EXPLORING E-READING EXPERIENCES AND ITS IMPACT ON SIXTH GRADE EFL STUDENT'S READING COMPREHENSION, MOTIVATION, READING TIME, AND DIGITAL ATTITUDE LEVELS

Ayşegül LİMAN KABAN

JUNE, 2020

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ABSTRACT

EXPLORING E-READING EXPERIENCES AND ITS IMPACT ON SIXTH GRADE EFL STUDENT'S READING COMPREHENSION, MOTIVATION, READING TIME, AND DIGITAL ATTITUDE LEVELS

Liman Kaban, Ayşegül

Doctoral Dissertation, Doctor of Philosophy Program in Educational Technology

Supervisor: Prof. Dr. Şirin KARADENİZ

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The main purpose of this study was to determine the influences of electronic book reading on reading comprehension skills, reading time, digital attitude, and reading motivation of sixth grade in English as a Foreign Language students at a state school in Istanbul, Turkey. In this embedded mixed methods quasi-experimental study, data were gathered through pre-post-tests of reading comprehension, reading time, reading motivation scale, and digital attitude scale, researcher field notes, instructor reflective journals, and focus group interviews with the students. The reading texts which were used in these lessons were chosen from a database in accordance with the findings of the English Proficiency Exam, which was administered before the implementation. The participants were 96 sixth grade EFL students from four different classes and four EFL teachers. One class was selected as control *(N= 24)* and three groups were chosen as experimental groups *(N = 72).* The control group was exposed to guided printed book instruction, whereas each experimental group received different mediums such as guided gamified electronic book reading, personalized electronic book reading, and PDF electronic book reading. Results indicated one significant finding: the students who were exposed to the personalized /gamified electronic book reading environments had more positive attitudes towards technology integration for academic purposes than towards the overall experience with the learning environment. The obtained results illustrated that the implementation of e-book reading resulted in a higher digital attitude, whereas reading comprehension showed no significant difference between groups. Participant students claimed that they preferred to read in their free time the

printed version of the books as the sense of ownership that the printed text storybooks offered. Gamified e-book reading had a positive influence on the external reading motivation whereas personalized e-book reading had a positive influence on the internal reading motivation of the learners. The study also showed that students spent less time while reading the stories from the screen. Although overall reading comprehension scores in English as an EFL environment were similar, students using the pdf electronic book reading had greater achievement in learning vocabulary than other groups.
Keywords: Personalization, Gamification, Reading Comprehension, EFL, Electronic Reading

ÖZ

6. SINIF YABANCI DİL OLARAK İNGİLİZCE SINIFLARINDA ELEKTRONİK OKUMA DENEYİMLERİNİN OKUDUĞUNU ANLAMA, MOTİVASYON, OKUMA SÜRESİ, VE DİJİTAL TUTUM DÜZEYLERİNE ETKİSİ

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Bu çalışmanın temel amacı, İstanbul'daki bir devlet okulunda 6. sınıfta yabancı dil olarak İngilizce dersi öğrencilerinin elektronik ortamda okumalarının, okuduğunu anlama becerileri, okuma zamanı, dijital tutum, ve motivasyonu üzerindeki etkisini belirlemektir. Bu iç içe geçmiş karma yöntemli yarı deneysel çalışmada, veriler okuduğunu anlama, okuma zamanı, motivasyon ve dijital tutum ölçeği, eğitmen yansıtıcı notları, odak grup görüşmeleri, ve gözlem alanı notları elde edilmiştir. Bu derslerde kullanılan hikaye kitapları ingilizce hikaye kitabı veri tabanından, en çok beğenilen kitaplar incelenerek seçilmiştir. Katılımcılar dört farklı sınıfta öğrenim gören yabancı dil olarak İngilizce dersinin öğrencileri *(N = 96)* ve dört İngilizce öğretmenidir *(N = 4)*. Kontrol grubu geleneksel rehberli basılı kitap programına maruz kalırken, her bir deney grubunda sırayla oyunlaştırılmış elektronik okuma, kişiselleştirilmiş elektronik okuma ve pdf elektronik okuma programları uygulanmıştır. Sonuçlar önemli bulgulara işaret etmektedir: kişiselleştirilmiş/ oyunlaştırılmış elektronik kitap okuma ortamlarına maruz kalan öğrenciler, akademik amaçlarla elektonik kitap okumaya karşı daha olumlu dijital tutum geliştirmiştir. Elektronik kitap okuma uygulanması kullanan öğrencilerin daha yüksek dijital tutum ile sonuçlandığını, ve okuduğunu anlamanın gruplar arasında anlamlı bir fark olmadığını göstermiştir. Oyunlaştırılmış e-kitap okumanın dış okuma motivasyonu üzerinde olumlu etkisi olurken, kişiselleştirilmiş e-kitap okumanın öğrencilerin içsel okuma motivasyonu üzerinde pozitif etkisi olduğuna ulaşılmıştır. Çalışma ayrıca

öğrencilerin ekrandan hikayeleri okurken daha az zaman harcadıklarını göstermiştir. Her ne kadar yabancı dil olarak ingilizce genel okuduğunu anlama performansları arasında fark çıkmasa da, pdf elektronik kitap okumasını kullanan öğrenciler kelime dağarcığında diğer gruplara göre daha anlamlı fark elde edilmiştir.

Anahtar Kelimeler: Oyunlaştırma, Kişiselleştirme, Okuduğunu Anlama, Yabancı Dil olarak İngilizce Öğretimi, Ekran Okuması

To my beautiful family

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LIST OF SYMBOLS/ABBREVIATIONS

EB Electronic Book

EFL English as a Foreign Language

ELT English Language Teaching

ER Electronic Reading

LA Language Acquisition

L1 First Language. In this study, L1 refers to Students' Mother Tongue; Turkish.

L2 Second Language. In this study, L2 refers to English.

MoNE The Ministry of National Education (MoNE) in Turkey. Administrative legislation and supervision related to formal and non-formal education (except for higher education) are performed by the Ministry of National Education (Colakoglu & Kalkan, 2020).

Chapter I

INTRODUCTION

“If we could modify the structure and wiring of the brain, that would be a fundamental game-changer in terms of who we are, what we decide, what we think. . . . We are in a different phase of evolution; the future of life is now in our hands. It is no longer just a natural evolution, but human-driven evolution.” Juan Enriquez and Steve Gullans

“Reading is an act of contemplation . . . an act of resistance in a landscape of distraction . . . it returns us to a reckoning with time.” David Ulin

The link between technology and learning has become inseparable in recent years. Our learning is accelerated through the implementation of educational technologies in wide range of contexts such as industry, charity, health, and education (Mullis, Martin, Foy, & Drucker, 2012). According to Childwise (2017), children grow up in an environment in which technology surrounds and spend a lot of time in front of the screens. In addition, Tyner (2014) also mentions that the nature of reading has a fast pace change when new technologies enter the life of the individuals and their learning environments. Mullis et al., (2012) claim that a technologically literate population is a hallmark of any country which look for sustainable and successful development, reading has a vital role in this context because it is essential for anyone who would like to acquire a skill; it allows people to remain on top of the recent relationships and this guides the trajectories of life and ensures the involvement of the broader population in public engagement.

Not willing to read in the target language is a common problem that language teachers have been facing recently (Arnold, 2009). Teachers in this century looks for ways to integrate technology to increase the interest in reading and as we are the educators of the digital age, it is significant to discover the possible benefits of technology-enhanced reading and instruction in English as a Foreign Language environment (EFL). The digital attitude and confidence of students at a young age while reading has been used to estimate the success of their future reading performance in previous studies (McGeown, Duncan, Griffiths, & Stothard, 2015). Motivating students to read has become a challenge that is frequently encountered by teachers of adolescents. The recent inclusion of electronic assessments of reading comprehension as part of international assessments of reading skills in the Progress in International Reading Literacy Study (PIRLS) and the Program for International Student Assessment (PISA) suggests that children are now supposed to read and comprehend texts that are shown on screens (Mullis, Martin, Foy, & Hooper, 2017; OECD, 2015). The studies mentioned previously shows the importance of reading.

This chapter supplied data that was related to the theoretical background. Firstly, the chapter discussed the theoretical bases of the study. Then, the purpose in this research and the significance of the study and the research questions were shown. Finally, this chapter was concluded with the short descriptions of the keywords which were used in this study.

1.1 Theoretical Framework

This study put several theories. The first theory which supports the opinion that readers comprehend the text they read depends on their personal experiences. This belief is supported in the transactional theory of reader response by Rosenblatt in 1978. When an individual reads something, there is a transaction between the reader and text. The next one is the motivation theory which encourages students toward to intention to learn and students become motivated to be successful (Gutherie, Wigfield, Metsala, & Cox, 1999). According to Morrow (1992), there is a correlation between how much time a child needs and reading motivation. Wang and Gutrie (1999) also mentioned that children who read more are likely to be better readers, do better on standardized tests, and grow into lifelong readers. Thirdly, the transformative view between technology and literacy, especially the exploration of how technology has changed reading is a foundational theoretical stance that was studied in the 1990s (McKenna, Reinking, Labbo, & Keiffer, 1999). The use of technology alters reading comprehension in various ways. Thus, a transaction takes place between technology and reading. Halamish and Elbaz (2019) claim that the influence of digitalization on reading comprehension was analyzed especially on university students. Many studies claim that children increasingly read from mobile devices, with the growing usage of digital technology in classrooms (Barzillai & Thomson, 2018; Duncan, McGeown, Griffiths, Stothard, & Dobai, 2016; Livingstone, Haddon, Vincent, Mascheroni, & Olafsson, 2014; Merga & Roni, 2016), so it is vital to understand how children's comprehension of reading varies when reading text from the screen compared to reading it from the printed text. To conclude, as electronic reading in children is not explored in the literature, to better understand the link between electronic reading and EFL learning we conducted this research.

1.2 Statement of the Problem

When it is compared with the past years, more people start to use electronic books (Felvegi & Matthew, 2012). Reading in the early years is an important focus for researchers, policymakers, educators, parents as there is a relationship between early reading habits and adults' academic achievement. The latest reports pointed to a growing interest in school-based independent reading, sparked by the increase of e-books in the children's reading industry (Eyre, Berg, Mazengarb, & Lawes, 2017).

Electronic books (e-books) has variety of features. Moody, Justice, and Cabell, (2010) claim that dictionaries, games, sound effects, and definitions are often used in e-books as an interactive hotspots. Researches which examines e-books is currently in its early stages. Although there are different types of e-books and study designs used in prior researches, many of the research questions have been left unanswered (Maynard & Cheyne, 2005). Hence, another study has concluded that if the e-books are designed well, they can help the learning process of the school-aged children; but not much is known about the effectiveness of e-books for them (De Jong & Bus, 2004; Maynard & Cheyne, 2005). The studies conducted until now stresses the importance of the content of the book, instead of focusing on the format of the book. If the content is the book clear and structured, it may have a positive influence in reading comprehension.

When we analyze the reading skills, many sources consider reading as something we acquire. According to Dehaene and Cohen (2007), learning how to read is not an innate ability. Although most kids are born with biological brain structures that grow and evolve to help them learn how to read they don't know how to read intuitively (Frey & Fisher, 2010). Hence, learning to read is a dynamic process requiring the learner to be actively involved (An, 2013). In the USA 66% of the fourth graders read below the proficiency level (National Center for Education Statistics, 2013). Francis, Shaywitz, Stuebing, Shaywitz, & Fletcher, (1996) stress that efforts in education have been made to highlight the problem as previous studies have demonstrated that students in the 3rd grade who read below the proficient level pursue to struggle during their academic activities. When it is compared with the students who read above the proficiency level, the students who read less than the required level in their future life, they have more possibility to be unemployed or gain below the poverty limit (Kutner, Greensberg, Boyle, Hsu, & Dunleavy, 2007). So reading performance does not only influence the academic performance of the students, but it also impacts the future income.

The average score in the field of reading skills was calculated as 453 and the average score of 37 OECD countries as 487 (OECD, 2019). In Turkey, the proportion of students in the lower proficiency levels are quite high, if an example should be given, the ratio of children with the lowest level of qualification (level 1 and below) is 26.1% in reading (OECD, 2019). The same report also highlights that students with the lowest proficiency in reading can do simple things such as identifying information that is very clear in a text, realizing the main idea of articles on topics that are familiar to them but have a hard time making deeper comments. Thus, PISA 2018 results show that 15-year-old students in Turkey lack basic skills. The proportion of children who showed a high level of proficiency in reading (level 5 and 6) was 4.3% in 2012, dropping to 0.6% in 2015 and 3.3% in 2018. Therefore, the rate of the most successful students in reading is still behind 2012 in Turkey. This includes skills such as showing high-level skills in reading, interpreting information in one or more texts by associating them with each other, and critically evaluating the hypotheses presented. Thus, the 15-year-old children in Turkey have a very low rate level of reading comprehension skills. It is possible to state that low reading comprehension skills influence the level of science in Turkey too.

Developing the students' reading achievement is a challenge for most teachers because they face issues related to resources, course design, timing. Department of Education in the USA realized the significance of this issue and adopted the No Child Left Behind Act of 2001 (NCLB) to lead and to reduce the gap of achievement by end of third grade. Teachers has a vital role in contemplating the lives of students, so perceptions and attitudes of the teacher about screen reading and technology use have a huge effect on how and if screens are facilitated in classrooms (Mathew, 1997). According to the NMC Horizon Report (2014), Schools Edition personalized learning is described as an emerging technology which tends to have an effect on teaching and learning in Europe. Innovative Pedagogy (2015) study personalization is listed as one of the six key popular terminologies that is expected to have a huge effect on educational practices in the close future. The issue addressed in this research was the lack of understanding of students with respect to personalized and gamified e-reading. This issue was apparent in the fact that personalized/gamified e-reading frameworks still need to be explained, reformulated, and made new learning and assessment methods more precise than would be equivalent in consistency to those familiar with conventional programs. Our purpose in this study was to make clear important points increased in former literature with regard to the benefits of electronic reading for students. In the next part, research questions, the purpose, and significance of the study was examined.

1.3 Purpose of the Study

The purpose of the research was discovering the influences of e-book reading by analyzing three types of e-book reading: personalized e-book reading, gamified e-book reading, and PDF e-book reading in sixth-grade students with an attempt to discuss the effectiveness of reading comprehension, motivation, digital attitude, and reading time in EFL classes compared to printed book reading. The study also endeavored to investigate which reading type makes difference, if any, on the reading comprehension, motivation, digital attitude, and time of reading of the participants. To sum up, the current seeks to find out both the perspectives and the worries of students and teachers about integrating e-reading into the middle school EFL environment.

1.4 Research Questions

Overarching research question: How do 6th-grade state school EFL students comprehend a text while reading four different modes, gamified electronic book reading, personalized electronic book reading, PDF electronic book reading, and printed book reading?

1. Is there any difference between the 6^{th}-grade EFL students exposed to gamified e-book reading, personalized e-book reading, PDF e-book reading, and the ones engaged in printed book reading in terms of their reading motivation, and reading time?

2. Is there any significant difference between personalized e-book reading, PDF e-book reading, gamified e-book reading, and printed book reading in the reading comprehension towards EFL reading of the 6^{th}-grade students?

3. Is there any significant difference between personalized e-book reading, PDF e-book reading, gamified e-book reading, and printed book reading in the digital attitude towards EFL reading of the 6^{th}-grade students?

4. What are the reflections and concerns of the secondary school teacher's regarding the reading program applied (gamified e-book reading, personalized e-book reading, PDF e-book reading, and printed book reading)?

5. What are participant students's reflections and concerns about the implementation of the reading program applied (gamified e-book reading, personalized e-book reading, PDF e-book reading, and printed book reading)?

1.5 Significance of the Study

With the increase in technology use in classrooms these days, many teachers continue to incorporate it into their classes by not really aware of the results of technology**.** When this is compared with past, today's students and their way of thinking and accessing knowledge have changed considerably (Gunes & Bozna, 2018). Reading comprehension is one of the most critical skills a foreign language learner, especially a Language Learner, requires to acquire (Aebersold & Field, 1997; Haynes, 2010). Once students improve their reading skills, they continue to make more progress in other language learning fields (Anderson, 2003). The attitudes and confidence of young children in reading have been shown to predict the success of their later reading (McGeown et al., 2015). According to Dickinson et al. (2012), early reading assists the development of the children's language competency, which in turn enhances future literacy outcomes (Dockrell & Connelly, 2009).

This study was important because experts have recognized more and more students start to read e-books. This research brings a fresh point of view via broadening the studies carried on the use of gamified e-book reading and personalized e-book reading in order to enhance the reading performance of sixth-year students provided within Turkish EFL environment. Moreover, this study facilitated the implementation of personalized e-book reading strategy and gamified e-book reading strategy in-state school. Lastly, it is a rodemap for the teachers, administrators, parents, and schools willing to apply personalized and gamified e-book reading in their classrooms, schools, and houses.

Studies have been conducted reading on paper for decades, not much attention has been paid to the students' electronic reading experience despite the increasing prevalence of reading from the monitor (Israel & Duffy, 2014). Electronic reading comprehension of the children is underexplored (Stole, Mangen, & Schwippert, 2020). Especially recently, the FATİH project distributed the tablets to students created teaching sites for the use of both teachers and students such as EBA, Okulistik, Morpa, etc..

There is a shift for reading from printed materials to electronic reading. Some studies reveal that reading comprehension skill and reading motivation are more effective in developing reading skills and in electronic reading students are more motivated to read (Karchmer, 2008; Knezek & Christensen, 2007; Niedo, Lee, Breznitznand-Berninger, 2013; Regtvoort, Zijlstra, & Leij, 2013). On the other hand, education for screen reading skills in our country not having much material, starting to be studied by researchers in recent years, or screen reading programs are insufficient for students not to be trained in screen reading and it is vital to produce content. This research provides a fresh point of view by widening the studies conducted on the use of screen reading in the classroom to enhance the performance of reading, motivation, and the digital attitude of the students.

This study is crucial as school exists in an era where new technologies are continually emerging and studies are needed to explore exactly how assistive technologies are being implemented in classrooms to help students. This study contains a literature review that examines the impacts of gamified screen reading. Reading skills of primary school students are at risk because they encounter frequent difficulties and appear to take on an inactive part while they are teaching (Zimmerman & Schunk, 2006). Morford, Witts, Killingsworth, and Alavosius, (2014) state that game elements such as the direct impact of a player on the outcomes of the game, specific end goals, rules of play, and the development of strategies to complete the tasks that help to motivate students in three ways. Firstly, gaming components can be on a social basis stimulating by providing incentives for group members to cooperate or to compete with other teams. Next, academic games are emotionally rewarding when students receive prizes and input, as they get absorbed in the activities of the game. Eventually, in order to exemplify these features, the game needs to be stimulating enough to include students without overwhelming them.

In addition, this research will lead to the introduction of a gamified and personalized electronic book reading technique in teaching a foreign language. Halamish and Elbaz, (2019) claim that the influence of digitalization on reading comprehension was analyzed especially on university students. Many studies claim that children increasingly read from mobile devices, with the growing usage of digital technology in classrooms (Barzillai & Thomson, 2018; Duncan, McGeown, Griffiths, Stothard, & Dobai, 2016; Livingstone, Haddon, Vincent, Mascheroni, & Olafsson, 2014; Merga & Roni, 2016), so it is necessary to understand how children's comprehension of reading varies when reading text from the screen compared to reading it from the printed text. Famous exams such as PISA and PIRLS which are conducted in many countries are digitalized (Backes & Cowan, 2018; Eyre, Berg, Mazengarb, & Lawes, 2017), this creates a significant incentive for this research. Until now only a limited number of studies have examined the impact of the reading environment on the reading comprehension of students (Golan, Barzillai, & Katzir, 2018; Halamish & Elbaz, 2019; Kerr & Symons, 2006).

1.6 Limitations

The key limitations of this research were as follows:

- This research was conducted in a state project school on 6th grade EFL class in the 2019-2020 academic year.
- It was limited to four teachers and ninety-six students who studied at a 6th grade level in a state project school in Istanbul, Turkey.
- The data was limited with the data collection tools used, and the hours of reading program was applied by the 6th-grade students in the context of the

EFL.

- Research was limited to printed book reading, pdf e-book reading, gamified e-book reading, and personalized e-book reading methods.
- Research was limited to reading comprehension, reading motivation, digital attitude, and reading time.

1.7 Assumptions

The key assumptions of this research were as follows:

- Respondents participated in the research within the scope of the research in a way that accurately reflected their views.
- Teachers and students in the study group were neutral and voluntary.
- In experimental applications when the researcher could not control the experiment and control variables, it was assumed that it affected the groups equally.
- Research results among students in the experimental and control groups it was assumed that there was no interaction that could affect.
- The opinions of the experts applied for the data collection tools used in the research were assumed sufficient.
- Students and teachers exhibited their real behavior in observations was assumed.
- In focus group interviews students claimed their real opinions were assumed.
- Teacher reflective journals were assumed to express their true thoughts.

1.8 Definitions

Motivation: It is a defining trait of individuals such as “goals, beliefs, and needs related to competence that influence their achievement and activities” (Guthrie, Wigfield, Metsala, & Cox, 2010).

Reading Comprehension: Building meaning by utilizing oral and written text (Duke & Carlisle, 2011).

Reading Motivation: Developing conditions which encourage the intention to read (Mathewson, 2010).

Self-efficacy: To accomplish meaningful tasks that inevitably produce desired results in academic settings is the belief and confidence in one's own self (Brozo & Flynt, 2008).

Chapter 2

LITERATURE REVIEW

Introduction

"A person who won't read has no advantage over one who can't read." Mark Twain

The purpose of this chapter was to provide a review of the research literature as it related to multimodal approaches for reading comprehension, reading time, reading motivation, and digital attitude in the Turkish EFL context. Firstly, the background information on the changing face of reading was given. The chapter then focused on the receptive skill of reading and its influences. Next, it shared the recent literature of electronic reading with its implementation in EFL classes. Themes that evolved from the study included (1) a definition of personalization and gamification, (2) a dimension of personalization/gamification, and (3) personalized/gamified reading results were analyzed later. Finally, this chapter was completed with a summary of the literature review which was related to an electronic book reading in different classroom environments.

2.1 Reading

Reading is the first step in learning and academic success (Anderson, Hiebert, Scott, & Wilkinson, 1985). The academic success of the student depends on reading and understanding. Slavin, Cheung, Groff, and Lake, (2008) stated that students who had low levels of reading comprehension had difficulty in making sense of the complex texts they encountered in their academic lives, so they could not understand the concepts related to their lessons, therefore they could not be successful in school and business life. The reading is a basic skill that students need and essential to allow the students to learn new knowledge.

The significance of reading rises, particularly at the primary school level, as students must understand the books which are produced in the subject area and acquire new knowledge. Yet comprehending a text does not automatically meet all the requirements of a course. Students are often expected to examine the information they gained by reading and to properly put it on paper. Reading is the main and most probably the most vital ability which is acquired in the first years of school and acquiring a foreign language includes having the basic four competencies which are reading, writing, listening and speaking. Speaking and writing are called productive skills, while reading and listening are receptive skills. A regular student needs to possess an appropriate level of grammar, vocabulary, cultural awareness, and contextual information relying on the topic in order to comprehend a text.

Reading is defined by Wood (2000) as getting meaning from written words, where the information travels from the page through the eyes and through the brain of the reader. Reading involves many different skills that need to be learned so that the reader can effectively interpret the text (Zainal & Husin, 2011). Efficient reading comprehension is the main objective of the development of reading, which is defined as the ability to extract and transform knowledge through interaction and participation in writing (Sweet & Snow, 2002). Fisher, Frey, and Nelson, (2012) implemented the intervention program they prepared to understand what they studied at 44 schools in a low socio-economic residential area and managed to increase the students' low academic achievement beyond expectations. Considering the results of the aforementioned researches, it could be said that reading skills had a profound effect on the individual's overall academic success.

The importance of reading skill becomes apparent when its contributions to individual, social, academic, and cultural development are taken into consideration. Therefore, it is thought that reading skills should be acquired and developed for each individual. In this context, reading skills in elementary and middle school Turkish Curriculum is considered as a learning area and the gains for its development to the highest level have been determined and put into practice.

2.1.1 Components of the Reading Skill

Reading skill consists of five main skills that require the use of low and high mental skills such as voice awareness, phonetics, vocabulary, fluent reading and reading comprehension (Akyol, Yıldırım, Ateş, Çetinkaya, & Rasinski, 2014; National Institute of Child Health and Human Development, 2000). For students who just start to read, an important part of the reading process is to understand how the spoken language and written language match and to learn how to spell from it (National Institute of Child Health and Human Development, 2000).

In this process, first, the phonological awareness of the individual is formed, and then, through this voice awareness, reading can be started using the phonetic information necessary for comprehension. Phonology emerges as a skill centered on teaching them reading, spelling, and pronunciation of letters and letter groups based on alphabetical knowledge (Adams, 1990; Harris & Hodges, 1995). From this point of view, phonetics can be accepted as a prerequisite for acquiring vocabulary and reading fluently. Because phonetics helps students to create connections between sounds and syllables during the reading process, keeps the syllables in memory and thus enables the recognition/learning of the words, thus forming one of the bases of learning to read (Ehri, 2006). Another component that constitutes the basis of the reading process is vocabulary. The United States National Reading Panel (2000) stated that reading comprehension is of great importance for the development of students' reading skills, but in order to understand the complex structure of the reading comprehension process, the role of vocabulary development and teaching must be clearly understood first. Vocabulary should not be perceived as having information only about the meaning of a word. Having vocabulary also requires knowing how that word adapts to the world (Stahl, 2005). The reader must read through the prosody in order to follow the reading comprehension process in his mind. Because, in this way, student or individual determine when to pause in sentences, when to raise and lower the voice, when to add emotion to the text, and to which words it should emphasize, and the next read will be more clearly understood (Rasinski & Samuels, 2011).

