doi.org/10.31851/esteem.v6i1.10220>

Turel, Y. K., & Sanal, S. O. (2018). The effects of an arcs-based e-book on student's achievement, motivation and anxiety. *Computers & Education*, 127, 130-140. <https://doi.org/10.1016/j.compedu.2018.08.006>

Wu, T. T. (2018). Improving the effectiveness of English vocabulary review by integrating arcs with mobile game-based learning. *Journal of Computer Assisted Learning*, 34(3), 315–323. <https://doi.org/10.1111/jcal.12244>

Xie, S., & Zhu, X. (2023). Application of arcs motivation model in the English writing teaching in senior high school. *International Journal of New Developments in Education*, 5(6), 29-35. <https://doi.org/10.25236/IJNDE.2023.050606>.

Yeganehpour, P., & Jalilzadeh, K. (2022). A study on ict based vocabulary learning. *Universal Journal of Educational Research*, 10(7), 443–447. <https://doi.org/10.13189/ujer.2022.100702>

Yu, A., & Trainin, G. (2022). A meta-analysis examining technology-assisted l2 vocabulary learning. *ReCALL*, 34(2), 235–252. <https://doi.org/10.1017/S0958344021000239>

- Zainal, A. (2012). Esl teachers' use of ict in teaching English literature: An analysis of teachers' TPCK. *Procedia-Social and Behavioral Sciences*, 34, 234-237. <https://doi.org/10.1016/j.sbspro.2012.02.047>
- Zengin, Ö., & Aksu, M. (2017). A review study on the integration of technology into foreign language education in Turkey. *Ankara University Journal of Faculty of Educational Sciences (JFES)*, 50(2), 79-104. https://doi.org/10.1501/Egifak_0000001398
- Zhang, H., Song, W., & Burston, J. (2011). Reexamining the effectiveness of vocabulary learning via mobile phones. *Turkish Online Journal of Educational Technology-TOJET*, 10(3), 203-214. <https://eric.ed.gov/?id=ej944968>
- Zhang, J. (2015). Improving English listening proficiency: The Application of arcs learning-motivational model. *English Language Teaching*, 8(10), 1-6. <https://eric.ed.gov/?id=EJ1079093>
- Zimmerman, C. B. (1997). Do reading and interactive vocabulary instruction make a difference? An empirical study. *TESOL quarterly*, 31(1), 121-140. <https://doi.org/10.2307/3587978>

APPENDIX 1: VOCABULARY ACHIEVEMENT TEST

Instruction: Choose the correct option to fill in the gap in the sentences.

1. Her favorite free time activity is _____. She prepares unusual designs on different fabrics using a needle and colorful threads.

- a) embroidery
- b) origami
- c) hiking
- d) upcycling

2. He is not an ambitious person and does not have big dreams about his future. He only wants to _____.

- a) get a gold medal
- b) live an ordinary life
- c) be a very famous person
- d) be a millionaire

3. Playing football is not _____. When I play it with friends, I cannot run fast and I always hurt my leg.

- a) under my belt
- b) all ears
- c) my cup of tea
- d) by word of mouth

4. If you want to lower your stress level, you can _____ a new hobby to spend good time on your own.

- a) take up
- b) let down
- c) apply to
- d) carry on

15. The kid damaged the school materials and caused one of his friends to get hurt, so he got a punishment because of these _____ behaviors.

- a) greedy
- b) confident
- c) troublesome
- d) gifted

6. The students became _____ to collect the garbage in the forest. They did not get any money for this job, but they got small thank-you gifts from the town council.