The below-mentioned skills are at the core of the students' understanding of what they read and being good readers. In figure 1, the process of reading was explained. In this context, it is considered that teaching activities to be carried out within the scope of reading skills should focus on the acquisition and development of these skills.

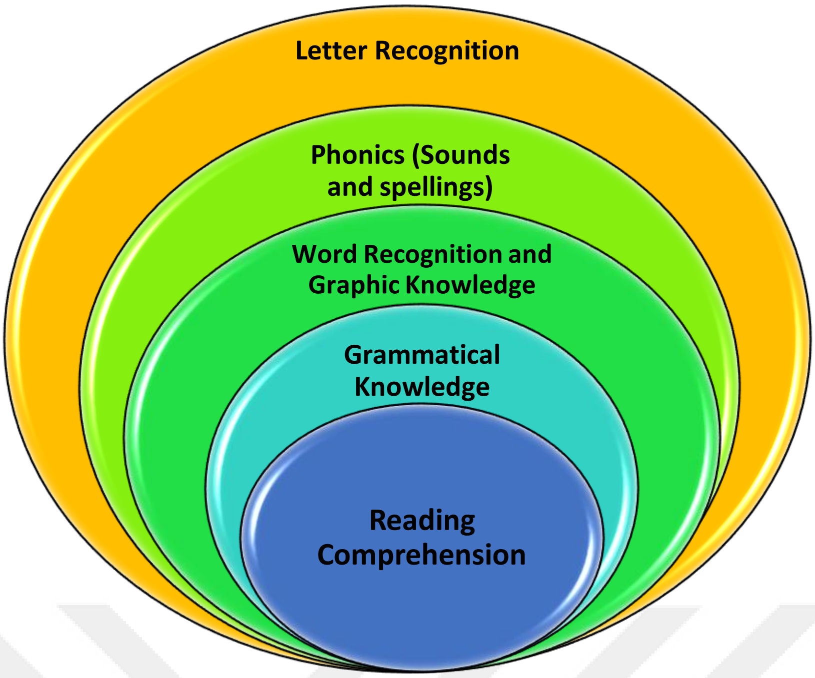


Figure 1 ***Reading Comprehension Cycle for Young Readers***

2.1.2 Printed Storybook Reading

When language and reading skill development of the students was analyzed printed storybook reading had a fundamental role to play. According to the National Institute of Child Health and Human Development Report (2000), the lexical development of the student had a vital role in the development of reading. A meta-analysis, which was about the significance of storybook reading while learning how to read showed that exposition to storybooks was linked to enlarged lexis and reading ability (Bus, Takacs, & Kegel, 2014). Furthermore, the National Institute of Child Health and Human Development Report (2000) also claimed that supporting reading competencies by encountering new vocabulary in the early development of students' printed storybook reading took a crucial part, it helped their attention, and memory to enhance. Another study which was conducted by Verhallen, Bus, & de Jong, (2006) shows that storybooks put the students into an environment where they encounter new vocabulary and letter-sound associations and which after repeated confrontations with new words, enlarges lexicon of the children.

Students could increase their reading comprehension performance if they understand the type and characteristics of the text (Duke, Pearson, Strachhan, & Billman, 2011; Meyer & Poon, 2001; Ray & Meyer, 2011; Stevens, Van Meter, & Warcholak, 2010). It can be said that the types of text, students often encounter during the learning process are narrative and informative texts (Yıldırım, Yıldız, Ateş, & Rasinski, 2010). While narrative texts aim to convey an event or situation in a cause-effect relationship, informative texts aim to inform the reader about a subject, types of narrative texts are stories, novels, fairy tales, fables, epics, legends, and memories. The types of informative texts can be listed as scientific, historical, travel notes, criticism, essay, biography and autobiography. It is necessary to understand how the texts are structured in order to comprehend what the types and properties of the text are. Information on the structures of narrative text types is given in Table 1.

Table 1

Structural Elements of Narrative Texts (Adopted from Duke, Pearson, Strachan & Billman, 2011)

Elements	Description
Characters	What the story was about
Setting	Where and when the story happened
Goal	What the main character was trying to do
Problem	Why the main character took certain actions
Plot or action	What happened to the main character or what she or he did to try to solve a problem
Resolution	How the problem was solved and how the story ended
Theme(s)	General lessons or ideas

During the process of reading comprehension, teachers teach students the story map, story frames, guided reading and thinking for narrative texts during the teaching of text types, features and structures; For informative texts, various techniques such as using hint words, using graphic organizers, mutual teaching can be used (Blachowicz & Ogle, 2008; Oakhill, Cain, & Elbro, 2015; Vacca et al., 2015; Williams et al., 2014). Story maps have been developed to guide teachers in the development of questions that help students make sense of the text they read (Beck & McKeown, 1981). The purpose of creating story maps is to visually reflect the important ideas in the text and the relations of the concepts or events in the text (Reutzel, 1985). From this point of view, it is a functional tool in terms of providing a story to be processed in the classroom to convey the message it wants to convey to the reader comfortably and revealing its structural elements (Vacca et al., 2015).

One of the most powerful ways to ensure that students are active readers is guided reading practices. The purpose of the guided reading studies is to enable students to actively think through the reading process during the reading activities carried out with a small group of students, thereby increasing the success of reading comprehension (Blachowicz & Ogle, 2008). At the same time, with the guided reading studies, it is aimed to determine the reading objectives of the students, to obtain information, to analyze the reading materials according to the purposes of reading, to suspend the decisions taken during the reading process and to develop decision-making skills based on the information gained during reading (Staenner-Renn, 1999). In order for comprehension to be realized, readers must demonstrate many cognitive and affective skills before, during, and after reading. It is one of the main goals of reading education that every student who is aimed to gain reading comprehension skills knows how to use these skills in the process of reading comprehension.

The expectation is that students who experience this sort of instructional approach to text inquiry will develop an improved understanding of the texts to which the routine is applied, improved understanding of texts they meet on their own at a later time, and most importantly, a critical disposition toward texts in general. Ideally, this approach helped students to be entertained while reading.

2.1.3 Electronic Book Reading

The literature interchangeably uses online reading, screen reading, and e-reading (Sandberg, 2011). The first waves of transition started in the 1980s and early 1990s with greater reading on computer screens. In the last years of the 1990s, the ripples amplified with the emergence of email, instant messaging, digital versions of newspapers and magazines, and effective online search tools (Baron, 2015). When e-books finally started selling (after the introduction of Amazon's Kindle), a growing number of people turned to an onscreen reading book-length document. A tidal wave ensued with the coming of the iPad in 2010.

The paradigm had shifted, and reading from the printed text was perceived as old-fashioned. The explosion of online academic courses (usually complete with online readings) has become a sign of the times. And one more sign is in June 2014, a US ambassador took the oath of office on an eReader for the first time.

Then, reference books publishers followed the trend. The Oxford English Dictionary announced in 2010, they stopped publishing dictionaries as hardcopies.

Encyclopedia Britannica in 2012 stopped publishing printed encyclopedias. In 2013, Macmillan stopped also decided not to publish physical dictionaries. In 2005, the University of Texas at Austin caused a stir by removing nearly all books from its undergraduate library and then San Antonio caught the no-book fever. San Antonio’s Applied Engineering and Technology Library house more than 400,000 volumes—but all virtual. Bexar County, Texas, which includes the city of San Antonio, next joined the digital club (Baron, 2015). In 2013, a free book library was founded by BiblioTech, with its collection housed entirely on computers, tablets, and eReaders.

The second kind of e-books is “digitally native,” meaning they are designed to capitalize on the special possibilities digital technology offers. Visual images stills or videos are increasingly common. Digitally native books are made for user interaction: rotating images, connecting with web pages or other readers, and maybe completing quizzes and getting feedback on performance. In the publishing industry, digitally native e-books will be an important development, though as a genre; they are still very much a work in progress, partly because they are expensive to produce and partly because we need to figure out what we want digitally native books to accomplish. In 2009, Amazon's e-book sales in the United States for the first time in history exceeded hardcover sales thanks to new e-book reading customers willing to fill those Kindles found under the tree that morning. Kindle's eBook sales got ahead of paperbacks by January 2011. Sales of e-books increased by 117 percent in 2011 over 2010. The growth was 164% in 2010, and 177% in 2009. In 2008, eBook sales constituted only 1 percent of the revenues of American publishers. These sales accounted for almost 23 percent in 2012. For adult trade books, the number had risen to 27 percent by 2013.

Whereas e-book sales have continued to rise, printing's fate has been a different story. American print book sales dropped nearly 16 percent between 2010 and 2012. The U.S. was not alone, as international print sales also slowed. Economies around the globe were impacted by the Great Recession, with print book sales being just one target of market decline. Electonic book penetration has not risen above the single digits. Simple logic says there was hardly responsible for the decline in print sales in digital publishing. Even before e-reading apps proliferated, America was wondering whether the reading was at risk. A survey was carried by the National Endowment for the Arts (NEA) in 2004 and claimed that reading is at risk and the number of adults reading literature fell by 10 percent between 1982 and 2002. A subsequent NEA study released in 2007 extended "reading" to include all manner of non-fiction — not just books, including magazines, newspapers, and online reading. The research has also included teenagers this time. Although 15-to-24-year-olds watched TV for almost two hours a day, they only spent seven minutes reading for leisure. The image appeared a little brighter in 2009 when Reading on the Rise was published by the NEA. Adult literature reading had risen by 7 points, with 18-to-24-year-olds making the highest growth. The survey asked, "Have you read a) novels or short stories over the past 12 months; b) poetry; or c) plays?" That's "any" like in "even one." There was a decline between 2002 and 2008 when the survey asked about reading books of any kind of fun. A recent analysis was conducted by Nielsen Book, which showed that a shocking 41 percent of the teens surveyed were not reading for pleasure.

According to the results of the Pew Internet & American Life Project (2011), adults aged 16 and older who read electronic books reported doing more book reading overall e-books plus printing than those who read only hardcopies: an average of twenty-four books per year compared to fifteen books. The Pew research focused on 16–29-year-old students. Among those who said they were reading long-form digital content (defined here as books, newspapers, and magazines), 40 percent said they were spending more time reading now because they were able to access on-screen material.

Psychologists and writers have been comparing how we read on screens and in print for more than twenty years. Research has checked everything from the ability to proofread and read pace to comprehension and eye movement. In fact, almost all recent reports do not mention any variations.

Children's e-books (from babies to teenagers) have become a modern publisher target. With sales revenue for adult e-books cooling off from earlier triple-digit growth, attention paid off to the children's market: 2012 e-book revenue rose 121 percent over the previous year in the *"children's / young adult"* segment. Conferences and webinars concentrate on e-books for children, and annual book fairs from New York to Frankfurt and London are packed with new digital deals for books. In Andi Sporkin's terms, a spokesperson for the American Publishers Association, *"It's the fastest-growing group in the industry"*. Statistics from early 2014 show that e-books are now being read by two-thirds of American children aged 2 to 13. But look closer and blur the picture. Throughout 2011, Pew interviewed adults in the past 12 months who had read e-books as well as printed books. Of these, 81 percent said print was a better format for reading with a child. Data from a year later documented parents' belief that having children read print books themselves is “very important”.

Reported in the New York Times, Matt Richtel and Julie Bosman found that even "die-hard book downloaders on Kindles, iPads, laptops and phones" wanted their kids to read (and have it read to them) in print. What's the reason? Parents were concerned that the "bells and whistles" of the devices would distract their children and not focus on the part of reading.

Richtel (2011) claimed that Silicon Valley parents sending their kids to the Peninsula's Waldorf School, where there are new technology and paper, pen and knitting needles and parents included eBay's head of technology, along with Google, Apple, and Yahoo employees. These men are hardly technophobic. Yet they acknowledged that there was time and place to use digital tools, and not one of them was early schooling. In one father's words, whose Google experience included writing speeches for Eric Schmidt, "If I worked at Miramax and made good, artsy, R-rated movies, I wouldn't want my children to see them until they were 17".

Publishing industry research shows that parents — and kids — are not sold to younger readers in full on e-books. Bowker (2012) found that 69 percent of parents favored print books for children under the age of 6 and that 61 percent preferred printing for children 7–12. The children's publisher Scholastic has reported similar results. Data came from the teenagers themselves on 13-to-17-year-olds and the preference for printing over e-books increased from spring 2012 (61 percent) to fall 2012 (66 percent) in the Bowker analysis, corresponding to the level recorded for fall 2011. Bowker referred to this move as printing *"snapping back"*. Once teens were asked why they did not want to read e-books, the responses included a desire for the experience of a printed book, the cost of having a digital device, and not seeing on-screen reading.

It is one thing to look at sales figures and personal preferences when talking in children's e-books. Another one is to ask if e-books are good for children. The issue is about the minds of many people. The American Academy of Pediatrics continues to encourage parents to limit the amount of time that children under 2 years of age are exposed to media, including any kind of digital screens and not just television. The

2011 study of the Academy recommended that *"unstructured playtime is more important for brain development than any access to electronic media"*. Or, as Frederick Zimmerman at UCLA put it, "Children need laps, not phones." Travel writer Paul Theroux had to say this: With e-Readers something is definitely lost — the physicality of a novel, how you make your own book by reading it, and living with it as an object, sometimes as a talisman.

The text-as-decor practice dates back at least to Seneca's period, who rebuked "those who showed scrolls with painted knobs and colored labels instead of reading them."

Daniel Defoe included this dialog in his socially mobile book, The Compliant English Gentleman, published in the early 1700s in early modern England with the rise of a new gentry class:

Gentleman: *“What should I do with books? I never read any. . . .”*

Friend: *“O but Sir, no gentleman is without a library. ’Tis more in fashion now than ever it was.”*

. . .

Gentleman: *“I hate anything that looks like a cheat upon the world. Whatever I am, I can’t be a hypocrite. What should I do with books that never read half an hour in a year I tell you?”*

Friend: *“But, Sir, if a gentleman or any relation comes to your house to stay any time with you, ’tis an entertainment for them . . . ; besides ’tis a handsome ornament.”*

The accessibility of digital screens is a significant affordance. They make the load lighter. Consider twenty books in your luggage on a Kindle versus twenty. They also help clear space on the floor. Alex Halavais, a communications and social media professor, made news in 2010 to systematically search most of his personal library of 3,000 volumes and then dispose of the originals of the hardcopy.

The print has its own contextual cues, with the very physicality of a book, newspaper, or magazine being foremost among them. You have a real sense of place when you read printed text. You have a feeling of touch as well. Andrew Piper, a professor of literature, says, "Learning isn't just a matter in our brains; it's something we're doing with our bodies."

Recent trends have prompted on-screen practices such as watching TV, playing games on mobile devices such as tablets, laptops, and other apps and have dominated the everyday lives of children (Zeijl, Crone, Wiefferink, Keuzenkamp, & Reijneveld, 2005). Children around the world become more and more familiar with technology at an early age. In addition, there was a dramatic increase in the number of electronic storybooks.

Former US President Barack Obama has recognized the value of electronic books by announcing the introduction of Open e-books, a collaboration between the American Digital Public Library, the New York Public Library, and First Book (New York Public Library, 2016). This is a timely move, in schools across the country implementing Bring Your Own Device (BYOD) initiatives that allow students to bring electronic devices to school (Milman, Carlson-Bancroft, & Bogart, 2014). Children who are considered as conventional readers use e-books (Jones & Brown, 2011). Though, it can be more challenging to transit from using printed books to e-books with especially early readers. Larson (2012) keeps reminding to teachers that while a reader does not physically change print text, certain e-texts may actually change when the reader uses the resources and features available in the digital format.

2.1.4 Interactive Features of Electronic Books

There is a notable variance among electronic and printed storybooks, and the interactive elements are also referred to as hot spots. Such elements can include games, dictionaries, repetition of text, and animations. With their wide variety of interactive e-books show significant variability in their quality, this contributes a lot to the diversity of the findings and results of the studies (Korat & Shamir, 2004). Another study highlights the interactive games in electronic books do not raise the reading comprehension of the children (Grimshaw, Dungworth, McKnight & Morris, 2007). If the e-book has interactive features, those features appear to disturb readers from the content, rather than help to learn. According to a study which is conducted by De Jong & Bus, (2002), even though a game's content is linked to the story's content, kids don't learn from interactive games. Additionally, children can be distracted by interactive features. Storybooks that are designed to accelerate learning created a distraction to them (Trushell, Maitland, & Burrell, 2003). They permit the reader to communicate with the story sometimes by facilitating the monitor of the electronic device or the mouse. Even though some e-books can have restricted features such as having sound effects, some others have embedded games so as to engage the child in reading.

When it is compared with the book which does not have interactive features, children who read from the screen by utilizing interactive features remembered remarkably less information concerning the story. Trushell and colleagues produced books with animations and sound effects and found that 75% of the features were unrelated to the plot line at the end of the novel (Trushell et al., 2003). Furthermore, another research which is conducted by Felvegi and Matthew (2012), children who have the chance to choose interactive "hotspots" when they are doing leisure time reading, they are more engaged with the hot spots than less story content. The children who read interactive books have a tendency to spend more time on interactive features, this causes passive engagement with the book. Chiong, Ree, Takeuchi, and Erickson (2012) figured out that the books which have diverse interactive features cause a distraction for young readers. To conclude, according to the studies, interactive features that embed games or various features do not help children's story comprehension and prevent children to focus on the content of the story. On the contrary, well-designed e-books have been understood to increased learning, particularly for students who have learning disabilities (Shamir & Baruch, 2012; Verhallen, Bus & de Jong, 2006). If the story is supported by multimedia features that dramatize the events in the story, children facilitate from enhanced vocabulary, syntax, and story understanding (Verhallen et al., 2006). Besides, the development of literacy, when e-book features are customized for classroom use to support math skill development, early math skills, and lexis of the children improve considerably in comparison with traditional classroom teaching (Shamir & Barush, 2012). Reading comprehension is an important skill not only for social science students but also for numerical science students.

Personalized teaching materials were examined by taking the opinions of the students who were applied on the application and positive outcomes were reached in personalized teaching materials in several studies (Awofala, 2011; Awofala, 2014; Bates & Wiest, 2004; Çakır-Balta, 2008; Dutke et al., 2015; Hart, 1996, Powell, Tindal, & Millwood, 2008; Sezer, 2015; Regis, 2017) support the findings obtained in the studies.

When it is compared to the traditional reading of the storybook, students who are reading from an e-book demonstrate greater patience with the task of reading, which is associated with increased exposure to books and general literacy skills (Moody et al., 2010). Therefore, children have a tendency to choose e-books when deciding between electronic and printed books, which may further increase their desire to read in electronic form (Jones & Brown, 2011). In the study which is conducted by Moody et al., (2010), the use of e-books has been associated with increased support, involvement and cooperation among children employed in educational settings for group assignments and the same study also suggest that student enjoy reading e-books and show increased enthusiasm and interest when using e-book interactive features. The involvement and interest of student while reading is correlated with many positive results and is not well known among students. The interest of students was measured during a book reading session by independent observations of student's behavior and utterances (Moody et al., 2010). They found out that the use of interactive features by students during e-book reading, the self-reported preference of students for e-book or paper books, and the visual attention of students on and off task.

2.1.5 Personalization

Dictionary meaning of personalizing is tailoring something for a specific individual. If this tailoring process involves a group of individuals, it is called customization. "The boy who lost his name" can be given as an example of a customized book. Customized books are generally created for specific age groups or they are books suitable for boys and girls. Dictionary meaning of customizing is the process of tailoring generic products according to preexisting templates and scripts.

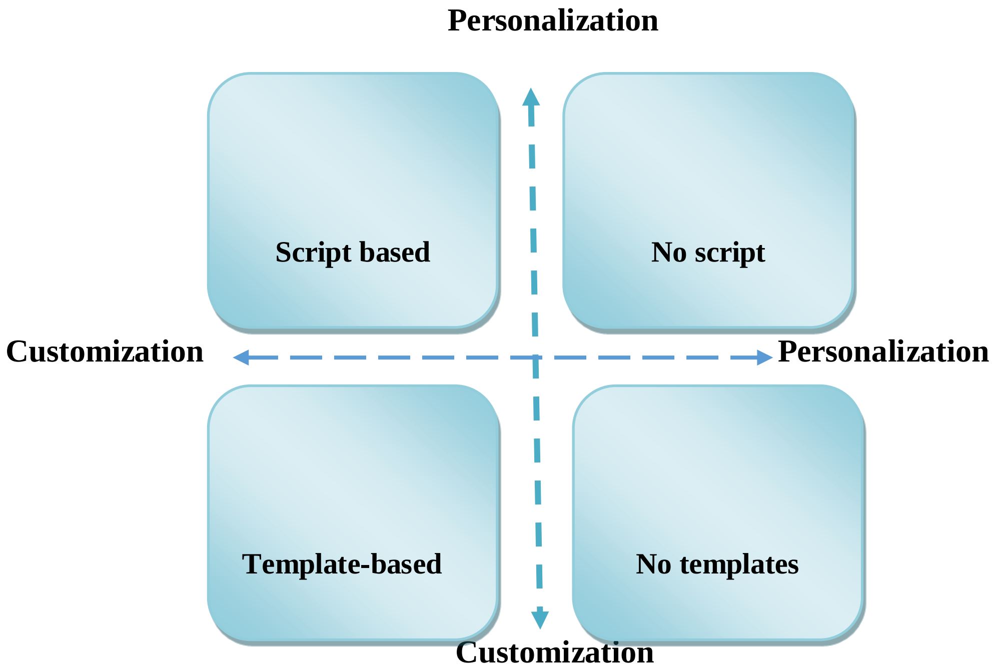


Figure 2 ***Three Kinds of Child Involvement in Personalized Stories (Kucirkova, 2016).***

In figure 2, three kinds of child involvement in early authoring and their relation to storybooks' content and format are explained.

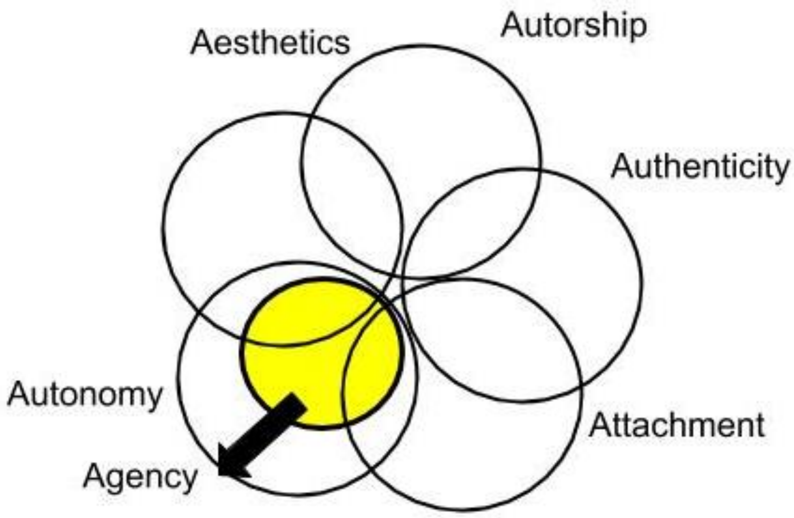


Figure 3 ***5As of Personalized Children Books (Kucirkova, 2017).***

In figure 3, five dimensions of personalized children's books can be found. In education, personalization can be constructed in the light of the so-called 5As: authorship, autonomy, authenticity, aesthetics, and attachment, which are used as a set of pedagogical techniques that assist the language arts curriculum in schools (Kucirkova, 2017). Personalizing electronic books does not mean selecting the gender of the story, it means adding the reader's own voice recording to the story and personalization encourages children's authentic contribution to the story (Kucirkova, 2017). Personalization is an issue that has five elements in it. In order to discover these five dimensions can be analyzed in table 2.

Table 2

Features of Personalized Children's Story Tools (Kucirkova,2017).

Theoretical construct	**Psychological properties**	**Design Features**	**Guiding Questions**
Autorship	Volition	Multimedia options Multiple ways of meaning expression Multiple ways of story-representations	To what extent can children express meaning in more than one way? How much flexibility does the app offer for changing and adapting multimedia content?
Autonomy	Independence	Easy-to-follow navigation Iconic representation Inbuilt guidance	To what extent are individual features immediately responsive to children's actions To what extent can children use the app on their own and personalize it for their own use?
Authenticity	Schemas Singularity	Templates Open-ended design	To what extent is children's story-making based on their own ideas? How much is children's story content driven by pre-established frameworks and templates?
Aesthetics	Interpersonal intentionality	Participatory design approach Flexible design	To what extent can children adjust the look of the story app and its individual elements? To what extent can children participate in creating the rules around design?"
Attachment	Ownership Bonding	Ownership markers Story-sharing possibilities	Who owns the final story created with the app? How can children share their finished stories with others?

Furthermore, designers need to decide the mixture of the individual elements and to what degree they are present together in a story-making device. The criteria set out in Table 2 can be converted into a scoring framework, with responses considered in terms of high, middle, and low ratings.

2.1.5.1 Personalized E-reading

A Personalized electronic reading is tailored for or by a specific child. The main purpose of the personalized books is to support children in reading and experiencing fictional narratives. Personalized reading systems typically aim to teach children new concepts or provide them with a set of tailored reading experiences (Kucirkova, 2017). The same researcher also states that these programs run by algorithms that automatically generate content based on the user's characteristics or past activity and UCL have a personalized reading system which is called Ireadproject. The system which uses an adaptive learning model provides children with applications and games that correspond to the child's reading profiles and progress with the reading games. According to Kucirkova (2016), there are varieties of personalized e-reading elements such as: listen to the story, record voice, get immediate feedback, and help when students do not understand, highlight text, use of hotspots, read to the student, and story authorship. Kucirkova (2016) also claims that the child's name as the main protagonist or other story characters can carry the names of the child's friends/relatives. Using child's favorite toys, foods, places can also be part of the story and besides all of these, a child's own drawing, photograph, or personalized interactivity are also examples of personalized electronic readings' main elements. Students might interact with the story elements in ways that are unique to them such as creating their own avatars and use it as the protagonist of the book. With the help of personalized electronic reading elements, we can create meaningful and enjoyable stories for our future.

In contrast, personalized electronic books might have some limitations. Interactive elements that are used in personalized electronic books such as hotspots and games might interfere with children's understanding of the story and might result in cognitive overload (Bus et al., 2014). Kucirkova (2017) do not advise to use only personalized electronic books. We need to create a balance while we are building personalized children's stories by remembering these reasons.

2.1.5.2 Influence of Personalization on the Reading Comprehension of Children

Even though recent studies investigating the effect of personalization on reading are scarce, several conclude that personalization may have possible advantages for early communication, language, and literacy growth. According to Cordova and Lepper (1996), on 72 elementary school students, one US research examined activities to promote the learner motivation of students contextualization, personalization, and choice. Investigators encouraged children to participate in educational computer tasks that included information given in a personalized format, either in a generic or individual. Nonspecific references were substituted in personalized format with those personal mentions to the child such as birthdays, names of friends, favorite foods, and hobbies that were collected before through a questionnaire. The study was designed to combine the educational activity with students' characters and objects of inherent interest. As a result of the study, researchers indicated “learning can be enhanced when problems are presented in familiar concrete contexts that could allow students to draw on their experiential knowledge from those contexts” (Cordova & Lepper, 1996).

Although researchers warned that the strategies used in personalized reading might be less advantageous for children who were already highly motivated and task-oriented, results that are related to the power of personalization to raise children’s motivation to learn, engagement, and confidence were encouraging.

Small-scale studies have shown that there is a relationship between personalization and the ability of children to learn new vocabulary and to recall. Kucirkova et al., (2014) state that discovering the possible effects of personalized word acquisition story material arranged for eighteen pre-school children found that kids presented a statistically significant difference in word acquisition as compared to the control group where words are used in non-personalized stories. In the same study researchers also concluded that personalizing young children's books can be seen as a beneficial way of supporting the development of young children's vocabulary through shared reading of books (Kucirkova, et al., 2014). The interest to read books has been increased by a sense of the text 's straight personal value, suggesting that personalized elements that not only attract the interest of the children but it has a positive effect on their literacy outcomes. In addition, the use of personal compelling narratives allows readers to integrate new information into a wider awareness base from which more universal information can be acquired (Daniel, Waddill, Finstad, & Bourg, 2000, as cited by Clark & Phythian-Sence, 2008). Kucirkova (2010) mentions that Personalized information greatly enhances understanding with reduced memory load as students build on their previous knowledge and knowledge.

Memory is strengthened as individuals identify stimuli about themselves (Turk, van Bussel, Waiter, & Macrae, 2011). It is possible to state that elements of personalized books that help kids instinctively connect words to themselves and their own experiences can support word processing and recall. Another study had shown that the learner's memory expanded when questions linked a word to a personal vocabulary (Rogers, Kuiper, & Kirker, 1977), and if people could categorize stimuli in connection to themselves, memory was improved (Sui & Humphries, 2015). Some other study which was conducted by Kucirkova et al., (2014) showed that word acquisition in pre-school children had increased significantly with the personalized parts of books compared to words appearing in non-personalized storybooks.

Naceur & Schiefele, 2005, as cited in Clark & Phythian-Sence, (2008) state that word recall and processing have also been found to increase when personalization elements are used. Another study reached that when you include personalized elements inside of the books, it increases reading comprehension. The author of the study indicated that personalized stories may have been more compelling for some students because of a sense of greater personal importance (Bracken, 1982). To conclude, there are various positive results of personalization on vocabulary. The inclusion of personalization of older children’s books increases reading comprehension. A study which is conducted in the USA on 40 fourth-grade children shows that once personalized elements like names and addresses, obtained from questionnaires were applied to reading books, their reading comprehension levels increased more than fourty percent. As a result of this, the researcher summarized the findings as :

“It appears likely that children who find reading difficult because of uninteresting materials would become more involved in personalized stories because of their personal relevance.”

(Bracken, 1982)

“…Personally interesting narratives allowed readers to incorporate new information into a broader knowledge base from which more general information could be recalled.”

(Daniel, Waddill, Finstad and Bourg, 2000, as cited by Clark and Phythian-Sence, 2008). A similar suggestion was given by Kucirkova, who put forward that

“Personalised information enables enhanced understanding …with reduced memory load [as] the learner is building on previous knowledge and known concepts” (Kucirkova, 2010a). Research connecting personalization, reading recall and comprehension, would once more seem to suggest that texts with personalized elements may help the reading output of certain groups of readers, for instance, those less interested in non-personalized texts.

2.1.5.3 Seeing Yourself in Personalized Electronic Books

There is a sense of uniqueness in the personalized electronic books; parents and children know “There’s no other book out there like it” (You and Yours, 2017). This can create a sense of ownership, and, as Dymore and Griffiths (2010) state, “Ownership of text, both in the literal and metaphorical sense, is a significant element in the process of becoming and perceiving oneself as a reader”. Williams (2014) describes as:

“…The sheer specialness of seeing your name on a page in a well-loved and familiar context. …For children, at least, it broadens, rather than narrows the book’s focus; it makes explicit the idea that they are welcome here, in the world of the written word.”

(Williams, 2014)

Students claim that seeing yourself in a book migh give an influential impression on children, it also supplies the indication that they are accepted in the written word universe (Williams, 2014). Moreover, academics have recommended, “Ownership of text, both in the literal and metaphorical sense, is a significant element in the process of becoming and perceiving oneself as a reader” (Dymore & Griffiths, 2010). In personalized books changing the main character's gender, race, and cultural context helps children to see a person like them portrayed in a published book at a time when children's publishing in most societies is far from representing the diversity of ethnicities.

Personalized narratives can provide useful opportunities for examining various reasons and motives for the actions of unfamiliar characters by putting them directly alongside the motives of the featured child. According to a review “reading is closely linked to increasing understanding of our own identities and can also play a large part in relating to others, understanding their world-views” (The Reading Agency, 2015).

Personalized stories can suggest worthwhile possibilities for the attention of various problems and motivating factors for behaviors of unfamiliar characters by placing these directly the featured child. “When children never see their culture represented …in materials on the library shelves, they receive a resounding message that the librarian does not think their culture is important” (Campbell-Naidoo, 2014). Nonetheless, this “cultural invisibility” is indeed a major worry for librarians, book writers, and other curators, it also reflects a serious lack of diversity in the overall publishing children book industry. Flood (2014) noted that while there are no similar statistics available for the UK, “…experts have said that the issue is a ‘huge problem’ in the UK as well”. She quotes inclusion consultant Beth Cox:

"All children have the right to be included in books, to see faces that they can relate to on the covers, to meet characters with similar families, lives, and experiences. Equally important is for children to see differences in books, to learn about those who are different from themselves, and to realize that they do have many similarities." (Cox, as cited by Flood, 2014).

Research has also shown that personalization can have a beneficial influence on the dedication to learning, confidence, and motivation of children. Another research reached “manifest and immediate” effects and “dramatic increases …in the amount [children] learned… and [their]…perceived competence and levels of aspiration” once learning setting include personal information (Cordova & Lepper, 1996). Motivations of individuals have continually been related to their sense of possible self (Oulasvirta & Blom, 2008). Nevertheless, depending on the essence of the story, seeing yourself in a book will lead to children's sense of "possible self" and motivation, which may possibly benefit children in the early stages of considering their place in the world and their future aspirations. Stories play a prominent part in developing a sense of personal identity and understanding other people's emotions, feelings, and motivation.

2.1.5.4 Taxonomy of Personalization Features

Fitzgerald et al.’s (2017) framework created key personalization features and it is provided in Figure 2 they created the categories by analyzing the answer of the questions of “what is being personalized?”, “How does personalization occur?” and “Who personalizes the experience?”

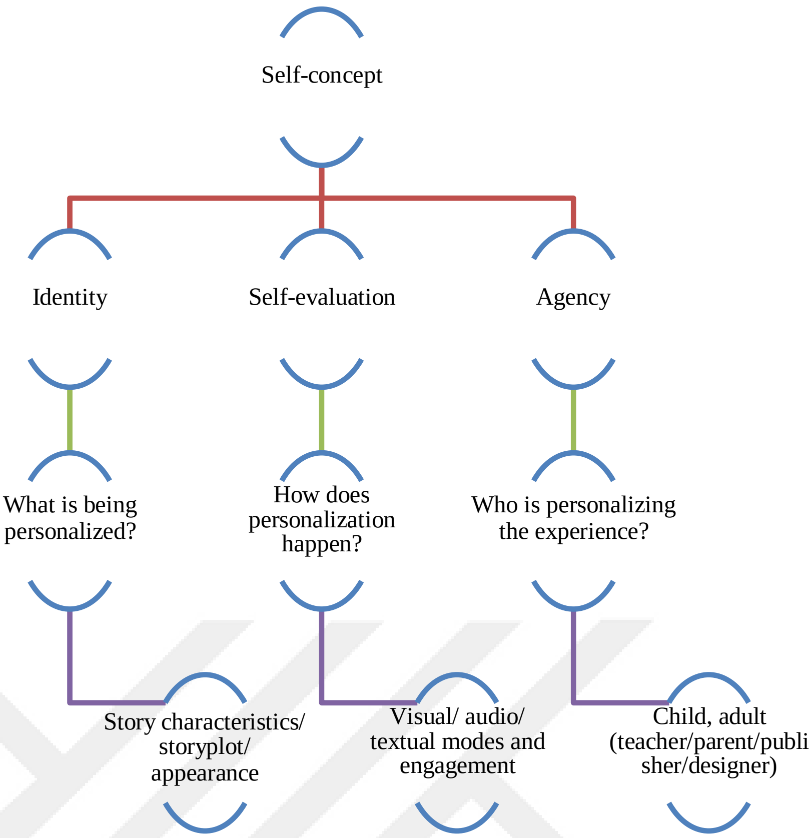


Figure 4 ***Key Questions to Ask While Creating Personalized Reading Environment***

In figure 4, you can find the key questions and related dimensions of personalization.

Table 3 explains the findings of this study and outlines what is being personalized with a brief description and examples of the app. More research focuses on how the child appears to be personalized and how this positions it. Table 3 summarizes the various ways in which personalization was portrayed in the highest-scoring literacy apps and the participation of the child in the personalization process.

Table 3

Key types of Personalization in Technology Enhanced Learning based on Fitzgerald et al. (2017).

Type of Personalization	Explanation of the category with examples
Story Characteristics	It includes instances where the attributes of the reader have been used to alter key plot details, including the characters of the novel. For instance, Collins Big Cat: It Was a Cold, Dark Night Story Creator applications by Harper Collins Ltd, children can pick the main character of the story, they can determine what the story is about and the ending tone (happy, sad, or funny). Furthermore, with their own voiceover, children will follow the story so that the user talks as the text progresses.. They can also use pictures and main words from the story to make their own book.
Story Narrative	This category gathers stories whose story plot is tailored to the user's input or data. This could be with different story endings. In the Little Red Riding Hood application by Nosy Crow, children can have three possible story endings. Another way to adapt the plot of the story is with the data of the users. For example, Delirium LLC's Cookie Next Door – Rainy Days app doesn't have a predefined narration but provides the user with pictorial models and space to add their own audio recordings and text.
Story Appearance	This category covers all cases of personalized books in which the reader can change the style and type of the final story with a variety of attributes, including color, scale, preferences for printing, illustrations, graphical or handwritten words on the cover and individual pages. The Mr. Glue Stories app allows users to modify the story images with their own sketches and audio recordings. The book is available as a digital interactive book or as a paperback; the material is constant but the format can be changed flexibly, beyond basic customization.

Iser (1972) discussed the value of texts in the storybooks and which is completely understood mostly through the reader's own communication with the content, making connections among personal and fictional narratives. The researcher also explains *"gaps"* in texts as necessary to open up the space for readers' own input: "*Thus, whenever the flow is interrupted and we are led off in unexpected directions, the opportunity is given to us to bring into play our own faculty for establishing connections for filling in the gaps left by the text itself"* (Iser, 1972). In table 4 explains types of involvement while personalized reading in technology-enhanced learning. You can see it in detail that there are three types of personalization in children's stories, and they are audio, textual, and visual.

Table 4

Types of Involvement While Personalized Reading in Technology Enhanced Learning based on Fitzgerald et al. (2017).

Types of Personalization	**Child's full involvement**	**Child-producer involvement**	**Producer's involvement**
Audio (Oral)	A child can record their own music or voiceover. For instance, in Our Story app, children can add any audio recording they want to the story.	A child can have access audio-recording which is made just for them. For example, parents record a voiceover for one of the fairy tales available through the Me Books Ltd. app for the child to access later on.	A child can select music or sounds from a bank of recordings. Toca Dance application can be given as an example, in the application children can choose one of five original songs when creating stories.
Textual (written)	Children write their own stories (e.g., the My Story app has no templates for children to write any text they wish).	Children read stories written especially for them (e.g., with the Amazing Alphabet app children can see individual letters of their name "come to life" on a printed page of the accompanying Amazing Alphabet book).	Children can select words, sentences, and story possibilities from a bank of textual resources (e.g., with the DinoTales app from KuatoStudios children can pick and choose sentences to complete their own Dino tale).
Visual (pictorial)	Children can add their own drawings or photographs into the story (e.g., The Cinderella app by Nosy Crow that has an embedded camera as part of the story illustrations)	Photographs can be added to pre-designed stories (e.g., in the Mixtory app children's photograph can be added as one of the book's illustrations)	Children can select from a set of illustrations or visual representations of story characters (e.g., in the Goodnight Lad app children can select the costume for the main character and decide whether the narrator is a pirate or a superhero).

Digital children's book personalization features include a number of "gaps" for children's own contribution, especially which are connected to their self-representation. About half of the most popular interactive children's books, as seen in our research, make it possible to portray the children's own self-concept in various ways such as visual, textual, and audio. Implementation of these features tends to trigger self-assessments, especially for applications that welcome personal memories in narrative content or memory-inviting such as the Our Story app. Therefore, a promising field of future studies would be to study how various groups of children take up these invitations to self-representation and how they impact their self-representation and self-esteem.

2.1.6 Gamification

Gamification is generally defined as the implementation of game elements (Deterding et al., 2011; Ding, Er, & Orey, 2018; Domínguez et al., 2013; Schöbel, et al., 2019; Zimmerling, Höllig, Sandner, & Welpe, 2019), and game mechanics in non-game contexts and it is a groundbreaking way of promoting digital materials powered learning. Gamification has become a trending topic in education because of its impact on students learning (Göksün & Gürsoy, 2019). York and de Haan, (2018) claimed that building on constructivist learning, this approach predicts the necessity of experiential learning through social contact with the world and peers. Gamification also provides student learning data by enabling more accessible, accurate, and timely information for teachers, parents, administrators, and policy-makers (Darling & Hammond, 2010).

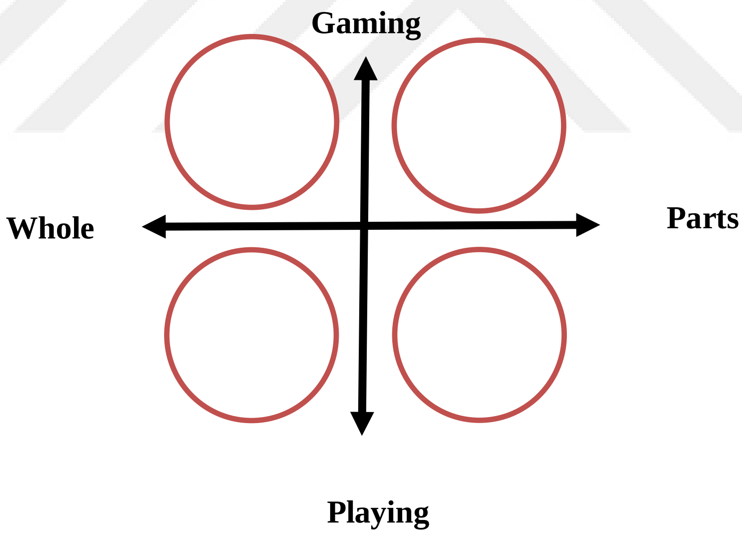


Figure 5 ***Positioning of Gamification (Based on Deterding et al. 2011, p. 13).***

Figure 5 explains the gamification term and other related terms in the literature, such as serious games, playful design and toys. Gamification is a technique for adding elements and mechanics of the game to non-game environments. When we think about the purpose of *"gamification which is not to create a new game-like environment, but to move the elements of the game into the real world to catch similar senses without leaving the truth"* (Arkün-Kocadere & Samur, 2016). Nolan and McBride (2014) also explains gamification in education as a way of playing imaginative games in the classroom without endangering a curriculum's scientific nature. Gamification helps the individuals in an educational setting to learn the potential to develop critical thinking and multi-tasking by educating effective digital natives of the 21st century (Kapp, 2012; Prensky, 2001). Also, Muntean (2011) defines gamification as something that makes the learning experience more enjoyable and boosts the motivation of students to learn and study.

Gamification has received attention in education because of its impact on students learning (Göksün & Gürsoy, 2019). More and more applications and video games for mobile devices have become common and used by school-age children (Kim et al., 2017). The quality of educational games and application has now turn into a challenge that needs to be discussed. The content that the children are using need to be age-appropriate, relevant, fun for primary school students, since their attention span is more limited when they are compared with adults. In table 5 game mechanics and dynamics are explained.

Table 5

Game Elements (Bunchball, 2010)

Game mechanics	**Game dynamics**
Friends	Status
Challenges	Reward
Levels	Achievement
Virtual goods and spaces	Self-expression
Leaderboards	Competition
Gifts and charity	Altruism
Progress bars	Feedback
Quests	Badge
Avatar	Trophy
Real-time notifications	Reputation
Comments	
Points	

Game elements facilitate users a feeling of achievement because they trigger the enthusiasm to self-improvement while encouraging the users to raise their competitive sides (Brigham, 2015). Moreover, game elements in gamification such as awards, points, and avatars are used in order to change the behavior of the player (Bozkurtlar & Samur, 2017). Primary game elements that are utilized in gamification can be listed as the competition towards the targeted aim, points that evaluate the interaction of the user with the system, levels becoming harder with progress and leaderboards where users in the system are compared, and finally digital badges that are designated to define the reached target (Zichermann & Cunningham, 2011).

2.1.7 Literature on the Impact of Electronic Book Reading in the Classroom

In this section, researchers which were linked to the aims and research questions of this study were supplied. Thus, studies connected to electronic book reading, reading motivation, and digital attitudes were explained.

2.1.7.1 Studies Related to the Electronic Book Reading

The literature in primary and middle school and electronic reading effects are limited. For example, Cordova (1993) had made an experiment on fourth and fifth-grade students, the researcher analyzed their motivation and personalization technique that aims to increase the ability to learn math. Participants in the research completed three different levels of personalization in two different groups. When the data were analyzed, they found out that students liked personalization and would like to use in their math classes and get higher scores on math.

Tseng (2007) claimed the results of the study which was to "see whether the reading skills still function well on reading tasks on web pages through computer screens". In the study, there were 54, 4^{th}-grade participants, and the study was conducted in Taiwan. Researchers' aim was to discover EFL students' electronic book reading experiences. In the experiment, students were separated into two groups which were experiment and control groups. One group read printed text whereas the other one read the text from the computer screen. The experimental group performed better at the end of the study and the reason as mentioned as the colorful pictures which were used in the website, background colors of the page, and font size.

Another study was conducted by Hsieh and Dwyer (2009). In the study mentioned there were a hundred and sixty-nine undergraduate students. Students read from the computer screen. The researcher's purpose was to analyze the effectiveness of the screen reading instruction. They found that while reading electronically students had various electronic reading strategies.

Eshet-Alkalai and Geri (2010) studied the dynamic reading behavior of screen and printed materials. 93 students participated in the study and they read, edited, and enhanced soft and hard copies. Study results illustrated that students achieved equally well across both media and that when they were reading from the screen, they read faster than the printed group, their performance was not lower than reading from paper. It indicated that as students got used to reading from the computer screen they became effective for successful reading in both media.

Daniel and Woody (2013) could not reach a statistically significant difference in comprehension scores between electronic reading and printed reading. In the research carried out, they had three hundred participants who read one chapter print and another chapter in electronic formats at home and in a lab. When their comprehension scores were compared, they could not find a statistically significant difference between groups. This research also showed that using the electronic reading from home, students reported that they had high levels of multitasking. The researchers also discovered that printed text allowed increased focus by claiming *"without the distractive nature of ads and pop-up communication"*. They indicated further analysis of how to create more interactive electronic texts was needed.

Halamish and Elbaz (2020) were conducted another study and in that study, their aim was to investigate the impact of the medium used on the comprehension and meta-comprehension of reading for children. In the same study, there were 38 fifth grade students who read texts from screen and paper and answered reading comprehension tests afterward. Results showed that the children's perception of reading the printed text was higher than reading from the computer monitors, while the reading period was equal. Children's judgments on meta-comprehension were indifferent to the medium effect, and their medium preferences were indifferent, both before and after experiencing the task on both platforms. These findings indicated that children, as well as adults, were metacognitively unaware of the adverse effect on their perception of electronic reading, and were likely to make inefficient medium choices for their reading tasks.

In a Norwegian school context, they conducted an experiment to discover the effects of the technological interface on reading comprehension, and there were 72

10th graders from two different primary schools (Mangen, Walgermo, & Brønnick, 2013). The students were separated into two groups. One group read two texts in print and the other group read on a computer screen the same texts as PDF. Additionally, pretests were given in reading comprehension, word interpretation, and vocabulary. The main findings revealed that students who read texts in print scored significantly higher than students who read the texts digitally on the reading comprehension test. The study also stressed that certain features of electronic text could hinder comprehension of reading.

Stole, Mangen, and Schwippert (2019) conducted a study measuring the influence of reading mediums who was ten years old and they analyzed their reading comprehension. The study was carried out in Norway in 2015. Students *(n=1.139)* took two comparable versions of a reading comprehension test with an in-subject style – one on paper, and another online, with a counterbalanced test version and order of the medium. Results indicated that students obtained lower scores on electronic reading on average than on the paper edition. Nearly a third of the students performed better on the paper test than on the screen test, and among high performing girls the negative impact of screen reading was most pronounced. According to the same study, scrolling habits might be prominent factors behind this discrepancy, which shed more light on the reading output of children and how computer technology could influence that results showed that the students on average achieved lower scores on the digital test than on the paper version.

Chen, Li, Lee, and Chu (2018) explored the reading perceptions of eight elementary school students in Hong Kong, and in the study, they used a gamified online reader which had reading database more than 15,000 comprehension questions created from around 500 classic children's books. Researchers found that the platform helped students to feel capable, autonomous, and engaged during their gameplay with their family and friends.

Aydemir, Öztürk, and Horzum (2013) had made a research to understand the influence of reading from computer monitor on the fifth-grade elementary school students. There were 60 students as participants. In the study, six texts were chosen to be used and the participants in the control group were allocated reading printed documents, while others were reading the screen version of the same content. As a result, students who read the informative text from the screen had significantly higher levels of reading comprehension than others. In addition, there was no statistically significant difference between the students who were reading from the computer monitor the narrative texts and the printed material in terms of the level of understanding of the reading.

Stoop, Kreutzer, and Kircz (2013) made a comparison between how well students learned by using course material in paper format and the same material made into seven web pages, with no scrolling being needed. The paper format had a dictionary and questions of analysis at the end of the booklet, while the web pages had integrated a dictionary allowed by a mouse-over feature, and the questions were put next to the text where the answers could be reached. After reading their texts, the participants completed 24 comprehension questions, and the web page group scored higher on 18 of those questions, and significantly better on six (90 percent or more). So, it seems that improving the electronic text rather than merely transforming it into a replica of the printed version facilitated the students scored higher on the comprehension tests. Most students said they favored the web tool or a computer program over books, but they also claimed that the printed text was the best way to use while learning new things.