- a) interns
- b) parents
- c) designers
- d) volunteers

7. A human-machine teaming manager is responsible for building _____ system between humans and machines.

- a) interaction
- b) curiosity
- c) humor
- d) experience

8. As a chef, he graduated from _____ school. He learned how to make food from different countries at that school.

- a) culinary
- b) arts
- c) engineering
- d) sports

29. Doing puzzles and reading newspapers are popular _____ activities among old people.

- a) volunteer

b) Environmental

c) Professional

d) Pastime

10. Cleaning the floor, washing the dishes and ironing are among the _____ which people do at home.

a) chores

b) skills

c) challenges

d) arts

11. Because he is very shy, talking to different people is a/an _____ for him.

a) digital art

b) uphill struggle

c) new way of life

d) low-key

12. She is very _____ at learning languages. She knows 8 languages and it takes only 6 months for her to learn a new language.

a) ordinary

b) simple

c) difficult

d) talented

13. They wanted a more colorful chair, so they decided to _____ its fabric.

a) modify

b) cut

c) remain

d) gain

314. Sandra is spending all her money on clothes and jewelry. It is inevitable that she will _____ in the end.

- a) take the matters into her own hands
- b) get into deep water
- c) be broke
- d) have hands on experience

15. If you have the quality of _____, you can easily work with other people.

- a) risk-taking
- b) team-building
- c) patient- focused
- d) energy-efficient

16. Her goal is to _____ at university as an engineer, so she is studying hard for the exams.

- a) have pets
- b) get married
- c) live alone
- d) get a degree

17. She is interested in writing computer programs, so she started a course to learn _____.

- a) calligraphy
- b) podcasting
- c) coding
- d) origami

18. He decided to _____ old products and use them again to reduce waste and save the environment.

- a) learn
- b) pursue
- c) upcycle
- d) throw

19. Spending a lot of time on social media is a _____ problem among teenagers. Most of them use it for more than 4 hours a day.

- a) common
- b) rare
- c) different
- d) small

20. 2024 Olympics was a/an _____ for that athlete because he could not get any medals.

- a) satisfaction
- b) disappointment
- c) exhibition
- d) retirement

21. All you need is a pen and a paper for this hobby, and it is called _____.

- a) creative writing
- b) scuba diving
- c) roller skating
- d) soap making

22. It is a student's _____ to do his/her homework and study for exams.

- a) hobby
- b) personality
- c) skill
- d) duty

523. Gareth wants to be good at _____, so he started a course to learn more about how to decorate a room.

- a) fashion design
- b) website design
- c) interior design

d) automotive design

24. He speaks like British people. You can understand that he has a/an _____ level of English.

a) advanced

b) simple

c) elementary

d) basic

25. She started to have health problems, so she decided to _____ smoking to live a better life.

a) create

b) quit

c) relax

d) take

26. Carol wanted to learn everything about Jane and Tim's project, but Jane got angry because of Carol's _____ and did not tell anything about the project to her.

a) exhibition

b) skill

c) curiosity

d) duty

627. Some people spread incorrect medical advice _____ and unfortunately, some people believe in it and have health problems because of it.

a) by word of mouth

b) get into deep water

c) all ears

d) under their belt

28. Julia is interested in growing flowers, but she does not have time for this as she works. After her _____, she plans to spend her days by growing flowers only.

- a) interaction
- b) volunteer
- c) humor
- d) retirement

29. He has a sense of _____. Everyone laughs at his jokes.

- a) challenge
- b) humor
- c) experience
- d) duty

30. Tina did not study for the exam and failed. As a result, she _____ her parents down.

- a) let
- b) settle
- c) come
- d) calm

APPENDIX 2: INSTRUCTIONAL MATERIALS MOTIVATION SURVEY

AÇIKLAMA

Öğretim Materyalleri Motivasyon Anketi (ÖMMA)

Sevgili öğrenciler,

Bu anket derste kullanılan öğretim materyalinin öğrencilerin derse karşı olan motivasyonlarını nasıl etkilediğini ölçmeyi hedeflemektedir. Anket toplam 24 maddeden oluşmaktadır. Anketi cevaplarken, lütfen her bir ifadenin, karşısında yer alan **Tamamen Katılıyorum (5), Çok Katılıyorum (4), Orta Derecede Katılıyorum (3), Az Katılıyorum (2), Hiç Katılmıyorum (1)** seçeneklerinden size en uygun olanını işaretleyiniz. Unutmayınız ki bu bir sınav değildir ve sonuçta sizlere derslerinizi etkileyebilecek herhangi bir puan ya da not verilmeyecektir. Elde edilen veriler sadece araştırma amacıyla kullanılacaktır ve herhangi bir kişi ya da kurumla paylaşılmayacaktır. Sizlerden soruları içtenlikle ve samimi bir şekilde cevaplamanız beklenmektedir. *Olmasını istediğiniz ya da başkalarının sizden duymayı istediği cevabı vermeyiniz.* Lütfen hiçbir soruyu cevapsız bırakmayınız. İlginiz ve katkılarınız için teşekkür ederim.

Uyarı: Bu ankette ‘öğretim materyali’ olarak derste kullanılan sunum aracı kastedilmektedir. Cevaplarınızı bu sunum aracını göz önünde bulundurarak veriniz.

Öğretim Materyalleri Motivasyon Anketi		Tamamen katılıyorum	Çok katılıyorum	Orta derecede katılıyorum	Az katılıyorum	Hiç katılmıyorum
		5	4	3	2	1
1	İçeriğini ilk öğrendiğimde, bu derste dikkatimi çeken ilginç bazı şeylerin olduğunu gördüm.	☐	☐	☐	☐	☐
2	Dersin işleniş şekli ve derste kullanılan materyal dikkat çekiciydi.	☐	☐	☐	☐	☐
3	Derste kullanılan materyalde yeterli bilgi yoktu.	☐	☐	☐	☐	☐
4	Derste kullanılan materyalde bilgilerin işleniş şekli dikkat çekiciydi.	☐	☐	☐	☐	☐
5	Bu derste dikkat çekici şeyler vardı.	☐	☐	☐	☐	☐
6	Derste bazı dikkat çekici yeni bilgiler öğrendim.	☐	☐	☐	☐	☐
7	Alıştırmaların, materyalin, sunumların çeşitliliği dikkatimi derse vermeme yardımcı oldu.	☐	☐	☐	☐	☐
8	Derste kullanılan materyalde işlenen konunun önemini gösteren hikâyeler, resimler ve örnekler vardı.	☐	☐	☐	☐	☐
9	Derste kullanılan materyal benim için uygundu.	☐	☐	☐	☐	☐
10	Derste öğrendiğimiz bilgilerin nasıl uygulamaya yansıtılabileceğine dair açıklama ve örnekler vardı.	☐	☐	☐	☐	☐
11	Derste kullanılan materyalin gerek içeriği gerek sunumu konularının öğrenilmeye değer olduğu izlenimini uyandırıyor.	☐	☐	☐	☐	☐
12	Dersi anlamak beklediğimden daha zor oldu.	☐	☐	☐	☐	☐
13	İçeriğini ilk incelediğimde, bu ders kapsamında neler öğreneceğimi anladım.	☐	☐	☐	☐	☐
14	Derste kullanılan materyalde çok fazla bilgi verildiğinden nelerin önemli olduğunu ayırt edemedim.	☐	☐	☐	☐	☐
15	Verilen ödevleri yaptıkça konuları öğrenebileceğime dair kendime	☐	☐	☐	☐	☐
16	Dersteeki alıştırma ve uygulamalar oldukça zordu.	☐	☐	☐	☐	☐
17	Ders konularını çalıştıktan sonra, bu dersten geçebileceğime dair güvenim arttı.	☐	☐	☐	☐	☐
18	Ders kapsamındaki konuların birçoğunu tam olarak anlayamadım.	☐	☐	☐	☐	☐
19	Dersteeki konu diziliminin iyi olması dersi öğrenebileceğime dair güvenimi artırdı.	☐	☐	☐	☐	☐
20	Dersteeki uygulamaları/alıştırmaları tamamlamak bende başarı hissi uyandırdı.	☐	☐	☐	☐	☐

21	Dersten zevk aldığım için, dersteki konular hakkında daha çok şey öğrenmek istiyorum.	☐	☐	☐	☐	☐
22	Derse zevk alarak çalıştım.	☐	☐	☐	☐	☐
23	Ödev sonrasındaki dönütler ve dersteki diğer yorumlar emeğimin karşılığını aldığım hissini verdi.	☐	☐	☐	☐	☐
24	Dersi başarıyla tamamlamaktan mutluluk duydum.	☐	☐	☐	☐	☐