2. 1. 7. 2 Studies Related to the Personalized Electronic Book Reading

Kucirkova, Messer, and Whitelock (2013) conducted a study to discover the influences of personalized books on children's interaction throughout the shared book reading sessions. In the same study, researchers had seven native English parents, and their children aged twelve to thirty-three months were monitored at home when sharing a personalized book, a comparable book with no personalized content, and a child's favorite book. Statistical analyzes reported that children and parents displayed a significantly higher number of smiles and laugh with personalized books compared to non-personalized books, and showed higher levels of vocal activity with the personalized than the favorite book of the child. Such results were among the first to indicate that during shared book reading, the personalized book features resulted in unique, distinct responses in parents and children.

According to the study which was conducted by Sezer (2015) on personalization of exam/course teaching questions. This study was done to understand the impacts of personalized math problems on students' success. In the study, a mixed study design consisting of the pre- and post-test, control group, and qualitative data were utilized. The research participants were sixth graders from two classes at a

Turkish public middle school. The results of the study indicated that using personalized math problems had a positive impact on the students' academic performance. They indicated that this approach helped to create a motivational and exciting atmosphere that gave rise to interest and enhanced engagement in a way that was similar to real-life situations.

Dutke et al., (2016) worked with 65 11th-grade students in Germany on personalization of eye expression topic in biology lessons and students' willingness to use learning materials. By personalizing the word eye in the text consisting of 915 words related to the expression of the eye; instead of the eye, the expression of "your eye" was placed on the students who read the personalized text, using the pronoun of the second person. Then, a test including information and information about the eye subject was applied to the students. A week later in the experiment students read the text the second time and answered the same questions. Students who read personalized text; compared to the students who read the standard text, it was observed that students who used personalized text performed better, allocated more time to study the text, and were more willing.

Resig (2017) examined the impact of personalization on learning outcomes and motivation of 20 fashion design undergraduate students. Personalized and non-personalized materials for groups online were used in the treatment process. When groups were compared, they could not reach meaningful results from the motivation and learning outcomes perspectives. However, when the posttest scores were compared, the group receiving personalized instruction performed better.

Kayaaslan and Çakır (2017) aimed to examine the implications on the academic achievements of students of the personalization of spelling rules and punctuation marks in Turkish education. Throughout the study, there were 40 participants of the seventh grade from middle school who took a pre- and post-test in the control group. They created a platform to be used in the treatment process, and the treatment process took 5 weeks. While assessing the groups that participated in the study, the difference between the average scores of students who participated in the personalized application group and the students who participated in the non-personalized application group was found to be significant.

Dahan-Golan et al., (2018) conducted a study on fifth and sixth graders and they read texts and performed a reading comprehension test either on paper or on the electronic platform. The findings indicated that when participants were reading on paper they understood texts better than when they were reading on screen, although most children preferred reading on screen. Researchers also investigated whether the medium influenced a particular aspect of the metacognition of children, especially, their level of trust in the answers they gave on the study. Children were asked to give a rate about how self-confident they were that the answer they provided was correct, after answering each test question. The level of confidence was significantly higher on paper than on screen, and when it was compared with the actual performance the results were less reliable on screen than on paper relative to actual test results. This result indicated that the medium influences the metacognition of children over their comprehension of text.

Ozkan (2019) stated that his research is a mixed-method analysis that examined whether there was an impact on the performance of students by using experimental design and qualitative data of personalizing word fraction problems at five grades. The research had been conducted on two subgroups (Personalized/Non-personalized in the classroom) which consisted of 43 students of year five, during the 2018-2019 teaching year. Personalized and non-personalized world difficulties were used with the assist of printed teaching materials during the teaching application in the classroom. Treatment was continued for eight-course hours. This study illustrated that personalized learning was not effective in performance. In mathematical lessons, they found personalized learning; motivational, made them feel special, and more close to real life and entertaining.

When the studies given above were examined, the influence of personalized reading in different classes such as Mathematics, Turkish, and English had been studied. According to the literature, some experiments found positive results while others reached no significant difference.

2. 1. 7. 3 Studies Related to the Gamified Electronic Book Reading

Gamified e-books offer young readers to explore the world of literature. Educators have not lost the power of gamification to encourage engagement. Khan Academy can be given as an example which is a free-to-use learning tool that features lectures on topics from mathematics to music, uses the badge system to demonstrate mastery of subjects. Teachers implement award schemes to display success accomplishments in the classroom. This was taken advantage of by the textbook publishers. For example, the "Connect" program of McGraw Hill publishing provides online activities to accompany textbooks; these activities also feature a score and a leader board, so students can compare the points they receive to the scores of their peers or their own personal best. Using accomplishments in this manner has been demonstrated to boost student success by helping them to accomplish measurable targets before the end of the course (Ames, 1992). Kim et al. (2017) stated that including gamification into reading classes with reading applications developed comprehension outcomes in 2nd graders. The literature on gamified e-book reading was restricted although many gamified e-book reading platforms in school context were not named as a gamified tool.

Turkmen and Soybas (2019) examined the influence of gamified environments in Mathematics class. Mixed research methods were applied in the study. The purpose of the study was to discover 5^{th}-grade students' achievement and attitude toward Mathematics class. Findings revealed that there was no statistically significant difference between the control group and the experimental group in terms of their achievements and attitudes toward Mathematics class.

Bozkurtlar and Samur (2017) investigated the influences of gamification that was applied in classroom management tools. Students' thoughts about the gamified system used in the study and the reward, points, and leaderboard were investigated. Data was gathered through interviews and inventory with 69 questions. Findings showed that students had negative attitudes toward getting minus points and taking lower positions in leaderboard ranking.

Lu (2008) also analyzed the effectiveness of SMSs on students' vocabulary learning by separating the students into two groups, giving one group printed material for vocabulary and the other group SMS vocabulary lessons. Results of the post-test indicated that students getting simple vocabulary lessons through SMSs gained higher scores than the ones who got detailed printed vocabulary lessons. Besides, student interview results illustrated that learners had positive views towards learning with the aid of SMS technology.

Hamari (2017) investigated the influence of badges and peer-to-peer trading program and found positive results. In the study, the researcher tracked the participants behaviors. It was a two-year field study and the study compared two groups, control *(n = 140)* and gamification *(n = 1579)*. The researcher discovered that introducing badges for special behaviors and achievements contributed greatly to an increased number of posts, trades, and comments with the community. Introducing a game mechanic, badges, had a significant effect on engaging users to behave in ways they didn't previously.

Using gamified environments has been considered to be one of the most prominent instructional methods to motivate students intrinsically and extrinsically and increase their engagement in the learning processes (Millis, Forsyth, Wallace, Graesser, & Timmins, 2017; Shaffer, 2007). In some other studies, gamification is considered to be one of the most engaging, and effective method for EFL (Lui, 2014; Perry, 2015). Wu and Huang, (2017) explained the benefits of gamified learning environments by claiming various elements that were named in the literature as dynamics and mechanics. When dynamics and mechanics were included in gamified environments, this condition might increase students' motivation and interest to learn English as a Foreign Language (Wu & Huang, 2017). Some other studies also stated that gamified learning environments could deduce students' anxiety and fear of explaining themselves in the foreign language in front of others (Arnold, 2014). The reviewed literature illustrated that gamification in particular had been used for various reasons in educational settings with positive learning outcomes.

2.2 Reading Motivation

Motivation is another is issue, teachers tackle in the 21st century. Moody et al., (2010) indicate that interactive features raise the interest and excitement of children in reading and promoting the participation of children in reading books. It is possible to state that more and more children started to read online as it has a fun and interactive reading environment. Jones and Brown, (2011), also show that engagement in reading refers to the level of interest and the amount of time which is spent by children while reading books is associated with the growth of literacy skills. In addition, another study also shows that reading engagement is correlated with reading motivation and reading interventions can predict the future reading achievement and progress (Justice, Chow, Capellini, Flanigan, & Colton, 2003). It can be concluded that if students are supported to read in the early years by their families and teachers, as they are more motivated in those years, we can achieve to increase their future success.

When people have internal motivation, they are likely to take an activity for the enjoyment it supplies, the learning it provides, or the feeling of achievement it creates (Lepper, 1988). The same author also mentions that when individuals are motivated extrinsically to reach some reward or avoid punishment, they feel motivated too. Muntean (2011) explains the motivation in gamified environments in L2 students. Facilitating external rewards like levels, leaderboards, stars, competition points, social interaction, and badges to increase engagement whereas mastery, autonomy, and sense of belonging are supplied through intrinsic motivation. Kucirkova (2017) mentions that via a personalized reading environment, students' internal motivation is increased as students have the power of their agency in the stories.

All in all, using both gamification and personalization in the EFL learning environment has brought the use of many tools to enhance the language learning process and motivate the students. It is vital to keep in mind that in a gamified classroom setting/personalized classroom setting the tool will serve a purpose and it shouldn't substitute the target goal of the unit or module. This is also essential in EFL learning environments.

2.3 Reading Time

Researchers examined the effect of text related activities and reading time. Reading time for interactive e-book reading was longer than for perspective-printed text in many studies as the literature claimed earlier interactive features of the electronic books create cognitive load so they need more time to comprehend the text (Sweller, Kalguga, & Ayres, 2012). Later, Ziming Lui (2005) claimed that people have a tendency to read e-books faster than printed books. Lincoln (2015) explains this issue by mentioning how people see printed and electronic books. The same author also claims that when people read online, they have a tendency to scan and skim the text instead of doing the intensive reading. Mangen (2014) also explains this process by mentioning the process as non-linear, the same issue by claiming "giving us a chance to really know and feel comfortable in our textual environment (linear reading) as opposed to just wandering about (non-linear reading)".

Most of the children and adults who have fluency problems receive low comprehension scores from reading (Willis, 2008). There is a correlation between the rapid naming area of brain activation and the inferior frontal cortex (one of the brain's most active reading and memory centers) is suggestive for strategies that build word recognition skills through practice in oral naming (Mishra et al., 2004). Although naming requires phonological processing, evidence suggests that reading speed is only modestly correlarated with performance on reading comprehension (Wagner, Togesen, & Rahhotte, 1994). The greatest correlation is between reading speed improvement and increased practice with reading tasks. In using this as a fluency-building strategy, students can practice speed reading and decrease their reading time.

To compare reading effort on three different media: a paper page, an e-reader (e-ink), and a tablet computer another study was conducted (Kretzschmar et al., 2013). In the research, the researchers analyzed eye movement, brain activity, and reading speed. The student who participated in the study further answered some questions in order to identify their reading comprehension. All participants said they favored reading on paper, and although the study showed no evidence for the digital media becoming more effortful to read. On the other side, the older participants who read on the tablet computer were not only faster but also show less effort because of the better contrast provided by the backlighting, and because of this being ideal for older eyes. In the digital format, the reader jumps from one paragraph to another (Baron, 2015). It is possible to state that reading skill and definition of it is evolving with the assist of technology and time is an important concern for educator when they are including something new for their curriculum.

2.4 Digital Attitude

Research consistently highlights a worsening of students' reading attitudes as they move through school (Ley, Schaer, & Dismukes, 1994; McKenna et al., 1995). In fact, many students self-identify as nonreaders or resistant readers (Lenters, 2006; Reeves, 2004). It is possible to state that when students label themselves as a non-reader, they also show a digital attitude against reading.

	Print	Digital
Academic	•Writing responses to a storybook in a notebook •Reading a print coursebook •Using print reference materials •Making note cards from print books •Reviewing class notes taken by hand	•Reading to do web-based research •Conducting a topical image search •Supporting argumentative text with video •Following links related to a topic •Creating a PowerPoint to summarize a topic
Recreational	•Reading a self-selected storybook •Reading a magazine or comic book •Reading a letter from a friend •Revisiting entries in a diary •Reading the morning paper	•Reading social media posts •Reading a storybook online •Reading a text or message from a friend •Visiting a favorite blog •Reading the twitter hashtags

Figure 6 ***Reading Activities Related to Purpose and Environment***

It is necessary to contemplate students' digital attitudes for various reasons. As an educator if our goal is to nurture a lifelong habit of reading (Cramer & Castle, 1994), it follows that students' attitudes need to be assessed and how best to foster positive reading attitudes need to be considered. To achieve this, we might tailor the instruction to include the activities that associate with areas students report liking; if a student claims a positive attitude toward academic reading in digital environments, but reports negative attitudes toward recreational reading and toward print, as an educator what kind of activities need to be integrated such as Internet projects, to take advantage of our students enthusiasm. These days, students' regularly read in various forms which alter from traditional print to a blog post. On the other hand, teachers might have contrastive attitudes on the basis of medium. They might like to read novels in print form but when they read for academic purposes they might prefer the digital form. This condition might have an influence on their class use of technology.

Some authors claim that reading attitudes depend on the nature or goal of the activity (Ivey & Broaddus, 2001; McKenna et al., 1995), making a distinction between leisure (or recreational) reading when it is the reader who decides when and what to read, and academic reading which, for young people, often means reading imposed by a teacher in a school setting (Conradi et al., 2013; McKenna et al., 2012). Most studies in this area, especially cross-sectional ones, have reported a gradual increase in negative attitudes toward reading across elementary school. In a major study conducted in the United States, McKenna et al. (1995) administered the Elementary Reading Attitude Survey (ERAS; McKenna & Kear, 1990) to a stratified sample of 18,185 first to sixth graders drawn from 229 schools in 38 states. This cross-sectional study revealed an overall negative trend in attitudes toward reading across these grades. Whereas pupils starting school had generally positive attitudes, by the end of elementary school, these had been replaced by indifference and even negativity, especially with regard to academic reading. The survey was undertaken by Hogsten and Peregoy (1999) among second and sixth graders, this time using the Estes Attitude Scale for Reading, mainly corroborated McKenna et al. (1995)'s results, insofar as attitudes toward the reading of whatever kind were not particularly positive at Grade 2, but were clearly negative in Grade 6. When Lazarus and Callahan (2000) replicated McKenna et al. (1995)'s survey, this time among pupils with learning disabilities in special education resource rooms, they found that attitudes toward reading showed a comparable trend between Grades 1 and 5.

Surveys conducted among older children, such as the survey undertaken by McKenna et al. (2012), have reported similar differences in students' positive attitudes toward reading across the middle school. In this cross-sectional study, McKenna et al. (2012) asked 4,491 American middle-school pupils in Grades 6 to 8 to complete an adapted version of the ERAS (McKenna & Kear, 1990). The authors observed increasingly negative attitudes toward reading, with attitudes toward academic reading appearing to be more stable across grades–but more negative–than those toward leisure reading.

On the other hand, students engage with various types of readings outside school, such as reading magazines or comic books, both for fun and to gain information (Hughes-Hassell, & Rodge, 2007). These kinds of out of school readings differ in many ways from those that students come across in school, and yet teachers can successfully incorporate important qualities of the former into their instruction (McCarthey, 2000). Some students might read a novel for recreation, but others read the same book because it was assigned by a teacher. Moreover, an e-mail from a colleague can be seen as social, whereas the same colleague's next e-mail may include a project. When the task has become obligatory, it can be seen as torture. In this study, our aim was to see the effects of e-book reading on digital attitude.

2.5 Summary of the Literature Review

The literature review in this chapter analyzed the influence and correlation of printed book reading and electronic books reading in different forms, such as reading motivation, reading time, digital attitude, and reading comprehension. There is a changing paradigm from printed reading classrooms to electronic reading classrooms which has illustrated the importance of encouraging learner-centered lessons through implementing field trends and foreseeing students' needs and interests. Language learning is also an ongoing process where students and teachers work together. Depending on that view, teachers need to take advantage of classroom interactions and the reactions and input of the students. Recent meta-analyses (Clinton et al., 2019; Delgado et al., 2018; Kong et al., 2018) clearly illustrates that reading comprehension on paper is better than on-screen among teenagers but students' e-book reading comprehension is not explored and it is still a mystery in the literature. Recent work has focused on technology-enhanced learning environments, like gamified and personalized environments, and their effect on learning, despite the shift in language teaching.

On the other hand, a very limited number of studies were conducted on reading comprehension in EFL classes. In fact, the importance of electronic reading in the latest literature has not been adequately underlined. To fill this gap, the present study was carried on discovering the effects of electronic reading on the reading comprehension levels of sixth-grade students through different forms. In addition, the influence of personalized /gamified reading environments was explored.

Chapter 3

3. METHODOLOGY

In this chapter, the methodology of the study was explained in detail. The purpose of this study was to analyze the effects of e-book reading on 6th grade, state school students. This study also tried to find out teachers' and students' thoughts about introducing electronic book reading in EFL classes. In this chapter, data collection procedures, types of sampling, implementation, pilot study, main study, pre-test, treatment, post-test, data analysis procedures, quantitative, qualitative analysis, reliability, and validity were analyzed.

3.1 Research Design

In this study, both quantitative and qualitative data collection instruments were used. Creswell (2012) stated that the mixed-method research design was carried out in order to collect qualitative and quantitative data within the same research and to use one to support the other. Mixed-method studies involve at least one quantitative method and a qualitative method, but studies that these methods were not directly related to any research paradigm were called mixed-method models (Creswell & Clark, 2011). According to Tashakkori and Creswell (2007), mixed-method research is defined as research where the researcher collects and analyzes data, includes findings, and makes inferences using a quantitative and qualitative approach or methods in a single study or research program. The mixed-method research design provides a meaningful pattern between the findings by blending the qualitative and quantitative data in this context in table 6. Mixed-method researches have advantages over using only qualitative or only quantitative methods. Due to the limited number of samples in qualitative research, weaknesses such as limited generalization and personal bias can be compensated with the support of quantitative research, while weaknesses such as the researchers in quantitative research not making their voices heard directly can be compensated by qualitative research. Therefore, mixed-method research reveals more evidence when investigating a problem than quantitative or qualitative approaches do alone. Also, mixed-method researches are practical in that the researcher can use all available methods to solve a research problem (Creswell & Plano-Clark, 2011).

Table 6

Major Mixed Methods Design Types based on Cresswell (2012)

Design type	**Variants**	**Timing**	**Weighting**	**Mixing**	**Notation**
Triangulation	Convergence Data transformation Validating quantitative data Multilevel	Concurrent (quantitative and qualitative at the same time)	Usually equal	Merge the data during the interpretation or analysis	QUAN + QUAL
Embedded	Embedded experimental Embedded correlational	Concurrent or sequential	Unequal	Embed on type of data within a larger design using the other type of data	QUAN (QUAL) or QUAL (QUAN)
Explanatory	Follow-up explanations Participant selection	Sequential: Quantitative followed by qualitative	Usually Quantitative	Connect the data between the two phases	QUAN → qual
Exploratory	Instrumental development Taxonomy development	Sequential: Qualitative followed by quantitative	Usually qualitative	Connect the data between the two phases	QUAL→ quan

Therefore, mixed-method research was preferred in this research and this is explained in figure 6.

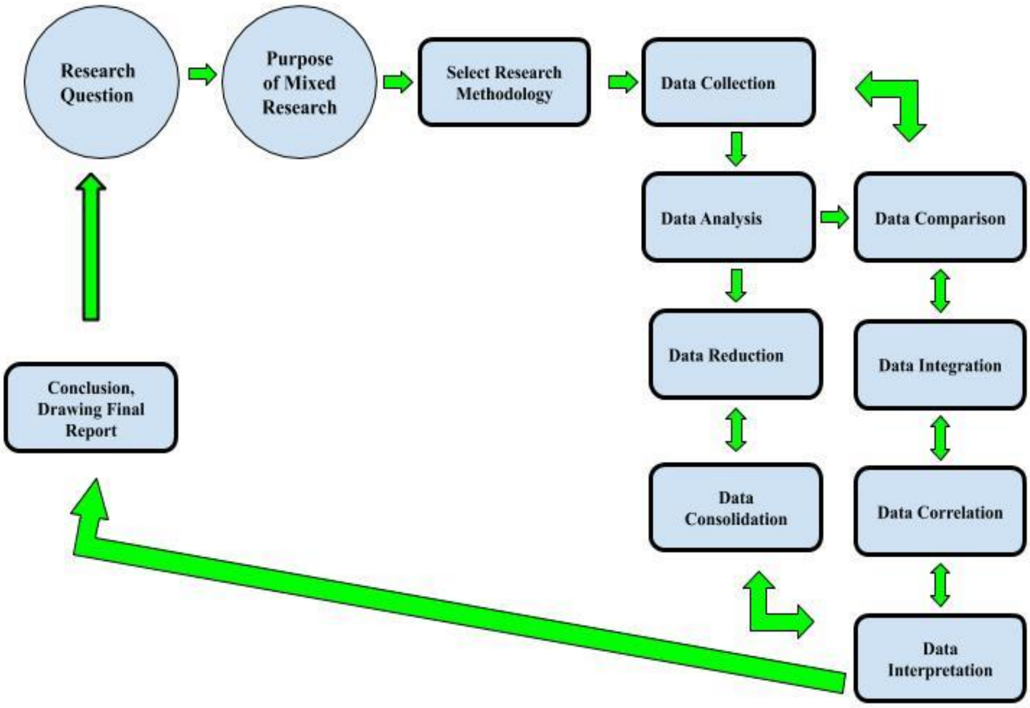


Figure 7 ***Mixed Method Research Process (Johnson and Onwugbuzie, 2004)***

The embedded design allows qualitative and quantitative data to be collected simultaneously or sequentially, and that one supports the other. In the embedded design, the secondary pattern or tool functions to support the primary pattern or tool (Creswell, 2012). Quantitative data of the study were obtained through the pre-test, post-test from control and experimental groups, and qualitative data were obtained through action research within the scope of the embedded design.

This approach is also known a mixed embedded experimental method. The mixed embedded design has the main method and a supporting method. The supporting pattern can be qualitative when the main pattern is a quantitative pattern, and the supportive pattern can be quantitative when the main pattern is qualitative (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2012). A qualitative stage such as case study or a quantitative stage such as scanning a master design to a qualitative method such as action research can be added to the study in which the main pattern is an experimental design. The supporting stage in the interlocking mixed pattern is added to improve the overall pattern. Although a single data set is not enough in this design, different data sets are required for each different type of question (Cresswell, 2008).

To summarize, the embedded design of the study was explained as the quantitative data collection and analysis followed by the collection and analysis of qualitative data and the objective was to use qualitative data findings to support the description and interpretation of quantitative research findings. For this analysis, mixed methods research design approach was used as a technique to address the specified research questions.

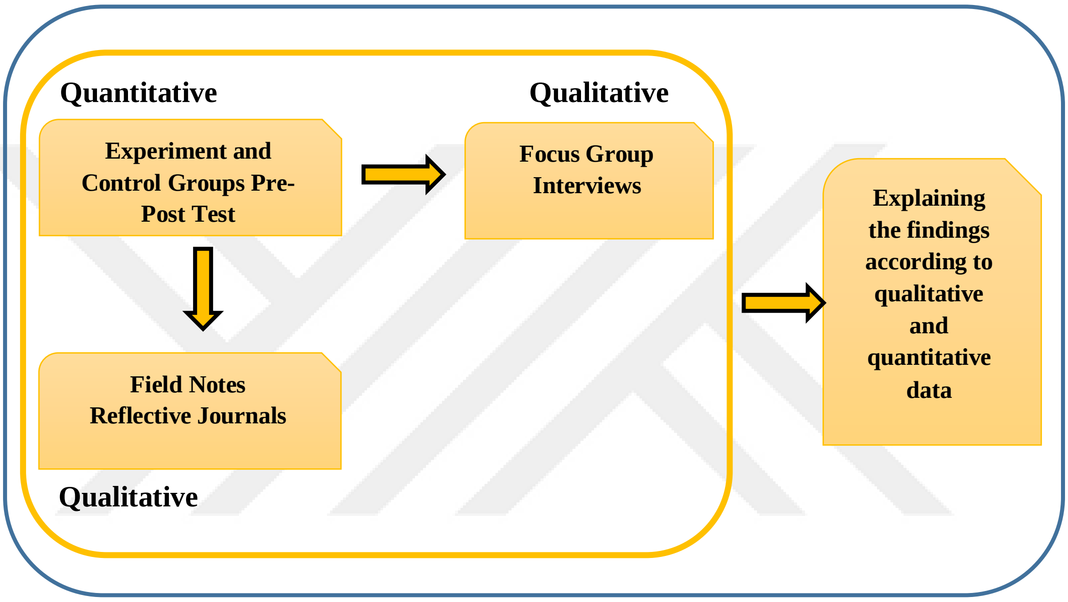


Figure 8 ***Mixed Embedded Design Implementation Plan***

Qualitative data should be included when seeking answers to the secondary research question in the quantitative study, which was the main pattern, in mixed embedded experimental design. In the experimental example, the researcher could use qualitative data for reasons such as improving the data collection procedure, testing the intervention process, and explaining the reactions of participants to the experiment.

Research on mixed methods was chosen to collect more accurate information by using both quantitative and qualitative data collection techniques to provide more relevant data on the subject under study. In the quantitative dimension of the research, experimental design with pretest-posttest control and experiment groups were used. The embedded research design was the initial step for the qualitative data collection and analysis after the quantitative data collection and analysis process and the aim was to examine a phenomenon. The Reading Motivation scale and Digital Attitude Scale were applied as a pre-test and post-test to the students of the experimental and control groups in the quantitative dimension. Experimental researches are studies where the effect of the dependent variable is investigated by manipulating one variable and controlling other variables (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2012).

In embedded mixed design, when researchers were looking for an answer to the secondary research question in the quantitative study, which is the main pattern, qualitative data. In the experimental example, the researcher could use qualitative data for reasons such as improving the data collection procedure, testing the intervention process, and explaining the reactions of participants to the experiment.

Quasi-experimental was a design in which ready-made groups were used instead of a random selection of the participants' groups were matched. In this study matching only design, is used and in this design random sampling is not used (Büyüköztürk et al., 2012). In the same source, it is also claimed that four of the ready-made groups in the design are tried to be matched over certain variables and groups are randomly assigned to different treatments. Matched groups were assigned randomly to matching groups. However, matching did not guarantee that the groups included in the study were equivalent. This was a serious limitation, but it was a serious alternative pattern when random sampling could not be made. Details of the matching only design could be seen in table 7.

Table 7

Matching only design

Group		Pre-test	Treatment	Post-test
Gamified e-book reading group (Experiment)	Matching	O1	X1	05
Personalized e-book reading group (Experiment)	Matching	02	X2	06
PDF e-book reading group (Experiment)	Matching	03	X3	07
Printed book reading group (control)	Matching	04		08

Applied to the sixth-grade students of English Course supported activities developed in the quantitative part of the second part of the research, whether these activities have an effect on students' attitudes towards reading motivation, digital attitude.

A visual representation of the research design was clearly shown in figure 9:

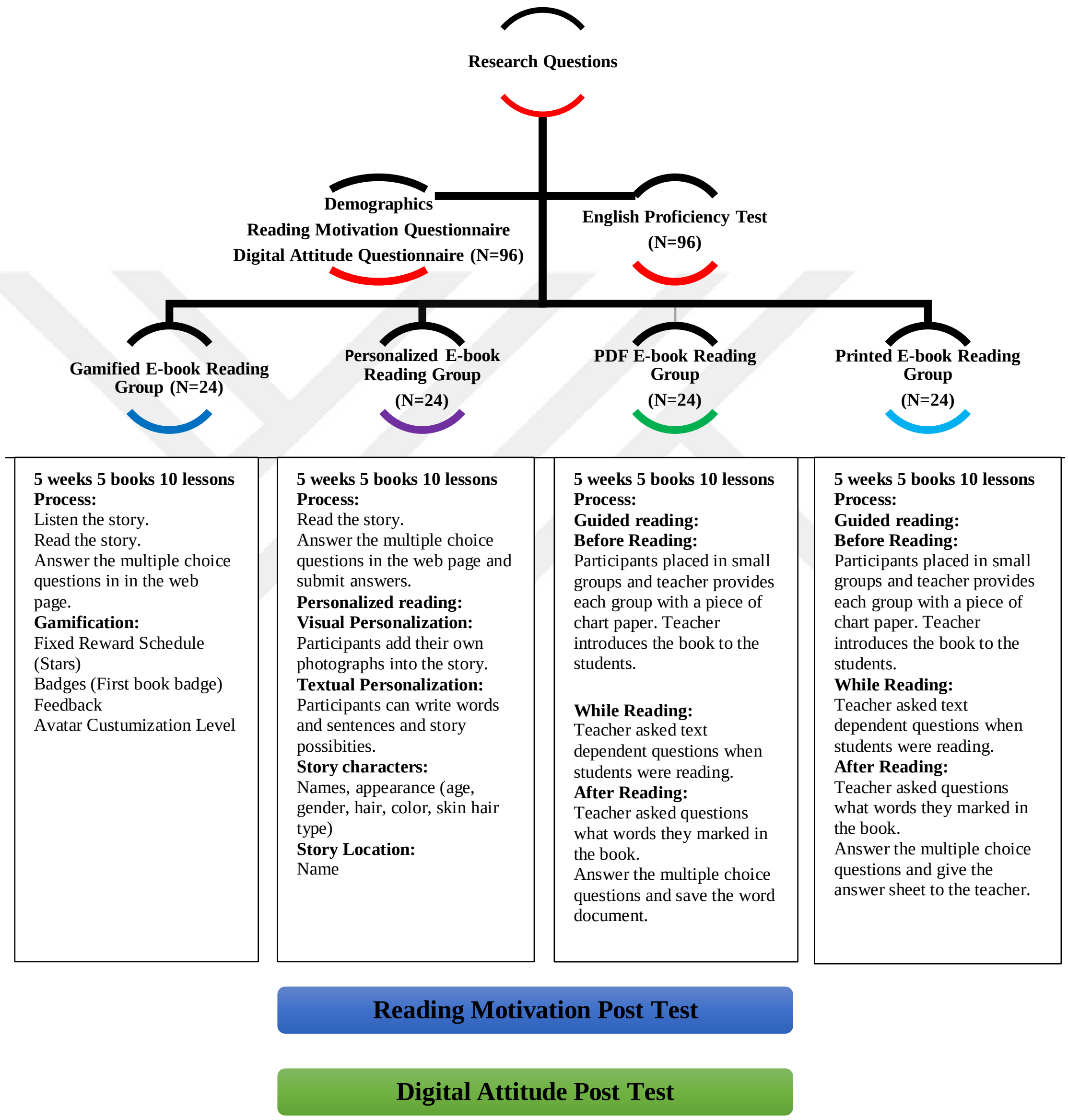


Figure 9 ***Research Procedure***

For this purpose, a quasi-experimental design with pre-test and post-control group, which was one of the quantitative research methods, was used in the experimental part of the research. Random sampling was not used in this design. The groups that were present were matched for certain features and were randomly assigned to the groups. However, it still did not guarantee that these groups were equivalent. Although this was a serious limitation, it could be used as a good alternative in cases where random assignment could not be made (Büyüköztürk et al., 2012).

The study was conducted in the 2019-2020 term and lasted the Fall term. All of the participants first took the English Proficiency test. As a proficiency test Cambridge Movers Sample test was used. In order to understand the level was appropriate for the participants, the sample test was piloted in another class of 6th graders, which had 56 students. The data obtained from the pilot study were analyzed descriptively via SPSS 22 and the alpha value of the related Cronbach was shown to be *.813*, which indicates that the test was statistically sufficiently accurate. The test took *65* minutes and the results of the text were graded by the researcher and a teacher from the school, who had been teaching in that school for more than five years and also doing a PhD on the ELT department. As we could not find any difference between the students and we understood the students' English proficiency level. We started to design four types of books in accordance with the study. Ten-hour personalized reading material and gamified e-book reading material were designed to achieve the aims of the course objectives. The personalized e-books were designed by the researcher and external advisor. Gamified e-books were chosen from the library of Raz Kids according to the English levels of the participants.

The data collection process started at the beginning of the first term. At the beginning of the 2019-2020 academic year, the sixth-grade students were asked to complete a proficiency test and divided into four groups: personalized e-book reading, gamified e-book reading, printed book reading, and PDF e-book reading group. The aim of the questionnaire was to understand the students reading comprehension levels and accept only similar reading comprehension levels as study participants.

At the beginning of the 2019-2020 academic year, the researcher asked the participant English language teachers to observe the sessions and keep reflective journals. The aim of keeping the journal was to have information on the reflection of the teachers.

The second phase of the study took five weeks and each week students had 90 minutes reading sessions. In that session, each experimental group completed different reading programs: personalized electronic book, gamified electronic book reading, and PDF electronic book reading materials. The reading programs applied were conducted by the researcher in the computer lab. The treatment process lasted two months six visits and each visit 90 minutes, 2 sessions and at the end of the six-week process, the participants were asked to complete a motivation questionnaire, to investigate whether there was any difference between the learning experience of the EG and CG. In addition to the questionnaire, both groups answered post-test questions. Across group comparison was applied to assess whether there was any statistically significant difference between the reading comprehension of the EG and CG, and within-group comparison was made to find out whether there was any statistically significant difference between the test performance scores of each group in itself. Both groups wrote a collaborative journal expressing their perceptions of their learning experiences. Furthermore, the course teacher kept a reflective journal based on his/her reflections on the learning of both groups and the session process. Lastly, the researcher leads four groups and reflected on the implementation of the personalized e-book reading, and whether there were any differences between the EG and CG students with regard to their learning experiences by completing the observation protocol adapted from the study of Mehring (2014).

In this respect, a mixed embedded design method was applied in this study to perform a comprehensive investigation to address the research questions. The researcher, mixing quantitative and qualitative design, sought to reimburse the shortcomings and missed points in both designs, and has an in-depth analysis of the project. The quasi-experimental design with the pre-test-posttest control group was used in the quantitative stage of the embedded mixed research design. At this stage, the data were collected by comprehension tests, reading motivation scale, and digital attitude scale. Descriptive statistics and Wilcoxon Signed Rank Test, Kruskal Wallis Test, Mann Whitney U test was used in the analysis of quantitative data.

The design of our study can be analyzed in figure 10.

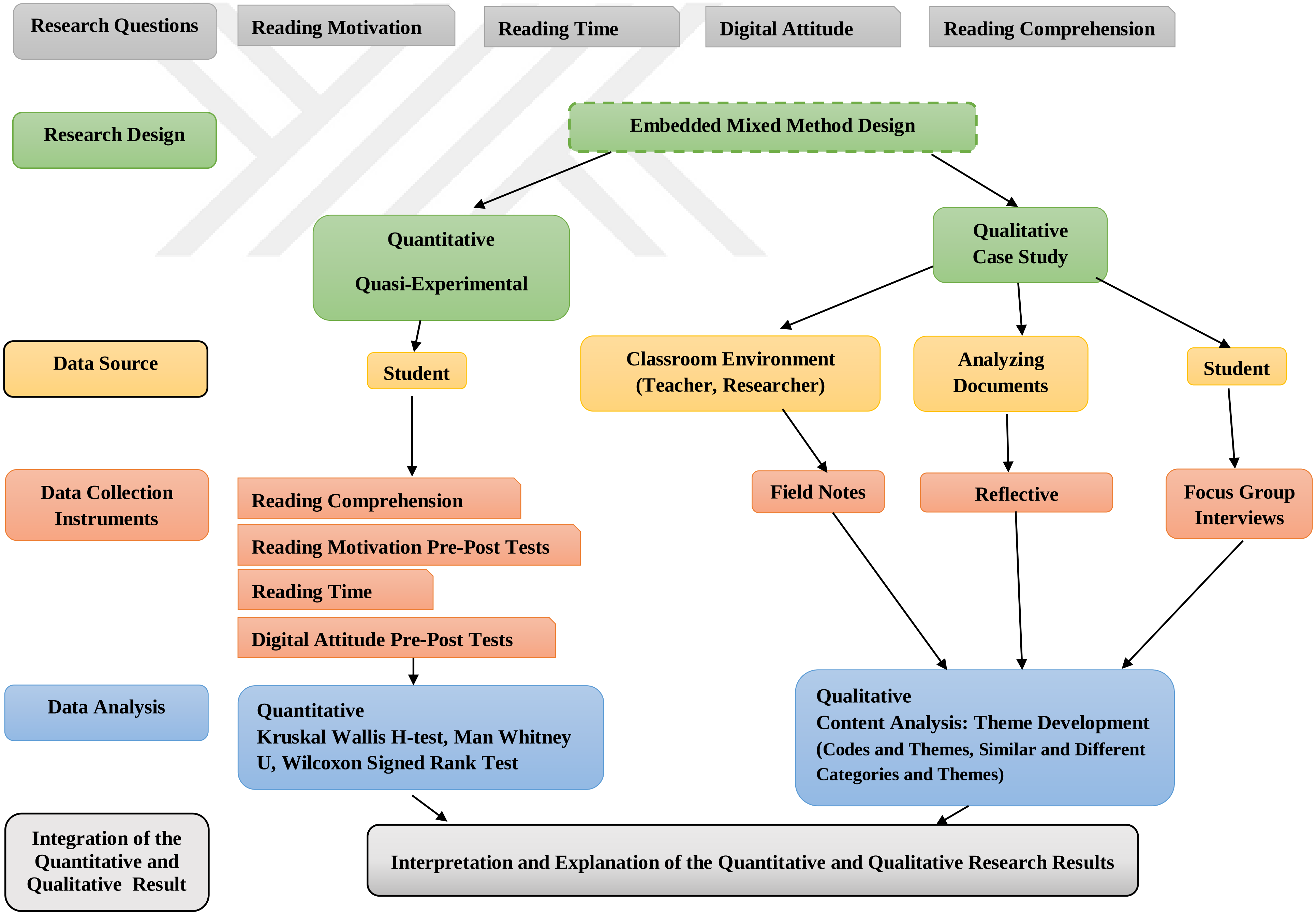

Research Questions
Reading Motivation
Reading Time
Digital Attitude
Reading Comprehension
Research Design
Embedded Mixed Method Design
Quantitative
Quasi-Experimental
Qualitative
Case Study
Data Source
Student
Classroom Environment
(Teacher, Researcher)
Analyzing
Documents
Student
Data Collection
Instruments
Reading Comprehension
Reading Motivation Pre-Post Tests
Reading Time
Digital Attitude Pre-Post Tests
Field Notes
Reflective
Focus Group
Interviews
Data Analysis
Quantitative
Kruskal Wallis H-test, Man Whitney
U, Wilcoxon Signed Rank Test
Qualitative
Content Analysis: Theme Development
(Codes and Themes, Similar and Different
Categories and Themes)
Integration of the
Quantitative and
Qualitative Result
Interpretation and Explanation of the Quantitative and Qualitative Research Results

Figure 10 ***Mixed Embedded Methods Design Model. (Adopted and revised from Ivankova, Creswell, and Stick, 2006).***

Content analysis was used in the analysis of qualitative data. In the qualitative stage, the case study model was used, and focus group interviews, checklists, field notes, and reflective journals were used as data collection tools. There were some features to be considered in the case study method. Mcmillan (2000) defined a case study as a method in which one or more events, environments, programs or social groups were thoroughly examined. A case study was used to identify and see the details that make up an event, to develop possible explanations for an event, to evaluate an event (Gall, Borg, & Gall, 1996). A case study was not only an in-depth analysis of a particular event or case over a period of time and involves observing and analyzing a situation but also does not provide a solution to a problem (Gall, Borg, & Gall, 1996). In them, multiple sources of evidence and data could be collected over a period of time. The environment in case studies was real life and it involved holistic investigation. To obtain a complete a picture of the participant as possible, case study researchers could employ a variety of methods. Some common methods included interviews, protocol analyses, field studies, and participant-observations. Emig (1971) chose to use several methods of data collection. Her sources included conversations with the students, protocol analysis, discrete observations of actual composition, writing samples from each student, and school records (Lauer & Asher 1988). Berkenkotter, Huckin, and Ackerman (1988) collected data by observing classrooms, conducting faculty and student interviews, collecting self-reports from the subject, and by looking at the subject's written work. Flower and Hayes (1984) explored the ways in which writers used different forms of knowledge to create space, the authors used only protocol analysis to gather data. In this study, field notes of the researcher, reflective journals, and focus group interviews were conducted to collect data for the case study. In the case study, factors related to one or more situations were investigated with a holistic approach and how they affected the situation and how they were affected by the situation was analyzed in-depth (Yıldırım & Şimşek, 2016, as cited in Buyukozturk et al. 2012).

According to Datta (1990), common case study types were explanatory, exploratory, prescriptive, descriptive, and confirmatory. There was no minimum participant size in case studies (Stake, 2005; Hen et al., 2009). The type of case study conducted in this study was a descriptive case study because it was made to provide information. In the study, a holistic multiple case study pattern was used. In a holistic multiple case study design as a whole, there was more than one situation that could be perceived. In our case study, there were four different situations and participants reflection for each situation was examined deeply. Each case first within itself evaluated as a whole and then compared with each other (Yıldırım & Şimşek, 2016, as cited in Buyukozturk et al., 2012).

3.2 Setting and Participants

In the planning stage, experimental and control groups reading contents were developed by field experts, and official permissions were taken from Globed Turkey. As in this study, Raz-Plus e-books were adopted, and used by taking official permission from the headquarters.

An application to Ministry of Education in Istanbul was made by giving some criteria such as having a computer laboratory, internet access, headsets and student number and working number of computers should be equal, and took permission about the study conducted. After we found a school that had proper internet, computer lab, and headsets, the researcher visited the school and took permission from the director of the school and teachers. We examined the school and we decided the pilot school as they had internet access, headsets, not using any supportive reading or supplementary program. All groups needed to take the reading program on the same day as the researcher had one official day to conduct the experiment in each week. Finally, a pilot study was applied in a state school to sixth-year secondary school students *(N= 100)* in the 2019 – 2020 academic year, fall term. Then, the study was conducted with sixth-year secondary school students *(N=96)* of the English classroom, in a state secondary school in Tuzla, in the 2019-2020 academic year. Additionally, the teachers of the course *(N=4)* was also a part of the treatment and data collection process.

3.2.1 Demographic Information about Participant Students

This analysis was carried at Turkey's State High School, somewhere in Istanbul. The EFL program to which the school's 6th graders – that was, the participants in the current study – was presented as an integrated four-skill curriculum of 2 lesson hours per week. A state secondary school which had at least four 6th graders class and 24 students in a classroom were found, in which this study was carried out and in each class, two teachers stayed: one Turkish EFL teacher and one researcher who was experienced EFL teacher. The experiment was applied as an in-class activity and 90 minutes (two sessions) was allocated for each book every week. The ages of the students were varied between 11- 12.

The EFL program in which the school's 6th graders were the participants of the recent research and they were presented to an integrated four-skill curriculum with 3 lesson hours as well as a speaking class 2 lesson hours per week. There were 4 classes of 6th graders with 24 students at the school in which this study was carried out and each class had got two teachers: one Turkish EFL teacher for skills course and one native English teacher for Speaking lessons.

The assessment primarily used to assess the progress of the students was summative assessment, even though the teachers themselves may sometimes apply formative evaluations. As for the study participants, the participants were 6 graders who study in Istanbul, Turkey, a state secondary school. At the time of the study, their common level of English proficiency was A1 +, despite each participant was different when their learning profiles were examined, the proficiency they have was similar as in the previous year they finished intense English support. In the previous year, they had 18 hours of English in a week. In table 8, detailed demographic background information could be found.

Table 8

Participants' Background Information

		Personalized e-book reading (n=24)		PDF e-book reading (n=24)		Gamified e-book reading (n=24)		Printed book reading (n=24)		P
		n	**%**	**N**	**%**	**n**	**%**	**n**	**%**	
Gender	Female	13	%54.2	14	%58.3	12	%50.0	14	%58.3	X^2=0.46
	Male	11	%45.8	10	%41.7	12	%50.0	10	%41.7	p=0.92
Mother Education Background	Primary	7	%29.2	6	%25.0	3	%12.5	4	%16.7	X^2=13.52
	Secondary	2	%8.3	2	%8.3	4	%16.7	3	%12.5	p=0.33
	High School	8	%33.3	4	%16.7	7	%29.2	8	%33.3	
	University	7	%29.2	8	%33.3	9	%37.5	9	%37.5	
	Masters Degree	0	%0.0	4	%16.7	1	%4.2	0	%0.0	
Father Education Background	Primary	3	%12.5	1	%4.2	0	%0.0	0	%0.0	X^2=30.50
	Secondary	4	%16.7	5	%20.8	4	%16.7	1	%4.2	p=0.00
	High School	6	%25.0	6	%25.0	5	%20.8	8	%33.3	
	University	10	%41.7	3	%12.5	13	%54.2	14	%58.3	
	Masters Degree	1	%4.2	9	%37.5	2	%8.3	1	%4.2	
Having a bookcase in the house	Yes	14	%58.3	18	%75.0	24	%100.0	21	%87.5	X^2=14.37
	No	10	%41.7	6	%25.0	0	%0.0	3	%12.5	p=0.00
Number of books in the bookcase	1	1	%7.1	6	%33.3	2	%8.3	4	%19.0	X^2=14.13
	2	2	%14.3	2	%11.1	4	%16.7	6	%28.6	p=0.29
	3	6	%42.9	4	%22.2	7	%29.2	2	%9.5	
	4	4	%28.6	6	%33.3	11	%45.8	8	%38.1	
	5	1	%7.1	0	%0.0	0	%0.0	1	%4.8	
Preschool Education	Yes	13	%54.2	12	%50.0	13	%54.2	14	%58.3	X^2=0.33
	No	11	%45.8	12	%50.0	11	%45.8	10	%41.7	p=0.95

*p<,05; S.D: Standart Deviation

There was no statistically significant relationship between gender and group *(X^2 = 0.46; P = 0.92 > 0.05)*. There was no statistically significant relationship between the mother's education level and the group *(X^2 = 13.52; P = 0.33 > 0.05)*.

There was a statistically significant relationship between the father's education level and the group *(X^2 = 30.50; P = 0.00 < 0.05)*. The father education level in the

PDF e-book reading group was higher than the gamified e-book reading group. In the printed book reading group, the ratio of the father education level to middle school was higher than the personalized e-book reading group. In the printed book reading group, the education level of the father was higher than the gamified e-book reading group. In the e-book reading group, the education level of the father was higher than the PDF e-book reading group. In the Gamified e-book reading group, the level of the father education level of graduates was higher than the PDF e-book reading group.

A significant relationship was found between the availability of a library at home and the group *(X^2 = 14.37; P = 0.00 < 0.05)*. The rate of having a book at home in the printed book reading group was higher than the gamified book reading group. The rate of having a home library at the personalized e-book reading group was higher than that of the gamified e-book reading group.

No significant relationship was found between the number of books in the library and the group *(X^2 = 14.13; P = 0.29 > 0.05)*. There was no statistically significant relationship between the preschool education status and the group *(X^2 = 0.33; P = 0.95 > 0.05)*.

Before the experiment all the students took a pretest and the content they were going to see was created according to that pretest. In the pre-test students took the Cambridge movers exam, results of the exam was assessed by the two different raters.

Table 9

Descriptive Statistics of Participants' English Proficiency Results

	Gamified E-book Reading Group (n=24)	Personalized E-book Reading Group (n=24)	PDF E-Book Reading Group (n=24)	Printed Book Reading Group (n=24)
Listening Scores	10.95	10.37	10.91	10.50
Reading and Writing Scores	15.5	15.37	15.58	15.87
Speaking Scores	15.16	15.29	15.37	15.25
Total Scores	41.66	41.04	41.87	41.83

*p<,05

There was no statistically significant relationship between listening scores and group *($X2 = 0.46$; $P = 0.92 > 0.05$)*. There was no statistically significant relationship between reading and writing scores and group *($X2 = 0.46$; $P = 0.92 > 0.05$)*. There was no significant relationship between speaking scores and group *($X2 = 0.46$; $P = 0.92 > 0.05$)*. There was no significant relationship between total English proficiency scores and group *($X2 = 0.46$; $P = 0.92 > 0.05$)*.

It is possible to use various normality tests to determine whether the data are suitable for normal distribution. The most well-known among these tests are Chi-Square, Kolmogorov-Smirnov, Lilliefors, and Shapiro - Wilk normality tests. In this study, Kolmogorov-Smirnov was used to analyze the normality of the data. The normalization test for English Proficiency scores of students' showed that the set of scores forms a normal distribution *(Median = 22.0; Variance = 23.51; standard deviation = 4.85; skewness = -.09; kurtosis = -.27, and Kolmogorov-Smirnov Z = 1.18, P = .12)*.

Table 10

Distribution of Technology Use by Groups

		Personalized E-book Reading Group (n=24)		PDF E-book Reading Group (n=24)		Gamified E-book Reading Group (n=24)		Printed Book Reading Group (n=24)		P
		n	%	n	%	n	%	n	%	
Have you ever heard Raz-Kids	Yes	1	%4.2	1	%4.2	1	%4.2	1	%4.2	X^2=0.33
	No	22	%95.7	23	%95.8	23	%95.8	23	%95.8	p=0.95
Have you ever read books from the screen	Yes	10	%41.7	16	%66.7	16	%66.7	19	%79.2	X^2=7.68
	No	14	%58.3	8	%33.3	8	%33.3	5	%20.8	p=0.05
Tablet	Yes	3	%12.5	9	%37.5	8	%33.3	9	%37.5	X^2=4.89
	No	21	%87.5	15	%62.5	16	%66.7	15	%62.5	p=0.18
Phone	Yes	9	%37.5	8	%33.3	8	%33.3	11	%45.8	X^2=1.06
	No	15	%62.5	16	%66.7	16	%66.7	13	%54.2	p=0.78
Computer	Yes	7	%29.2	9	%37.5	6	%25.0	8	%33.3	X^2=0.97
	No	17	%70.8	15	%62.5	18	%75.0	16	%66.7	p=0.80
Do you use tablet/ phone at home ?	Yes	24	%100.0	23	%95.8	23	%95.8	24	%100.0	X^2=2.04
	No	0	%0.0	1	%4.2	1	%4.2	0	%0.0	p=0.56
School	1	7	%29.2	0	%0.0	8	%33.3	12	%50.0	X^2=15.40
	0	17	%70.8	24	%100.0	16	%66.7	12	%50.0	p=0.00
Home	1	0	%0.0	0	%0.0	1	%4.2	0	%0.0	X^2=27.86
	2	1	%4.2	0	%0.0	2	%8.3	0	%0.0	p=0.02
	3	2	%8.3	4	%16.7	11	%45.8	7	%29.2	
	4	1	%4.2	0	%0.0	2	%8.3	1	%4.2	
	5	5	%20.8	5	%20.8	1	%4.2	0	%0.0	
	7	15	%62.5	15	%62.5	7	%29.2	16	%66.7	

*p<,05

There was no statistically significant relationship between Razplus use status and the group *(X^2 = 0.33; P = 0.95 < 0.05).* Previously, there was no statistically significant relationship between the tablet, phone, and computer reading status and the group *(X^2 = 7.68; P = 0.05 > 0.05).*

No statistically significant relationship was found between the tablet and the group *($X^2 = 4.89$; $P = 0.18 > 0.05$).* No statistically significant relationship was found between the phone and the group *($X^2 = 1.06$; $P = 0.78 > 0.05$).*

No statistically significant relationship was found between the computer and the group *($X^2 = 0.97$; $P = 0.80 > 0.05$).* There was no statistically significant relationship between the group of using phone tablets outside the school and the group *($X^2 = 2.04$; $P = 0.56 > 0.05$).*

A statistically significant relationship was found between the school and the group *($X^2 = 15.40$; $P = 0.00 < 0.05$).* The rate of using technology at school in the printed book reading group was higher than that of the PDF e-book reading group. The rate of using technology at school in the personalized e-book group was higher than that of the PDF e-book reading group.