APPENDIX 3: PERMISSION TO USE INSTRUCTIONAL MATERIALS MOTIVATION SURVEY

12.11.2024 18:12

Gmail - Öğretim Materyalleri Motivasyon Anketi Ölçeği Kullanım İzni Talebi



Öğretim Materyalleri Motivasyon Anketi Ölçeği Kullanım İzni Talebi

9 May 2024 at 16:34

Merhaba Gökçe Koç Onar,

Sayın Prof. Dr. Mustafa SÖZBİLİR hocam ile birlikte Türkçe 'ye uyarlama çalışmasını yaptığımız Öğretim Materyalleri Motivasyon Anketini çalışmanızda kullanabilirsiniz.

Çalışmalarınızda başarılar dilerim.

Doç. Dr. Hülya DEDE (KUTU)

2.09.2024 15:35

Gmail - Öğretim Materyalleri Motivasyon Anketi Ölçeği Kullanım İzni Talebi



Öğretim Materyalleri Motivasyon Anketi Ölçeği Kullanım İzni Talebi

9 May 2024 at 18:59

Merhaba Sayın Gökçe Koç Onar,

Talep etmiş olduğunuz "Öğretim Materyalleri Motivasyon Anketi"ni araştırmalarınızda bilimsel etik ilkelere uygun olarak kaynak göstermek şartıyla kullanabilirsiniz. Çalışma hakkında daha fazla bilgi ve desteğe ihtiyacınız olursa Doç. Dr. Hülya Dede (Kutu) ile iletişim kurabilirsiniz.

Selamlarımla
Mustafa SÖZBİLİR

APPENDIX 4: ETHICS COMMITTEE APPROVAL

Evrak Tarih ve Sayısı: 01.07.2024-355172



T.C.
BAŞKENT ÜNİVERSİTESİ REKTÖRLÜĞÜ
Akademik Değerlendirme Koordinatörlüğü



Sayı : E-62310886-302.14.01-355172
Konu : Gökçe Koç Onar'ın Etik Kurul Onayı

01.07.2024

EĞİTİM BİLİMLERİ ENSTİTÜSÜ MÜDÜRLÜĞÜNE

İlgi : 15.05.2024 tarih ve 341328 sayılı yazınız.

Enstitünüz İngiliz Dili Öğretimi Tezli Yüksek Lisans Programı öğrencisi Gökçe Koç Onar'ın, Dr. Öğretim Üyesi Selim Soner Sütçü'nün danışmanlığında yürütmeyi planladığı, "Çevirim İçi Sunum Araçları ile Kelime Öğretiminin Yabancı Dil Olarak İngilizce Öğrenen Öğrencilerin Kelime Öğrenme Başarısı ve Motivasyonu Üzerindeki Etkisi" adlı tez önerisi değerlendirilmiş ve bilgilerinize ekte sunulmuştur.

Prof. Dr. Sadegül AKBABA ALTUN
Kurul Başkanı

Ek: Değerlendirme Formu

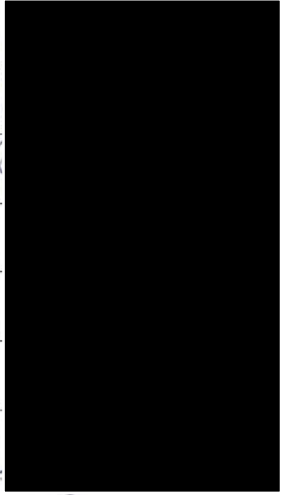
Sayı : 17162298.600- 154
Konu : Tez Önerisi

3 Haziran 2024

İlgili Makama

Üniversitemiz Eğitim Bilimleri Enstitüsü İngiliz Dili Öğretimi Tezli Yüksek Lisans Programı öğrencisi Gökçe Koç Onar'ın, Dr. Öğr. Üyesi Selim Soner Sütçü danışmanlığında yürütmeyi planladığı, "Çevirim İçi Sunum Araçları ile Kelime Öğretiminin Yabancı Dil Olarak İngilizce Öğrenen Öğrencilerin Kelime Öğrenme Başarısı ve Motivasyonu Üzerindeki Etkisi" adlı tez önerisi değerlendirilmiş ve yapılmasında bir sakınca olmadığı tespit edilmiştir. Bilgilerinize saygılarımızla sunarız.