A statistically significant relationship was found between the home and the group *($X^2 = 27.86$; $P = 0.02 < 0.05$).* The rate of using technology at home in the gamified e-book reading group was higher than that of the PDF e-book reading group.

The rate of using technology at home in the gamified e-book reading book group was higher than that of the PDF e-book reading group. The rate of using technology at home in the personalized e-book reading group was higher than that of the PDF e-book reading group.

The rate of using technology at home in the gamified e-book reading group was higher than that of the PDF e-book reading group.

The rate of using technology at home in the gamified e-book reading group was higher than in the printed book reading group. The rate of using technology at home in the printed book reading group was higher than the gamified e-book reading group.

Table 11

Descriptive Statistics of the Participants Online Activities

		Personalized E-book Reading Group (n=24)		PDF E-book Reading Group (n=24)		Gamified E-book Reading Group (n=24)		Printed Book Reading Group (n=24)		P
		n	%	n	%	n	%	n	%	
Playing digital	Yes	20	83.3%	19	79.2%	15	62.5%	12	50.0%	X^2=10.00
Games	No	4	16.7%	5	20.8%	9	37.5%	11	49%	p=0.12
Taking notes	Yes	4	16.7%	7	29.2%	3	12.5%	0	0.0%	X^2=8.36
	No	20	83.3%	17	70.8%	21	87.5%	24	100.0%	p=0.03
Sending e-mail	Yes	3	12.5%	11	45.8%	2	8.3%	10	41.7%	X^2=13.71
	No	21	87.5%	13	54.2%	22	91.7%	14	58.3%	p=0.00
Communicating	Yes	23	95.8%	22	91.7%	19	79.2%	24	100.0%	X^2=7.63
with my friends	No	1	4.2%	2	8.3%	5	20.8%	0	0.0%	p=0.05
Surfing on the	Yes	20	83.3%	21	87.5%	15	62.5%	23	95.8%	X^2=9.93
internet	No	4	16.7%	3	12.5%	9	37.5%	1	4.2%	p=0.01
Sharing post on	Yes	8	33.3%	20	83.3%	13	54.2%	19	79.2%	X^2=16.71
social media	No	16	66.7%	4	16.7%	11	45.8%	5	20.8%	p=0.00
Reading books	Yes	4	16.7%	3	12.5%	3	12.5%	0	0.0%	X^2=4.01
	No	20	83.3%	21	87.5%	21	87.5%	24	100.0%	p=0.25
For my	Yes	16	66.7%	18	75.0%	18	75.0%	16	66.7%	X^2=0.80
homeworks	No	8	33.3%	6	25.0%	6	25.0%	8	33.3%	p=0.84
Listening to music	Yes	17	70.8%	12	50.0%	11	45.8%	21	87.5%	X^2=11.64
	No	7	29.2%	12	50.0%	13	54.2%	3	12.5%	p=0.00
Watching videos	Yes	19	79.2%	18	75.0%	11	45.8%	9	37.5%	X^2=12.91
	No	5	20.8%	6	25.0%	13	54.2%	15	62.5%	p=0.00

*p<,05

There was no statistically significant relationship between digital game playing and the group *(X^2 = 10.00; P = 0.12 > 0.05)*.

A significant relation was found between the use of technology to take notes and the group *(X^2 = 8.36; P=0.03 < 0.05)*. The rate of using technology to take notes in the PDF e-book reading group was higher than the rate of the printed book reading group.

There was a statistically significant relationship between the use of technology for sending e-mail and the group *(X^2 = 13.71; P = 0.00 < 0.05)*. The technology usage rate for sending e-mails in the gamified e-book reading group was higher than the personalized e-book reading group *($X^2 = 7.63; P = 0.05 > 0.05$).*

A meaningful relationship was found between the use of technology to surf the Internet and the group *($X^2 = 9.93; P = 0.01 < 0.05$).* The rate of using technology to surf the internet in the printed book reading group was higher than the gamified e-book reading group.

A statistically significant relationship was found between the use of technology to share on social media and the group *($X^2 = 16.71; P = 0.00 < 0.05$).* The rate of using technology for sharing on social media in the PDF e-book reading group was higher than the personalized e-book reading group.

There was no statistically significant relationship between the use of technology for reading books and the group *($X^2 = 4.01; P = 0.25 > 0.05$).*

There was no statistically significant relationship between the use of technology to do homework and the group *($X^2 = 0.80; P = 0.84 > 0.05$).*

There was a statistically significant relationship between the use of technology for listening to music and the group *($X^2 = 11.64; P = 0.00 < 0.05$).* The rate of using technology for listening to music in the printed book reading group was higher than the gamified e-book reading group.

There was a statistically significant relationship between the use of technology for watching videos and the group *($X^2 = 12.91; P = 0.00 < 0.05$).* The rate of using technology for watching videos in the personalized e-book reading group was higher than that of the printed book reading group.

Table 12

Descriptive Statistics of Personalized E-book Reading Group

		Personalized E-book Reading Group (n=24)	
		n	%
Have you ever heard personalization word before?	No	9	37.5%
	Yes	15	62.5%
Have you ever heard personalized reading before?	No	24	100.0%
	Yes	0	0.0%
Did you like personalized reading?	No	0	0.0%
	Yes	24	100.0%
Do you want to use personalized reading in the future?	No	0	0.0%
	Yes	24	100.0%

In the pretest, we asked the participant have they ever used personalized reading before and *100%* of the participants claimed that they had never heard personalized reading at school before. At the end of the experiment, in the post-test we asked participant do they want to use personalized reading in their lessons, 100% of the participants claimed that they would like to use personalized reading in the future.

Table 13

Descriptive Statistics of Gamified E-book Reading Group

		Gamified E-book Reading Group (n=24)	
		N	%
Have you ever heard gamification word before ?	Yes	2	8.3%
	No	22	91.7%
Have you ever used gamified reading before?	Yes	2	8.3%
	No	22	91.7%
Did you like gamified reading?	Yes	21	87.55%
	No	3	12.5
Do you want to use gamified reading in the future?	Yes	21	87.5%
	No	3	12.5%

In the pretest, we asked the participtant have ever heard and used gamified reading before and *91.7%* of the participants claimed that they had never heard gamified reading at school before. At the end of the experiment, in the post-test we asked participant do they want to use gamified reading in their lessons, *87.5%* of the participants claimed that they would like to use gamified reading in the future.

Table 14

Descriptive Statistics of PDF E-book Reading Group

		PDF E-book Reading Group (n=24)	
		N	%
Have you ever heard screen reading word before?	No	2	8.3%
	Yes	22	91.7%
Have you ever read from the screen?	No	2	8.3%
	Yes	22	91.7%
Did you like screen reading reading?	No	3	12.5%
	Yes	21	87.5%
Do you want to use screen reading in the future?	No	3	12.5%
	Yes	21	87.5%

In the pretest, we asked the participant have ever heard and used screen reading before and *91.7%* of the participants claimed that they had never read from the screen at school before. At the end of the experiment, in the post-test participants answered about do they want to use screen reading in their lessons, *87%* of the participants claimed that they would like to use screen reading in the future.

Table 15

Descriptive Statistics of Printed Guided Book Reading Group

		Printed Guided Book Reading Group (n=24)	
		N	%
Did you like printed guided book reading?	No	0	0.0%
	Yes	24	100.0%
Do you want to use guided reading in the future?	No	0	0.0%
	Yes	24	100.0%

In the pretest, we asked the participant had ever used guided reading before and the participants in printed guided reading group were stated that they had never used guided reading at school before. At the end of the experiment, in the post-test we asked participant do they want to use guided reading in their lessons, they claimed that they would like to use guided reading in the future.

3.2.2 Demographic Information about Participant Teachers.

In this research, there were 3 female and 1 male English teacher with an age range between 32 to 42. As for the teacher, they served for at least 3-5 years at the same institution. They were qualified English teachers, with at least 7-18 years of secondary school experience. They had been working in the same school at least 3 years. In table 16, you can analyze the teacher profiles.

Table 16

Participant teachers demographic information

N=4	Age	Gender	Experience	School	BA	Group
Teacher 1	32	Female	7	3	ELT	Personalized E-book Reading Group
Teacher 2	34	Female	9	5	ELT	PDF E-book Reading Group
Teacher 3	38	Female	13	3	ELT	Gamified E-book Reading Group
Teacher 4	42	Male	18	7	ELT	Printed Book Reading Group

3.2.3 Information about the Researcher

Finally, the study researcher had worked for 12 years as an EFL instructor at a private university and was holding a MA degree in Interpersonal Communication. Furthermore, she is one of the board members of an educational technology summit. She is keen to use new technology in her classes. She received training on personalized learning and gamified learning before undertaking this study so that she could get the sense of it and use it properly. In particular, while designing the content prior to the pilot study and during the pilot study, she kept in touch with the experts from whom she received the training, and occasionally asked for his guidance during the process. In particular, while redesigning the content prior to the pilot study and during the pilot study, the researcher kept in touch with the experts from whom she received the training, and occasionally asked for their guidance during the process.

3.3 Procedures

No names were used throughout the report to ensure confidentiality. The researchers got written permission from the school principal. We also received written consent from each of the ninety-six students' parents. The informed consent also gave contact information for the researcher, research advisor.

Part of the data collection instruments includes in-depth analytical procedures that clarify and analyze quantitative and qualitative methods; data collection procedures that illustrate data sources, sampling, method of implementation, and guidance. The chapter also concludes with the study's reliability and validity of the study conducted.

3.3.1 Data Collection Instruments

For the purposes of this research, either quantitative and qualitative data collection tools was used. For the quantitative part, pre-test, and post-test scores of the students was assessed, motivation questionnaire was conducted with four groups of students provided with guided reading to print group, pdf guided e-reading, gamified e-reading, and personalized e-reading. The questionnaire consisted of multiple-choice questions and open-ended questions investigating the perceptions of students on personalized electronic reading. Wilcoxon test, Mann Whitney U, and Kruskal Wallis test analyses were used while conducting descriptive data analyses. As for the qualitative part, the data was collected via field notes, focus group interviews, and teacher reflective journals.

The study described here investigates a five-week implementation of four different reading programs which took place in a state middle school in Istanbul in order to measure its impact and document the implementation. In Istanbul, students generally did not use assistive technologies to help them while reading. This particular study was important because it examined the progress of 96 sixth grade students over an five-week period of reading in different ways in EFL classes. None of the students in this study had a learning disability and they were not using any assistive technology to improve their reading comprehension.

3.3.1.1 English Proficiency Test

For this study, the Cambridge Movers Sample Test was used at the time of the analysis to measure the present level of EFL skills of the students. The evaluation was performed not only by the researcher as well as another experienced teacher working at the same school and teaching the same student class. After both scorers completed evaluating all the proficiency tests separately, they worked together to compare, explain and negotiate their scores, which allowed interrater reliability.

Table 17

Details of the Sections in Cambridge Movers Examination

	Students practice	**Questions**	**Score**	**Time Allowed**
	Match names outside a picture with the people that are inside a picture.	Draw lines.	5	**About 25 minutes**
	Answer questions about a place, trip, party etc.	Write words and numbers.	5	
	Match people or objects in one set with pictures of objects in another set.	Write letters in boxes.	5	
Listening	Choose the picture with the correct information.	Tick boxes.	5	

	Choose the right parts of a picture and understand coloring and writing instructions.	Colour parts of a picture. Write something.	5		
	Match pictures/words with describing sentences.	Copy words.	6		**About 30 minutes**
	Choose the right answer to questions.	Circle a letter.	6		
	Choose correct pictures/ words to fill gaps in a short story and the correct title for the story.	Copy words and tick a box.	6		
	Choose the right words to fill gaps in a short text.	Copy words.	7		
	Find words in a story to complete sentences.	Write one, two or three Words	10		
Reading and Writing	Complete sentences, answer questions and write sentences about a picture.	Write words and sentences.	5		
	Find differences between two pictures (objects, colors, numbers, positions etc.).	Say what is different.	5		**About 3-5 minutes**
	Talk about pictures that tell a story.	Say short sentences.	10		
	Choose a picture that is different from three others.	Say how it is different.	5		
Speaking	Answer questions about you.	Give short answers.	5		
		Total Score		**100**	

As seen from Table 17, in the sample test performed in this report, the maximum score a sixth-grader can obtain is 100, and one question is assigned 1 point.

The real Cambridge Movers Test rating scheme was not based on numerical scoring. In order to determine the foreign language proficiency levels of each participant student with the aim of achieving scores that could later be used to determine the individual book levels on www.raz-plus.com, the researcher used another method of evaluation by allocating a total score for each part of the examination and calculating each student's personal score through a simple mathematical addition operation.

Table 18

Kruskal Wallis-H Statistics and Descriptives of Groups on Cambridge Movers Proficiency Test

Groups	n	Mean	$\chi 2$	df	P
Printed Book Reading Group	15	24.53	2.41	2	.29
PDF E-book Reading Group	14	20.25	2.41	2	.29
Gamified E-book Reading Group	12	17.46	2.41	2	.29
Personalized E-book Reading Group	15	24.53	2.41	2	.29
	Total 56				

As shown in Table 18, the Kruskal-Wallis H test results indicated no statistical differences across the four groups. The scores of the Reading were also used for determining the English proficiency levels of the participants (for the CEFR and skills level scores of Cambridge Movers Proficiency Test, see Table 18). In accordance with the CEFR (Council of Europe, 2001) and skills level scores, and the CEFR and English proficiency levels of the participants in each group are reported in Table 18.

After the completion of the piloting process and analyzing the results, the sample test was administered simultaneously to four groups, and the analysis lasted about 65 minutes. And, the results were evaluated through a cumulative review of all the test pieces. Subsequently, every student was given book rates ranging from I to J according to the total scores the students earned from the test (see Appendix T).

3.3.1.2 Reading Comprehension Tests

Reading comprehension tests was used to assess the students' English language proficiency after each storybook. They helped to determine any changes in their reading comprehension. A reading comprehension test was developed to compare reading comprehension on the content of the five weeks of the electronic reading course. Many software packages as well as websites and application was available for reading. Raz-Kids was a platform for reading online. This program was granted by GLOBED Company for the study to the school for the sixth graders. The program initiated in 2004 and it was an internet-based computer program for young readers around the world (http://www.raz-kids.com). The program's features let students listen to fluent reading, record their own practice reading, and take a quiz at the end of the reading. It also encourages teachers to set up individual accounts for each student so that an individual student can engage on their own level in independent reading. Points were given as a reward to listen to and read the story and take the quiz. Such points could be used to buy items that were included in the software as a game option for a learner's Raz Rocket. In Raz-Kids.com, The Reports tab provides information on the level of reading, the length of time visiting the site, read books, failed quizzes, missing skills at each question, the length of time at each level of reading, and whether a student had listened to the plot. In Raz-Kids.com, students were able to collect stars and create rockets based on their reading achievement. When leveling their books, the software used qualitative and quantitative data. It used a system of letters to describe each level of the book. The level of the book was associated with other common leveling programs like Developmental Reading Assessment, Lexile, and Reading Recovery.

3.3.1.3. Motivation of Reading Questionnaire

In 1995, Wigfield and Guthrie developed the Motivation of Reading Questionnaire to evaluate different aspects of reading motivation. They identified 11 aspects and they were grouped into the three categories of motivation and the first two aspects of motivation were based on the work on self-efficacy. Such factors are the value of reading, the confidence that one can excel in reading, and the difficulty of reading, the pleasure of learning or assimilating complex ideas in text. The next set of considerations is focused on intrinsic-extrinsic motivation, subjective principles and expectations of achievement. According to Guthrie (1996), the intrinsic dimensions of motivation and learning goals include reading curiosity, the ability to know about a specific topic of child interest, and participation in reading, the pleasure of experiencing various kinds of literary or informative texts. Reading motivation questionnaire which was developed by Baker and Wigfield, (1999) to investigate the impact of the gamified reading courses before and after the experiment was applied.

Yildiz (2010) adapted the questionnaire in Turkish. In this thesis, his Turkish adapted version was used and permission to use the questionnaire was taken from the person who adapted the questionnaire in Turkish. According to Yildiz (2010), the study was conducted with 376 students attending to 5th, 6th, 7th and 8th grades in the province of Ankara. The scale includes 39 items and 7 factors namely intrinsic motivation, perceived competence, perceived difficulty, value, devalue dedication and avoidance. SPSS 17.00 and AMOS 18 software were used for data analysis. The factor structure of the scale was faithful to the original. The reliability coefficient of the scale was found to be *.84* using the internal consistency method. According to the results of the analysis, the psychometric properties of the scale were suitable to use, valid, and reliable. The 24 items finalized version was appropriate for the use in the Turkish language.

Reading motivation questionnaire was used to assess the students' reading motivation before the study (pre-test) and after the test (post-test). It helped to determine any changes in their reading motivation. The questionnaire was administered by the researcher and administration was done in the classroom. Before the children answered the survey, students were told that they should answer questions about their reading and that the questions had no right or incorrect answers. Children were answered to each item on a scale of 1 to 4, with the choice of answers ranging from very different from me to a lot like me. Children were allowed to read the questions on their own. The students completed the MRQ approximately in 7 minutes.

Table 19

Cronbach Alpha Coefficients for Reading for Motivation Questionnaire

Scale	Number of Items	Cronbach Alfa (N=56)
Self-efficacy	4	0.73
Competition	4	0.77
Social	4	0.63
Curiosity	4	0.74
Recognition	4	0.89
Compliance	4	0.87
Total Overall Motivation	24	0.91

To understand the level was appropriate for the participants, the sample test was piloted in another class of 6th graders, which had 56 students. Detailed information could be seen in table 19. The data obtained from the pilot study were analyzed descriptively via SPSS 22 and the alpha value of the related Cronbach was shown to be *.91*, which indicated that the test was statistically sufficiently accurate. One of the preferred methods within the scope of the reliability of the scale was to examine internal reliability. Cronbach-Alpha values were examined to examine internal reliability. Table 19 showed the general motivation Cronbach-Alpha value: *0.91*.

3.3.1.4 Survey of Adolescent Reading Attitudes

Adolescent Reading Attitudes Survey (ARAS), developed by McKenna, Simkin, Conradi, and Lawrence (2008) determined reading attitudes of adolescents regarding recreational and academic content in either print or digital format, could be scored to reveal positive, somewhat positive, neutral/indifferent, somewhat negative or negative attitude about recreational reading in print settings, recreational reading in digital settings, academic reading in print settings, and academic reading in digital settings. This was a five-point Likert Scale developed by McKenna, Simkin, Conradi, and Lawrence (McKenna & Stahl, 2009), with high internal consistency and validity.

Bastug and Keskin (2013) adapted the questionnaire in Turkish and permission to use the questionnaire was taken from the person who adapted the questionnaire in Turkish. Bastug and Keskin (2013) were comprised adaptation of the Adolescent Reading Attitudes Survey on 702 sixth, seventh, and eighth-grade students in Konya-343 of them being female and the remaining 359 being male. The original scale had 18 items in four sub-dimensions, namely academic reading in digital settings (AD), recreational reading in digital settings (RD), academic reading in print settings (AP), and recreational reading in print settings (RP). The exploratory factor analysis and confirmatory factor analysis revealed that the four original sub-dimensions were retained when two items were omitted. Cronbach's alpha coefficients were 0*.69, 0.80, 0.69, 0.60,* and 0.62 for the overall scale, RD, RP, AP, and AD respectively. The 16 items finalized version was appropriate for the use in the Turkish language. The results suggested that the adapted scale was reliable and valid.

In this thesis, adapted version as a pre-test and post-test were used. This survey had four subscales: recreational reading in print settings, academic reading in print settings, recreational reading in digital settings, and academic reading in digital settings. The questionnaire includes 41 items and was given to the participants to circle one of the boxes telling how they felt about each item. Answers varied from negative to positive with an equal score of 6 to 1. Table 20 illustrates the subscales, the scores, and their interpretation.

Table 20

ARAS Guide to Interpreting Scores (McKenna & Stahl, 2009).

Subscale	**Negative**	**Somewhat negative**	**Neutral**	**Somewhat positive**	**Positive**
Recreational Reading in Print Settings	12-24	25-36	37-47	48-59	60-72
Recreational Reading in Digital Settings	9-18	19-27	28-35	36-44	45-54
Academic Reading in Print Settings	10-20	21-30	31-39	40- 49	50-60
Academic Reading in Digital Settings	10-20	21-30	31-39	40- 49	50-60

To understand the level is appropriate for the participants, the sample test was piloted in another class of 6th graders, which had 56 students. Detailed information can be seen in table 21.

Table 21

Cronbach Alpha Coefficients for Survey of Adolescent Reading Attitudes

Scale	Number of Items	Cronbach Alfa (N=56)
Recreational Reading in print settings	2	0.74
Academic Reading in print settings	3	0.87
Recreational Reading in digital settings	2	0.89
Academic Reading in digital settings	3	0.92
Total Overall Motivation	10	0.94

The data obtained from the pilot study were analyzed descriptively via SPSS 22 and the alpha value of the related Cronbach was shown to be *.94*, which indicated that the test was statistically sufficiently accurate. One of the preferred methods within the scope of the reliability of the scale was to examine internal reliability. Cronbach-Alpha values were examined to examine internal reliability. Table 21 showed the overall motivation Cronbach-Alpha value: *0.94*.

3.3.1.5 Field Notes

One of the objectives of this study was to examine the implementation of the experiences of electronic reading and the effectiveness of gamified/personalized reading. Input contributed to interaction was believed by many researchers (Gass & Mackey, 2006; Krashen 1982). The researcher kept field notes for each lesson. Creswell (2012) suggested that while keeping the field notes, care was taken to keep the descriptive and reflective notes. While taking notes, she recorded the interpretive notes about the behaviors observed in the reflective notes, the new points she could focus on during the analysis, and her views on the activities. Field notes were used as supportive data to create descriptive information about the courses followed and to analyze the observations. The researcher and two field experts in the field coded the data separately to supply interrater reliability. Miles and Huberman's (1994) formula was used, and it was found *85%* which shows interrater reliability *(P > 70%)*.

3.3.1.7 Reflective Journal

In qualitative research, the use of a reflective journal was used commonly and had generated interest in the research field. John Dewey became one of the first academics to base his research on reflective thinking and the positive influence of the reaction on the promotion of self-reflection and critical thinking. Researchers were expected to share their opinions about themselves through the research procedure — their values, decisions, expectations, and behaviors (Mruck & Breuer, 2003). Reflective thought is an "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends" (Dewey, 1910, p. 3). Thus, the researcher requested the teachers to hold a reflective journal during the process to examine the experiences of the teachers about the application of electronic reading. The teacher kept a reflective journal and sent it regularly to the researcher. Besides, the researcher did not include the teacher with guidance on what to write or how to write such reflections so as not to have any sort of impact on the teacher's reflections and to prevent the bias problem in qualitative research. The researcher and two field experts in the field coded the data separately to supply interrater reliability. Miles and Huberman (1994) formula was used, and it was found *80%* which shows interrater reliability *(P > 70%).*

3.3.1.8 Focus Group Interviews

The focus group interview is to bring together people who have shared the same experiences or shared common characteristic to obtain their perceptions about a predetermined topic in a moderate and non-threatening environment (Yıldırım, & Şimşek, 2008). The informal atmosphere in focus group discussions helps participants talk freely and in detail about their behavior, attitudes, and ideas. Within the scope of the study, it was thought that the collection and analysis of qualitative data will provide detailed information about the classroom environment where e-book reading was made and thus, a deeper contribution was made to the application. In the current research, at the end of the screen reading experiment, a focus group interview was held with twelve students volunteer students with official permission from the school.

Details of the focus group interviews were explained in this paragraph. Focus group interviews were carried out in four different meetings to reveal what kind of change the screen reading based on action research caused on students' motivation, digital attitude to reading in English as a foreign language. In each meeting, different experiment groups attended the focus group interview. Each focus group meeting had five participant students, moderator, and rapporteur.

The moderator and the rapporteur came to the computer lab where the interview was held before the focus group interview, completed the preparations (table, chair, paper, pen, seating arrangement, beverage, food, etc.) and met the participants (Gibbs, 1997; Kitzinger, 1995).

In the computer laboratory, there were two recorders and they were checked by the moderator before the focus group interview (Kitzinger, 1995; Gibbs, 1997). Before the interview began, the person who conducted the interview recorded the date, place, time, who conducted the interview, and the reporter's name on the recorder. Thus, control of the devices was done. A note about the meeting was written on the door of the meeting place to prevent intruders. While the group was expected to complete, nothing discussed with the participants. When all group members were ready for the focus group interview, the moderator stated that the interview was going to be recorded with two voice recorders.

It was noted that these records were going to be reported by the researchers involved in the project, and the names of the participants were not going to be included or as cited in these reports. The researcher informed the students about the purpose of the interview and that they could end the interview at any time, and stated that they would not reveal their identity in the report they built.

The focus consisted of group respondents answering the same question in turn. The content of the focus group discussions shaped the discussions among the participants on the subject. During the focus group interviews, the interview questions had been developed by the researcher and finalized by taking the opinions of five different field experts were used. At the end of the current study, four focus group interviews were held with the participation of five students from four different classes.

Focus group interviews were 30 minutes on average. Students volunteered to participate in the interview.

With the focus group interview, it was aimed to determine the students' awareness of the practice and their opinions, in this context, the difference from the previous lessons of the practice, the changes they saw in their teachers, their favorite, the most difficult experiences, the benefits of their participation in the lesson, etc. Questions addressing themes were prepared. These questions were examined by five field experts and the questions were finalized. The researcher and two field experts in the field coded the data separately to supply interrater reliability. Miles and Huberman’s (1994) formula was used, and it was found 90% which shows interrater reliability *(P > 70%)*.

3.4 Data Collection Procedures

In this part of the study, the sources of data, and the implementation process was presented in detail. In this section, data collection tools, implementation, data collection procedures, the types of sampling, test validity, and reliability were discussed. The limitations of the study were further explained.

3.4.1 Types of Sampling

Sampling method for investigators to focus on a limited concentrated part of the target population rather than the population as a whole (Ary et al., 2013; Cohen, Lawrence, & Morrison, 2007). The procedures for sampling are composed of two major sampling types: probability and nonprobability. The first one is defined as random sampling, which shows that each person in a population has equal opportunity to be selected. On the other hand, nonprobability sampling refers to sample dependent on certain parameters. It is further divided into three categories: convenience, purposive, and quota sampling (Creswell & Plano-Clark, 2007). The convenience sampling was preferred in this study due to the easy access of students from the state school. Ministry of Education found the school for the study and assigned it to the researcher in Istanbul.

96 participants from the 6th-grade state middle school were convenience samples for this study (Cohen, Manion, & Morrison, 2007; Fraenkel & Wallen, 2006).

Correspondingly, Fraenkel and Wallen (2006) highlighted the difficulty of implementing true random or systematic random sampling: Many times it is extremely difficult to select either a random or a systematic non-random sample and such times, a researcher may use convenience sampling. A convenience sample is a group of individuals who conveniently are available for study . Dörnyei and Taguchi (2009) draw a framework for convenience sampling as follows: Members of the target population are selected for the study if they meet certain practical criteria, such as geographical proximity, availability at a certain time, or easy accessibility . Thus, convenience sampling is a non-random (Fraenkel & Wallen, 2006) or non-probability (Blaxter, Hughes, & Tight, 2006; Creswell, 2012) sampling method which is quite common in second language research (Mackey & Gass, 2015).

The students were divided (as they had already been placed in different classes in the fifth grade) into four groups to increase the reliability and validity of the study. Fraenkel and Wallen (2006) recommend 50 students would suffice the research: "For correlational studies, a sample of at least 50 is deemed necessary to establish the existence of a relationship". Correspondingly, Saleh, Al-Tawil, and Al-Hadithi (2013) posit, while the size of the sample ought to be determined by specific scientific methods, a general rule of thumb is that each group ought to have at least 20 participants. Thus, 96 participants were quite reasonable for this type of research.

To determine if these randomly assigned four groups' levels were equal or not, a nonparametric Kruskal-Wallis H test was administered on their Cambridge Movers Exam scores, and it was found that there was no statistically significant difference between the level of these groups at p= .05 level as the significance level is $P = .082$ and since $P > .05$ it could be said that there was no statistically significant difference observed among groups in terms of their proficiency level according to Cambridge Movers Test Scores.

Moreover, Allan (2004) postulates, "The Cambridge Movers Tests have proved to be highly effective initial placement instruments and a reliable means of grading students at all levels from elementary upwards, with a consistent record of predictive validity in respect of examination entry". In a similar vein, Akpınar and Bardakçı (2015) rationalize the reason of choosing this test as: "the reason why the Cambridge Movers Test was used for determining proficiency levels is that Cambridge

Movers Test results are reported to correlate highly with the rank orders from much more elaborate and lengthy testing procedures".

All in all, the test had been found highly reliable by various scholars and had been used as a foundation stone for numerous studies in a variety of EFL/ESL contexts world-wide (Abdi & Nasiri, 2015; Akpınar & Bardakçı, 2015; Eskandari & Soleimani, 2016; Estalkhbijari, 2012; Mahmoodi & Dehghannezhad, 2015; Rahimy & Shams, 2012; Tous, Tahriri, & Haghighi, 2015).

3.4.2 Implementation

This section explained the three steps followed in this study. The first step explained the needs analysis conducted for the study. The second step explained the pilot study. Finally, the third step presented the main study. The following section described each step in detail the experimental procedure was clarified in detail week by week afterward.

3.4.2.1 Step 1: Needs Analysis for Web-based Personalized Reading Platform

When the web-based personalized reading platform was created, the neo-Vygotskian focus was used on learning-related social and cultural factors and the role of contact and shared knowledge in fostering cognitive development (Karpov,2014). Therefore, when concentrating on literacy practices such as reading books, a key issue for consideration is the involvement of educators with socio-cultural significance and awareness. In the funds of knowledge framework, research takes up the cultural-historical context of shared home book reading, which has implications for personalized instruction in literacy (Gonza´lez et al., 2005). The development and sharing of customized books pave the way for new directions in early learning of literacy in line with this research agenda. To educators, in their children's literacy teaching, this cycle encourages feelings of pride, control, and agency (Janes and Kermani, 2001). According to Gonzalez et al., (2005), with personalized books, educators' funds of knowledge (such as educators' own cultural and personal experiences, traditions and home languages) are part of literacy education. The same source also stresses that each book reading session is unique and needs to be evaluated in light of the specific characteristics of all three session participants: adult, child, and book.

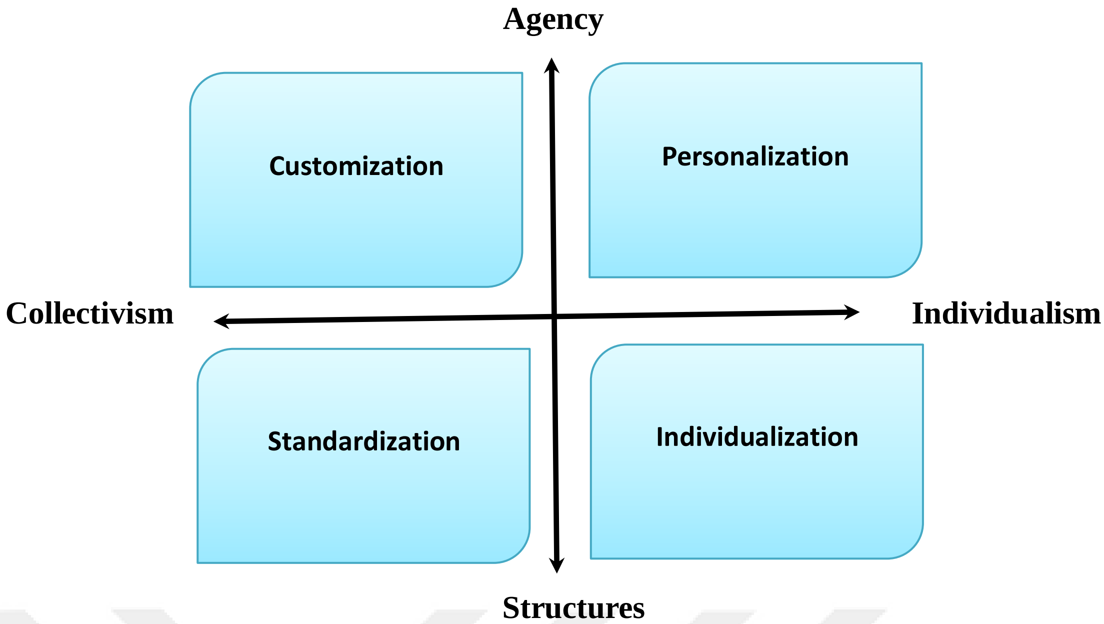


Figure 11 ***Representation of Customization, Personalization, Standardization, and Individualization (Kucirkova, 2016).***

Figure 11 shows that whereas higher agency and individualism contribute to the personalized design, higher structure and collectivism lead to generic and standardized design. Both axes demonstrate that custom design applies to individual children, while custom design refers to children's classes (e.g. boys and girls). Personalized products were special to a child as they began producing with the child. On the other hand, individualized items were exclusive to a child because their creation derived from a standardized product that was then tailored to a particular child. A web-based application was created for a personalized reading program. The teaching process was the planning of the learning activity that was carried out according to the learning objectives.

Although designs for traditional teaching had been generated during the Second World War, the constructivist theory has focused on teaching designs based on behavioral science developed in the post-World War II period (Clark, 2012; Reiser, 2011). More than forty models have been developed since the 1970s regarding the basis of the teaching design models, and among these models, the most used model is the ADDIE design model. ADDIE model has five stages including processes of analysis, design, development, implementation, and evaluation to solve the teaching problems (Gustafson & Branch, 2002; Reiser, 2011). With new technology, the use of problem-oriented and pedagogy-based teaching design models for both game and teaching purposes, especially in the virtual world, has increased its importance

(Whitton & Hollins, 2008). The design of digital content in teaching has become popular among educators in these days (Johnson, Onwuegbuzie, & Turner, 2007; Pfeil, Arjan & Zaphiris, 2009). The ADDIE model for website design was used while creating a web-based application.

ADDIE has a 5-step process for educational web design: analyze, design, develop, implement, and evaluate. This model was created for instructional purposes but it was also used in web design projects.

Analysis Phase: The project priority of the designers in this process was the target users and the goals of the project. The educators, therefore, evaluated four variables that were students, educational objectives, educational review, and learning objectives. Students were the first factor for analysis. Educators need to explore the prior knowledge of students about *"English as a Foreign Language"* and the challenge that students face so that educators could identify the areas that need to be concentrated on and ways to solve their difficulties in reading in a foreign language. Instructional goals educators do need to define the obvious goals for this instruction to the child. Developing a very successful instruction template was simpler when a specific target was set. Therefore, the main objective of this project was to make it easier for students to increase English as a foreign language output through the website to inspire them to read English.

Learning outcomes and learning needs (what results should be achieved, what knowledge should be adopted) were defined. To achieve this, students' knowledge and skills required (specific skills required) were also described. The researcher identified all pedagogical considerations, particularly in the case of online courses (adequacy of the approach chosen, adequacy of the methodology chosen, constraints ...)

Learning objectives: Through this study, the researcher ensured what the students would be able to do after completing the lesson. The instructors referred to and adopted the course outline for *"English as a Foreign Language"* to evaluate the learning goal and the learning outcomes. In order to collect the required data above, a set of questionnaire was adopted as the research tool. Students' need analysis was carried out by distributing need analysis questionnaires among the sixth grade EFL students. Through this context, an overview of the prior need for the development of the personalized electronic reading website included 100 grade six students who studied in a state school. Table 22 showed that the need analysis questionnaire which had four parts- Section A probed on the demographic details of the students; gender, year of study, mother tongue, and English as a foreign language learning background. In the questionnaire in order to generate the similarities and differences among students topic related questions were used. Section B was related to students' needs in learning English as a Foreign Language, while Section C tried to collect data about the challenges faced by students in reading English. Lastly, section D probed students' suggestions and opinions on the features of an effective educational website. Table 22 shows the sample questions included in the need analysis questionnaires.

Table 22

Need Analysis Sample Questions

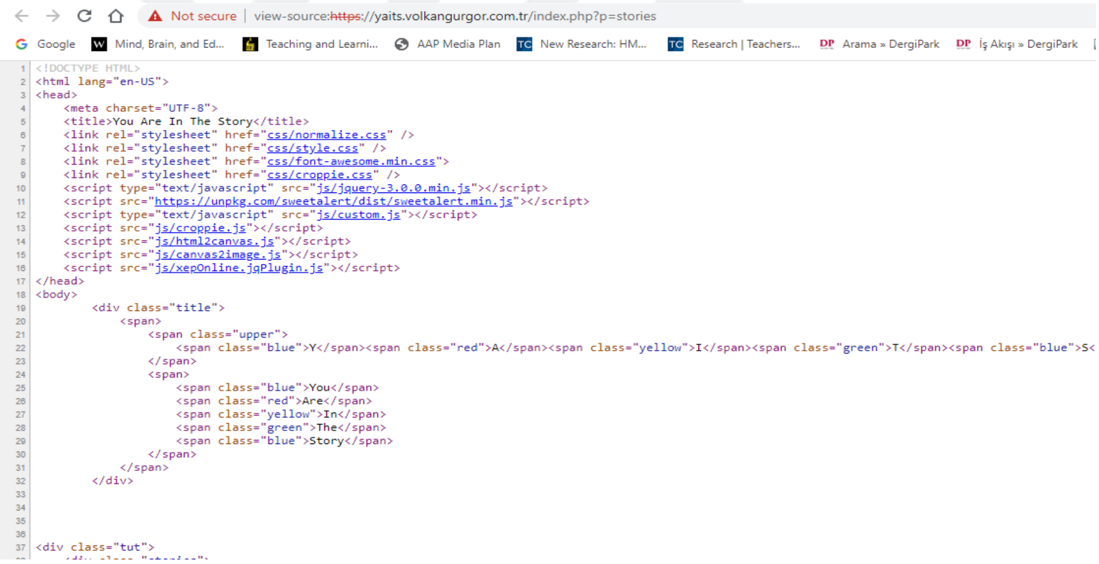
Section	**Question**
A (Demographic background)	1) Gender
	2) Mother tongue
	3) English as a Foreign Language background
B (Students' Need)	1) Students' need
	2) Language skill
C (Challenges)	1) Learning obstacle
	2) Teaching methodology
D (Opinion & suggestion)	1) Multimedia elements
	2) Games activities
	3) Web-based element

Design Phase: The second phase of ADDIE model was the design phase. In this process, the designers concentrated on the website's conceptual construction particularly on the website setting, what it could do and how to use it to meet the needs of the students. This stage used the data gathered from the analytical process to acquire the relevant theories and models of instructional design that described how learning could be obtained. Three design components to be based on by educators were learning content, tests, and instructional strategies including teaching methods and website design.

Learning content design: This step assures the material was well crafted to reach the learning objective. The educators had developed learning material based on the needs of the students as well as their thoughts and feedback based on the data gathered during the research process. In many studies, the font Verdana was believed to be a better choice to use while reading (Ali, Wahid, Samsudin, & Idris, 2013; Chapparo, Shaikh, Chapparo, & Merkle, 2010; Hojjati & Muniandy, 2014). So, Verdana was chosen as a font. Dyson (2004) found out that readers perform better when the texts were presented by using double-space on the screen between the lines. Another study also suggested that reading time had increased for 10-year olds when reading a computer presented text (Kerr & Symons, 2006). According to Sanchez and Wiley (2009), reading time is influenced by the amount of scrolling while the student is scrolling the text. Some other studies also reached the same conclusion, scrolling has a negative impact on text recall and/or reading comprehension among adult readers (Sanchez & Wiley, 2009; Delgado et al., 2018). Eklundh (1992) claimed that scrolling disrupts the reader's sense of text structure and spatial location of information, and hence makes it more difficult to understand the text. Scrolling was likely to generate cognitive load in the limited working memory capacity that students need when reading for comprehension (Sanchez & Wiley, 2009). In the study, to create the book in page format was decided, the reader does not need to scroll up and down while reading. The reader turned the pages. When the learning content and assessment were identified, the researcher started to design the instructional strategy by combining various methods to help students understand the topic. Then, the researcher and the field experts designed the website by preparing flowcharts and storyboards.

Development Phase: In this stage, the information which was collected in the analysis stage and started to build website. The development phase involved producing and testing the methodology used in the project. This stage was conducted based on the data collected from two previous phases. The developers started the development of the website by considering the hardware and software requirement required for the development. Frontend user interface language was used on the web-page. Frontend languages include CSS 2/3, Html 4/5, Javascript. It has to do with all the languages and frameworks used in designing and adding interactivity to web apps. Backend languages include PHP, Javascript. Javascript is a language for client scripting that was used to build Web pages. It was a language built-in Netscape which was standalone. It was used to render a webpage interactive and to incorporate special effects on pages such as rollover, roll-out, and other forms of graphics. HTML and CSS were used to create the layout.

Such systems had been chosen to create a mature infrastructure that allowed website building to be faster and simpler, enabling non-tech-savvy people to run their great platform without any technological support. The following table presents the software needed to create this educational website. In this stage, we finally put it all together and build a usable, attractive, and effective website. Permission was taken from Raz-Kids headquarters, and content was adapted with the help of field experts. To collect data from users we preferred Mysql.



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Not secure | view-source:https://yaits.volkangurgor.com.tr/index.php?p=stories
Google   Mind, Brain, and Ed...   Teaching and Learni...   AAP Media Plan   New Research: HM...   Research | Teachers...   Arama » DergiPark   İş Akışı » DergiPark

<!DOCTYPE HTML>
<html lang="en-US">
<head>
    <meta charset="UTF-8">
    <title>You Are In The Story</title>
    <link rel="stylesheet" href="css/normalize.css" />
    <link rel="stylesheet" href="css/style.css" />
    <link rel="stylesheet" href="css/font-awesome.min.css">
    <link rel="stylesheet" href="css/croppie.css" />
    <script type="text/javascript" src="js/jquery-3.0.0.min.js"></script>
    <script src="https://unpkg.com/sweetalert/dist/sweetalert.min.js"></script>
    <script type="text/javascript" src="js/custom.js"></script>
    <script src="js/croppie.js"></script>
    <script src="js/html2canvas.js"></script>
    <script src="js/canvas2image.js"></script>
    <script src="js/xepOnline.jqPlugin.js"></script>
</head>
<body>
        <div class="title">
            <span>
                <span class="upper">
                    <span class="blue">Y</span><span class="red">A</span><span class="yellow">I</span><span class="green">T</span><span class="blue">S<
                </span>
                <span>
                    <span class="blue">You</span>
                    <span class="red">Are</span>
                    <span class="yellow">In</span>
                    <span class="green">The</span>
                    <span class="blue">Story</span>
                </span>
            </span>
        </div>