Başkent Üniversitesi Sosyal ve Beşeri Bilimler ve Sanat Alan Araştırma Kurulu

Ad, Soyad	Değerlendirme	İmza
Prof. Dr. Gözen Güner Aktaş	Olumlu/ Olumsuz	
Prof. Dr. Sadegül Akbaba Altun	Olumlu/ Olumsuz	
Prof. Dr. Fatih Çetin	Olumlu/ Olumsuz	
Prof. Dr. Hasan Tahsin Fendoğlu	Olumlu/Olumsuz	
Prof. Dr. Filiz Kalelioğlu	Olumlu/ Olumsuz	
Prof. Dr. Hidayet Hale Künuçen	Olumlu/ Olumsuz	
Prof. Dr. Özcan Yağcı	Olumlu/ Olumsuz	

APPENDIX 5: PERMISSION FROM T.R. MINISTRY OF NATIONAL EDUCATION



Başvuru No: [Redacted]

Uygulama Yapılacak MEB Teşkilatının Kurum Kodu: [Redacted]

T.C. Kimlik No: [Redacted]

Adı Soyadı: GÖKÇE KOÇ ONAR

Araştırmacının Adı: Çevrim içi sunum araçları ile kelime öğretiminin Yabancı Dil olarak İngilizce öğrenen öğrencilerin kelime öğrenme başarıları ve motivasyonu üzerindeki etkileri.

Araştırmacının Niteliği: Yüksek Lisans Tezi

Araştırmacının Örneklem / Çalışma Grubu: Öğrenci

Uygulama Yapılacak MEB Teşkilatı: [Redacted]

Uygulama Yapılacak Birim: [Redacted]

Uygulama Yapılacak İl: ANKARA

Veri Toplama Aracının Başlığı: Öğretim Materyalleri Motivasyon Anketi, Ön/Son Test

Araştırma Uygulama İzninin Kabul Tarihi: 18.09.2024

Araştırmacının Uygulama İzninin Bitiş Tarihi: 18.09.2025

Yukarıda kimliği yazılı araştırmacı "Araştırma Uygulama İzinleri Genelgesine (2024/41)" göre belirtilen kapsamda araştırmasını yapmayı taahhüt etmiştir. Araştırmacının bilgi ve belgelerinin uygunluğu kontrol edilmiş olup araştırma uygulama izni ANKARA İl Millî Eğitim Müdürlüğü tarafından onaylanmıştır.

NOT: Okul/kurum yöneticileri tarafından "Araştırma Uygulama İzni" belgesinin ve veri toplama araçlarının (araçlardaki maddelerinin) modülde yer alan belge ve araçlarla aynı olduğu kontrol edilmelidir. Aynı olmadığı durumda araştırma uygulama izni verilmeyecektir.

* Başvuru detayını görüntülemek ve belgeyi doğrulamak için <https://arastirmaiznleri.meb.gov.tr/belge-dogrula> bağlantısını kullanınız.

- Araştırma Uygulama İzinleri Başvuru ve Değerlendirme Modülü -

APPENDIX 6: ORIGINALITY REPORT

ORIGINALITY REPORT

17%

SIMILARITY INDEX

PRIMARY SOURCES

1	acikbilim.yok.gov.tr Internet	354 words – 2%
2	mjltm.org Internet	299 words – 2%
3	etd.lib.metu.edu.tr Internet	292 words – 2%
4	mail.mjltm.org Internet	96 words – 1%
5	www.researchgate.net Internet	86 words – < 1%
6	core.ac.uk Internet	74 words – < 1%
7	acikerisim.deu.edu.tr Internet	58 words – < 1%
8	epe.lac-bac.gc.ca Internet	58 words – < 1%