<div class="tut">
```

Image 1 Screenshot of the programming language of the personalized e-book reading web page

In image one, you can find the sample screenshot of the programming language of the personalized book reading web page.

After website development was completed, experts in Computer-Aided instruction and English as a Foreign Language and personalized reading conducted a thorough review of the website. They tested the website and provided their opinions and suggestions in order to improve the website before it was used in sixth grade English as a Foreign Language students. The website was redesigned, updated, and enhanced in terms of learning material and online guidance prior to the implementation process.

The implementation process was then applied among the students at the aim. This process includes delivering and distributing the materials to target students who were secondary school students in the 6th grade who participated in the English Main Course. The number of students who took part in the implementation process was 24. In the process of reading, a computer laboratory with computing facilities and internet access was used for implementing the educational website. This process required all products to be tested to determine if they were working well and appropriate for the intended audience (Reiser & Dempsey, 2007).

Evaluation Phase: The last phase of the ADDIE method was evaluation. This phase ensured that the website designed could achieve the desired goals. The evaluation was conducted via the implementation phase with the help of the teachers who administered the evaluation survey among 24 6th grade students. This stage was administered to measure the effectiveness of the website in helping the students to learn the language, as well as for instructional improvement.

The prototype was created as a web page as the secondary state schools in Turkey did not have tablets and laptops at schools. This prototype was complemented by several components to facilitate students in English as a Foreign Language reading process. The materials presented in the prototype were from the Raz-Kids web site which was created by field experts and used millions of students around the world. There are several main components in the prototype and the details. The home page gave a clear overall picture of the website. There was the only name of the web site and access code tabs and a header written “You are in the story” on the homepage. Besides, the header was created colorful to attract students’ interest in reading English as a Foreign Language.

The elements for the assessment were tabulated in table 23.

Table 23

Prototype Outcome

Evaluation Items titles	Evaluation item
A (Demographic background)	1) Gender
	2) Mother tongue
	3) English as a Foreign Language background
B (Features and performance)	1) Multimedia elements
	2) Usability
	3) Main interface
C (Content delivery)	1) Relevancy
	2) Supporting materials
	3) Language used

The second component was the students photographs. The purpose of the photograph was to attract students attention and personalize the stories they read. This was the most crucial component where the learning materials were placed. The website prototype had five personalized reading texts. Every text had related images and they were all colorful. All stories were created by field experts and thousands of students read. The personalized e-books were chosen accordingly students' favorite genre, which was realistic fiction. At the end of the lesson, the student had some interactive exercises in the form of multiple-choice and open-ended questions. Immediate respond was provided for each question.

Personalization was carried out through pictures/ images. The beneficiaries of the personalization the child/reader (through increased enjoyment of the story). Common features that were used in personalized stories were visual and textual personalization. Visual personalization was used and participants added their own photographs into the story. Next, textual personalization was facilitated, and participants answered some questions, and words in the stories changed accordingly. Finally, students also changed the ending of the story. Another personalized reading feature which was used in this study was changing story characters. Readers could become the main hero of the story, and change the name of the main character and in some stories, they included their best friends' names too. They also changed appearance (gender, hair color, skin, hair type) of the main character and story location (name).

Well organized, filled with relevant and creative learning materials must be an effective instruction. One of the ways to obtain a successful instruction is to use the ADDIE instructional model described here. The creation of the website follows every step of the ADDIE model to create an accessible and efficient language learning resource that positively affected the academic achievement of the students.

Instructional procedure: Gamified reading group used online reading program Raz-Kids, which was presented for 6 weeks in each session for 90 minutes. 24 students were required to log in to the program during each session. Each child had their own username and password, and the software was set to their level of reading. The timer was set at 90 minutes for students to listen, read, and take quizzes on the books identified for their level. During these lessons, the other features were not allowed to be controlled and students were taught in class to develop reading fluency and comprehension skills before the experiment started for guided reading.

In each session, for 5 weeks, the personalized reading program was provided individually for 90 minutes. 24 students were required to log in to the program during each session. Every child had their individual login name and password, and the program was set to their level of reading. The timer was set at 90 minutes during which students read and took quizzes on their level books. During these sessions, they were not allowed to access the features of the play. However, prior to the research for guided reading, students were taught in class to develop reading fluency and comprehension skills.

PDF reading program was provided individually for 90 minutes in each session, for 6 weeks. During each session, 24 students open a folder and read the book from the screen. The timer was set to 90 minutes during which students read and took quizzes on the books designated for their level. They were not allowed to access any other page other than the pdf file during these sessions.

A printed guided reading program was provided individually for 90 minutes in each session, for 6 weeks. During each session, the teacher handout the book and printed questions to 24 students. The timer was set to 90 minutes during which guided reading activities were conducted and students took quizzes on the books designated for their level.

All groups had 2 hours of training before they started the study. They read fiction story which was selected to practice specific skills such as a) asking and answering questions about key details in the text, b) retelling a story, c) describing characters, settings, and major events in a story using key details, and d) using illustrations and details in a story to describe its characters, settings, and events.

3.4.3.2 Step 2: Pilot Study

As planned in the needs analysis part, the instructor started to apply for the program in the English course of the 6th grades at a state school. There were 56 students in this research, the students were divided into four groups. The experiment took about five weeks. Internet connection and the number of computers which work were the major problems. Pre-tests and post-tests were applied. The study was conducted in the 2019-2020 term and lasted the Fall term. All of the participants first took the English Proficiency test. As a proficiency test Cambridge Movers Sample test was used. In order to understand the level is appropriate for the participants, the sample test was piloted in another class of 6th graders, which had 24 students. The data obtained from the pilot study were analyzed descriptively via SPSS 22 and the alpha value of the related Cronbach was shown to be.813, which indicates that the test is statistically sufficiently accurate. The test took 65 minutes and the results of the text were graded by the researcher and a teacher from the school, who had been teaching in that school for more than five years and also doing doctoral studies in the ELT department. As we could not find any difference between the students and we understood the students' English proficiency level. We started to design four types of books in accordance with the study. Ten-hour personalized reading material and gamified e-book reading material were designed to achieve the aims of the course objectives. The personalized e-books were designed by the researcher and external advisor. Gamified e-books were chosen from the library of Raz Kids according to the English levels of the participants.

3.4.3.3 Step 3: Main Study

As planned in the needs analysis part, the instructor started to apply the reading program in the second stage of the study. As there were 96 students taking the course, the students were divided into four groups. The course lasted about 6 weeks. During the whole process, the researcher was the course instructor and the classroom teacher was the observer.

3.4.3.3.1 Pre-test

In the first lesson, all groups were instructed similarly in the class. Cambridge Movers pretest was conducted to the students and they were asked to complete it in 2 hours. Then, the Cambridge Movers exam was covered and evaluated, four groups as experimental and control groups were created. According to test results, reading text levels were organized. The participants in the study and control groups were briefly told about the reading course on Friday, during the first week. The teacher asked them only if there were any questions or missed points to be dealt with. The teacher introduced the reading program to the students after answering the questions and explained the goals of the program, how the program was performed, and how they were measured in detail. The instructor answered the program-related questions sharing the handouts with the students, so they could hit it when they wanted to. In addition, she revealed that next Friday she would be presenting the first storybook. Finally, she asked them to fill out the Reading motivation survey and test it by Digital Attitude until the end of the course. It took the students approximately 15 minutes to finish answering the survey questions.

Table 24 shows the chronological order of the study:

Table 24

Overall Study in Chronological Order

Activity	Date
Personalized electronic reading platforms was identified	September 2018
Personalized electronic reading platform was developed by the researcher	October 2018 - March 2019
Personalized electronic reading platform was evaluated by field experts	April 2019
Reading texts and classroom materials was developed	September 2018- September 2019
Pilot Studies of Reading Comprehension pre-post-tests was conducted	September 2019
Reading Comprehension pre-post-tests was prepared and proofread	September 2019
Movers Sample Test was chosen and proofread	September 2019
Results of the piloted tests was analyzed	September 2019
Participants took Movers Sample Test	October 2019
Results of Movers Sample Test were analyzed and the students' reading levels were determined	October 2019
The researcher organized a meeting with the other teachers to talk about the theoretical background and to share the lesson plans	October 2019
Permissions was taken from Head of Foreign Languages Department and the Director of Communications of Globed Turkey to gather data	September 2018
Questionnaires on Reading Motivation and Digital Attitude were applied as a pre-test	October 2019
Results of Reading Motivation and Digital Attitude were analyzed	October 2019
WEEK 1. 2 hours in total Reflective journal papers & Field Notes were collected	October 2019
WEEK 2. 2 hours in total Reflective journal papers & Field Notes were collected	October 2019
WEEK 3. 2 hours in total Reflective journal papers & Field Notes were collected	October 2019
WEEK 4. 2 hours in total Reflective journal papers & Field Notes were collected	November 2019
WEEK 5. 2 hours in total Reflective journal papers & Field Notes were collected	November 2019
WEEK 6. 2 hours in total Post test surveys were given , focus group interviews conducted with the students and completed	November 2019
Project report and research papers was finalized	January 2020

In addition, the teachers monitored the reading lessons of the reading teacher during the implementation, and took notes to share with them so that the screen reading lessons could be implemented accurately and in harmony. The other teachers often witnessed screen reading lessons from the researcher when they had no overlapping hours of instruction, at least once a week. The teachers provided screen reading lessons at various lesson hours, not concurrently – so the participant teachers could watch the researcher.

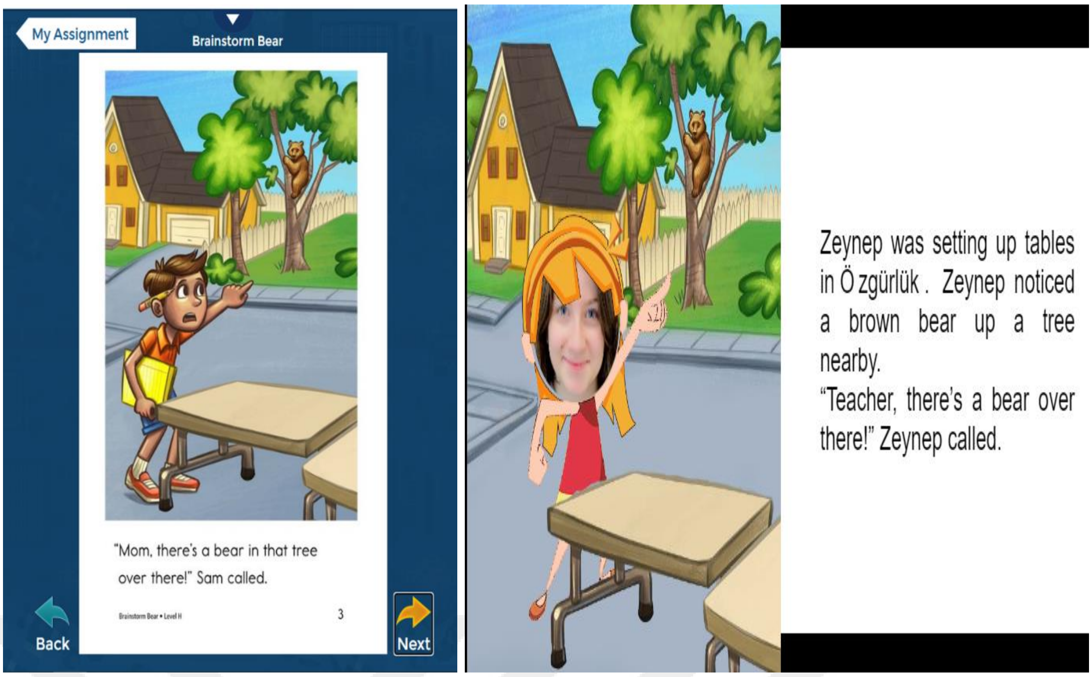

Image 2 and 3 Gamified E-book Reading Screen and Personalized E-book Reading Screen.

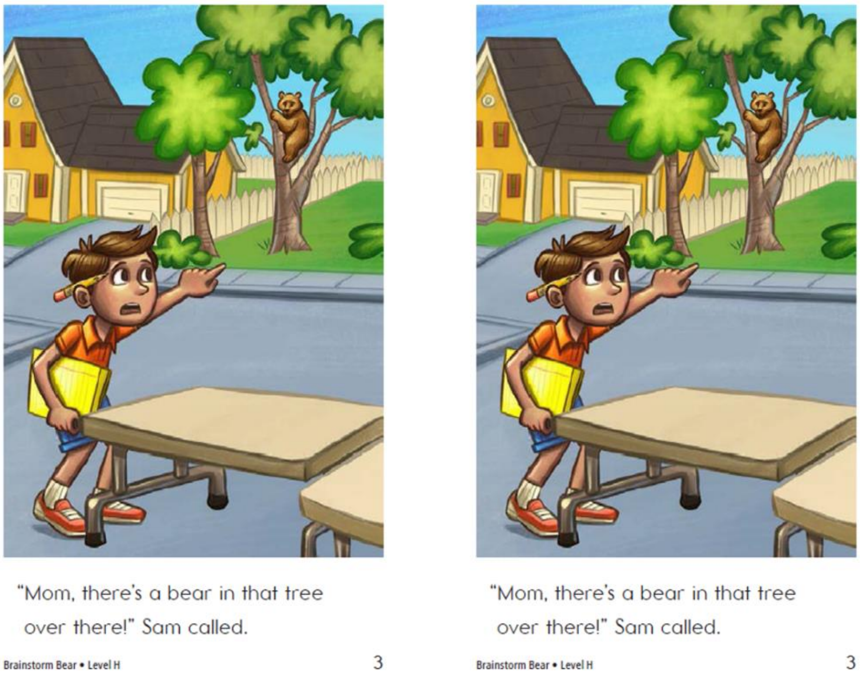

Image 4 and 5 PDF E-book Reading Screen and Printed Book Reading Group page.

3.5 Data Analysis Procedures.

In this research both quantitative and qualitative data collection instruments were used. In table 25, you could find an overview of the research questions and data collection instruments.

Table 25

Overview of Research Questions and Data Collection Instruments

Research Questions	Instrument	Data Analysis
1. Is there any difference between the 6th-grade EFL students exposed to gamified e-book reading, personalized e-book reading, PDF e-book reading, and the ones engaged in printed book reading in terms of their reading motivation, and reading time?	- Pre-test Reading Motivation Questionnaire (Baker & Wigfield, 1999) Post Reading Motivation scores	- Compliance, Social, Curiosity, Recognition, Competition, Self-efficacy - SPSS (Wilcoxon Test, Kruskal Wallis, Man Whitney U)
2. Is there any significant difference between personalized e-book reading, PDF e-book reading, gamified e-book reading, and printed book reading in the reading comprehension scores towards EFL reading of the 6th-grade students?	- Reading Comprehension Questions after each book -Reading time of the book read by each student	- SPSS (Wilcoxon Test, Kruskal Wallis, Man Whitney U)
3. Is there any significant difference between personalized e-book reading, PDF e-book reading, gamified e-book reading, and printed book reading in the digital attitude towards EFL reading of the 6th-grade students?	-Pre and Post-test of Digital Attitude Questionnaire (McKenna, Conradi, Lawrence, Jang, & Meyer, 2012)	- Academic Digital, Academic Paper, Recreative Digital, Recreative Paper SPSS (Wilcoxon Test, Kruskal Wallis, Man Whitney U)
4. What are the reflections and concerns of the secondary school teacher's regarding the reading program applied (gamified e-book reading, personalized e-book reading, PDF e-book reading, and printed book reading)?	- Field Notes - Teacher reflective journal	- Content analysis (Miles & Huberman, 1994)
5. What are participant students' reflections and concerns about the implementation of the reading program applied (gamified e-book reading, personalized e-book reading, PDF e-book reading, and printed book reading)?	- Focus Group Interview - Field Notes - Teacher Reflective Journals	- Content analysis (Miles & Huberman, 1994)

The quantitative data was collected via the Reading Motivation Questionnaire and the pre and post-test scores of the students. The data gathered from each instrument were tabulated and analyzed statistically using SPSS (Statistical Package for Social Sciences) 22.0 version for Windows. Finally, these scores were entered into SPSS and analyzed using Kruskal Wallis, Man Whitney U, and Wilcoxon test."

3.5.1 Quantitative Data Analysis

The data related to this dimension were quantitative, as experimental and control groups were established in the student dimension of the research and the effect of screen reading on students' reading comprehension scores, reading motivation and digital attitudes in foreign language learning were examined. In the analysis of quantitative data, the Kruskal Wallis test, Man Whitney U, and Wilcoxon test techniques were used in dependent groups. The Wilcoxon test is a non-parametric alternative to dependent groups t-test, which is a parametric test (Creswell, 2012). As the participants in the study were limited, non parametric tests were used in this study. The distribution of descriptive features by groups were compared with chi-square analysis. Kruskal Wallis test was used *"to compare quantitative continuous data between groups"* (Creswell, 2012). After the Kruskal Wallis test, the Man Whitney-U test was used as a complement to determine the differences. In the study conducted non-parametric tests were used because of the limited participant number.

Within the scope of the current research, students' e-book reading comprehension, reading time, reading motivation, and digital attitudes were taken under control, and the difference between post-test scores was examined with the Kruskal Wallis test and the change between repeated measurements in the group was analyzed with the Wilcoxon test. SPSS 22.0 software program was used to analyze the data. The significance level was determined as $P < .05$ for the interpretation of the data obtained from the research.

3. 5. 2 Qualitative Data Analysis

The research data were subjected to qualitative content analysis. According to Yıldırım and Şimşek, 2008, as cited in Buyukozturk et al., (2012), content analysis was performed to identify the data and to reveal the facts that might be hidden within the data. Content analysis was gathering data within the framework of similar concepts and themes, organizing and interpreting in a way that the reader could understand could be found in figure 12.

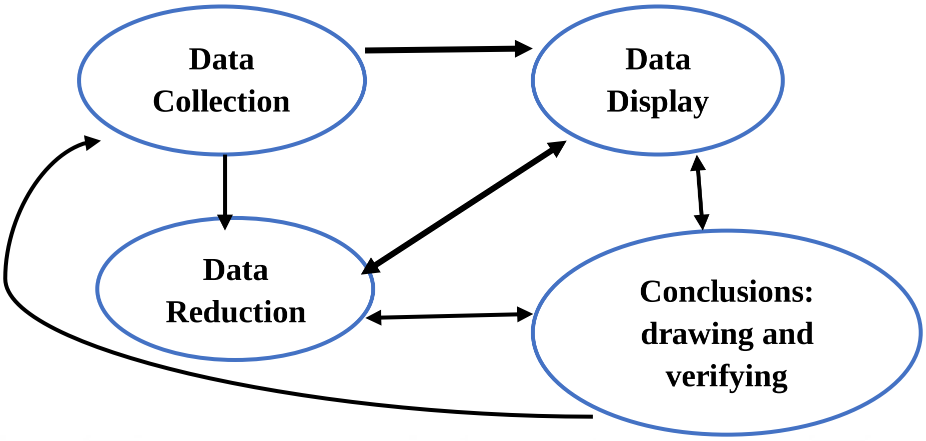

Figure 12 ***The Iterative Qualitative Data Analysis Model (Adopted from Miles and Huberman, 1994, p.12)***

According to Glesne (2012), the primary purpose in the analysis of qualitative data was to create themes and patterns using the data instead of digitizing the data obtained. Codes were the most important tools in the creation of themes and patterns. Reading the transcripts obtained by tools such as coding, observation, and interviewing, and revealing words or groups of words that were important for the research in the context of the theoretical framework of the research. As the Saldana mentioned (2009), the most important step after coding was to choose the categories and themes that best represent the facts that were desired to be researched or measured.

3.6 Reliability & Validity

Validity is another indicator that shows "how stable and consistent the data collection instruments". According to Mertler and Charles (2005), internal validity explains the extent of which a study can make inferences about the causal relationship between dependent and independent variables. Jiménez-Buedo and Miller (2010) also stated that if an experiment was not internally valid, then we could not say that the effect we observed was caused by the treatment given in the experiment. They also added that there were some major threats of internal validity were records, testing, maturation, selection bias, and unreliable instrumentation.

Within the scope of the present research, all sound recording data obtained were transcribed and written, read by the researcher and thesis advisor, coded, categorized, themed, and finally interpreted. To supply the reliability of the results obtained, the researcher reconsidered the records she had kept during the interviews and observations, and received the confirmation of the participants and the opinions of four different experts. A number of differences arising were discussed among experts to decide the final code, categories, and themes.

Within a test, maturation referred to the impact of time as a variable. When a study takes place over a period of time over which participants might have gradually changed in any way (growing older, becoming tired), therefore it might not be possible to rule out that changes found in the study were simply due to the impact of time. As the students were between 12-13 years old and were all 6th-grade state school students, and the treatment only took 6 weeks, we could say maturation effect was at minimum level. Additionally, the study's validity was supported by data triangulation. Triangulation was required to confirm the results achieved by using different data collection tools in the research (Yıldırım & Şimşek, 2008, as cited in Yurtseven, 2016).

Finally, the English proficiency level of the experimental and control group was nearly equal, which in this study also helped to establish a clear external validity but the sample size was very small, had an influence on external validity that made it more difficult to generalize the findings of the analysis.

Reading comprehension texts and questions were examined by the teachers and took their opinion while deciding the content to increase the face validity of the research. Before the researcher's application, the teachers who observed the lessons in the experimental and control groups were trained and how they should apply the checklist while observing.

After preparing the questionnaires for the experiment, they were presented to the experts' opinions and a pilot application was made by making arrangements in line with the suggestions. By analyzing the pilot application data, it was examined whether there were expressions that would cause different understandings, whether the items were perceived in the same way by the students, and whether the questionnaires were suitable for the grade levels.

KR-20 was used in the reliability analysis of the tests and internal consistency coefficients were calculated (Kan, 2016). Cronbach Alpha reliability coefficient was calculated in analyze of the survey reliability analysis used as pretest and posttest. In case KR-20 and Cronbach Alpha reliability coefficients were *0.70* and above; it was possible to say that the questions measure the same feature, gave similar and consistent results, they were homogeneous, separate the test group, the items were distinctive, the scores were free of accidental errors and the measurement process was sensitive and reliable (Oktaylar, 2012).

Table 26

Validity in Qualitative Data Analysis

Feature	Description	Application in Current Study
Internal Validity	Credibility: Credibility of the findings	Prolonged Interaction Researcher Bias Participant confirmation Triangulation
External Validity	Transferability: Transferability of results to other people and situations	Detailed presentation of the environment Detailed presentation of the participants
Reliability	Trustworthiness: When the study is repeated with similar participants in similar conditions, are the results similar?	Literature Detailed introduction of research methods Triangulation Another researcher's review of processes and results
Objectivity	Confirmability: Neutrality	Reducing researcher bias Triangulation

The methods used to increase credibility within the scope of the current study according to the features in Table 26 were explained in the next section. Reliability and validity in focus group interviews, field notes, and reflective notes were another concern. Maintaining reliability and validity was of utmost importance for a researcher to conduct a study with accurate results and they also claimed that (1) credibility, (2) transferability, (3) reliability, and (4) confirmability were used in the validity and reliability of the current research (Ary, Jacobs, Irvine, & Walker, 2010, as cited in Yurtseven, 2016). If research had credibility, this means that it was clear, consistent, and verified. In this study, to increase the credibility of the research these methods were used prolonged engagement, referential adequacy, triangulation, expert review, persistent observation, and confirmation of the participants (Lincon & Guba, 1985, as cited in Yurtseven, 2016).

Prolonged engagement was about spending enough time in the research area to achieve certain goals (Lincoln & Guba, 1985). The interaction between the researcher and the participants continued for 7 weeks in the fall semester of the 2019-2020 academic year. The data collection tools used for 7 weeks were also used continuously, following a cyclic order. For example, teacher reflective journals, researcher field notes were collected every week. In other words, each teacher wrote six reflective journals. The researcher's field notes were reflections written after each week. The researcher took notes during the experiment when she deemed necessary. By conducting the things mentioned above, the researcher tried to supply prolonged interaction. The researcher should collect the data through observation, field notes, reflective journals, and interviews with prolonged interaction (Lincon & Guba, 1985, as cited in Yıldırım & Simsek, 2005). In the current research, all data whose transcription was completed as of January 2020 were read by the researcher many times and it was decided in this process how the data could be reported and interpreted.

Data triangulation was also important. According to Cresswell (2012), triangulation could be achieved by collecting data from different people (for example, teacher and student), using different types of data (field notes, focus group interviews, and reflective journals), or using different methods of data collection (observation and interview). In this way, the researcher had the opportunity to support the results obtained in their research with the information they obtained from different sources and using different methods (Creswell, 2012). In this study, data was collected from participant students, teachers, and the researcher. Throughout the study different types of data collection occurred such as field notes of the researcher, four focus group interviews with 20 volunteer participant students, and reflective journals of the 4 participant teacher journals.

The researcher should achieve the results obtained by constantly comparing, interpreting, and conceptualizing each other (Lincon & Guba, 1985, as cited in Yıldırım & Simsek, 2005). In this study, quantitative and qualitative research results were compared, interpreted, and conceptualized to increase the validity and reliability of the researches.

Researcher bias is another concern in researches. Miles, Huberman, and Saldana (2014) suggested that the researcher explain his or her beliefs. In the current study, the beliefs and assumptions of the researcher on the subject were discussed under the title of the researcher role. The variation to be conveyed in the following sections also enabled the researcher to re-evaluate the prejudices and assumptions regarding the subject through the data collected from many sources throughout the process.

Sound recording of the application process was recorded and an independent observer observed the experimental process with the checklist. The fact that the researcher and the experimental practitioner are the same people is another important point that increases the treatment fidelity. In the study, the experimental practitioner and researcher are the same people.

Confirming the data obtained by the participants by the research is important in terms of understanding to what extent the results achieved represent the truth (Yıldırım & Şimşek, 2004). Confirmation of the participant (1), after the data collection, the researcher met the participants, summarized the data and received their opinions (2), after a while after the data collection, the confirmation meeting with the participants was made with individual interviews after the data collection (Erlandson et al., 1993, as cited in Yıldırım & Şimşek, 2013). Within the scope of the current research, a confirmation meeting was held with the participating teachers and students as a group. At the meeting, the topics highlighted in the research were conveyed to the participants. The teachers and participant students approved the titles that emerged in line with the findings.

Handling inadequate results that reduce the credibility of qualitative research, misinterpretation of data. In order to minimize errors, it was recommended to examine certain dimensions of the study by another researcher who is familiar with the overall research and qualitative research methods (Creswell, 2012). In the current study, the research was examined by three experts. These experts include the design of the research, the presentation, and interpretation of the findings. Field experts gave feedback to the researcher on the subjects, necessary arrangements were made within the scope of the research.

In quantitative research reliability and validity were important too. Treatment fidelity should be checked in conducting an experimental study. Treatment fidelity is the determination of whether the conditions in the experimental process are in accordance with what the researcher had previously defined (Gal, Gal, & Borg, 2007). A checklist was prepared in order to determine whether the processes determined in the experimental research plan were carried out during the implementation process.

Introducing the environment and the participants in detail was another important factor. In qualitative studies, it was essential to describe the participants and the environments in detail in providing the transferability principle related to external validity (Sharts-Hopko, 2002, as cited in Yurtseven, 2016). For this reason, the researcher was responsible for explaining the research process in detail. In order to ensure transferability in the current study, the participants and the environment participating in the research were described in detail.

3.7 Limitations

The data were collected in this experiment with a scale, a questionnaire, assessments, a reflective journal, interviews with the participants, and observation notes. Though this analysis was completed its objectives clearly and with comprehensive data collection and assessment procedures, certain limits have to be considered in addition with respect to its implementation. The number of participants in this study was limited *(N=96)* and were not enough to make generalizations. Moreover, the research was conducted with only 6th-grade students in a state school and analyzed in one course only. The results might illustrate differences if the study had been applied in more than one school, particularly in higher grades, or if the screen reading was applied in another course, which would also increase the study's external validity. Finally, some of the control group participants could have had the opportunity to access the storybooks to read, which might have an adverse effect on the study's comparative analysis. The results of this study need to be be considered suggestive rather than conclusive, and efforts should be made to replicate and extend those results into future studies.

It is worth noting some limitations of the present analysis. This implementation did not permit us to analyze whether the effect of the medium on the understanding of electronic reading in EFL classes depended on the genre of text as we only analyzed non-fiction stories. Since meta-analyzes conducted with studies that mainly examined adults indicated that the impact of the medium on reading comprehension appears to be greater for expository than for narrative texts (Clinton, 2019; Delgado et al., 2018), the possible moderating role of text genre among children remained a significant issue for future study. Second, the results of the recent research indicated that the medium's influence was unrelated to reading ability, but only two basic and brief tasks (a multiple-choice reading test) were used to preliminarily assess reading abilities.

Chapter 4

Findings

4.1 Overview

In this chapter, the findings of the recent research were shown. The purpose was to investigate the effects of gamified reading, personalized reading, pdf reading, and printed reading on reading comprehension skills, motivation, digital attitude, and reading time of EFL students at a state secondary school in Turkey with the reflections of participant students and teachers about the issue. The results of the reading motivation pre-post-tests and the reading comprehension scores, digital attitude pre-post-test, reading time, the focus group interviews, and the teachers' reflective journals, researchers field notes were presented simultaneously.

4.2 Quantitative Data Analysis

The data collected through questionnaires, reading comprehension tests were analyzed using SPSS 22. The continuous data were presented with a mean (M) and standard deviation (SD). The data obtained in the research were analyzed using SPSS (Statistical Package for Social Sciences) for Windows 22.0 program. Number, percentage, average, and standard deviation were used as descriptive statistical methods in the evaluation of the data. The distribution of descriptive features by groups were compared with chi-square analysis. Kruskal Wallis test was used to compare quantitative continuous data between groups (Creswell, 2012). After the Kruskal Wallis test, the Man Whitney-U test was used as a complement to determine the differences between groups. The change between repeated measurements in the group was analyzed with the Wilcoxon test.

4.2.1 Findings of Overall Descriptive Statistics of Students

For the purposes of this study, both quantitative and qualitative data collection instruments will be used. The quantitative data will be collected via the Reading

Motivation Questionnaire and the pre and post-test scores of the students. The data gathered from each instrument were tabulated and analyzed statistically using SPSS (Statistical Package for Social Sciences) 22.0 version for Windows. Finally, these scores were entered into SPSS and analyzed using Kruskal Wallis, Man Whitney U tests, and Wilcoxon test.

4.2.2 Findings of the Influence of Different Reading Environments on Reading Motivation

This part shows the overall reading motivation of the experimental and control groups. A comparative analysis was made and the between-group statistics were displayed to discover whether there was a difference between the reading motivation scores of the groups due to the different reading environments: printed book reading, gamified e-book reading, personalized e-book reading, and pdf e-book reading.

Table 27

Examination of Reading Motivation Measurement Invariance at Groups

Groups	Personalized E-book Reading Group (n=24)		PDF E-book Reading Group (n=24)		Gamified E-book Reading Group (n=24)		Printed Book Reading Group (n=24)		KW	P	D
Pre Self-efficacy	Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd			
	2.80	0.72	2.73	0.67	2.82	0.73	2.71	0.63	10.74	0.11	
Post Self-efficacy	3.60	0.33	2.86	0.70	3.46	0.35	2.87	0.46	44.68	0.00*	1 > 2 1 > 4 3 > 2 3 > 4
Pre Competition	2.91	0.67	2.97	0.84	2.94	0.65	2.90	0.00	10.87	0.12	
Post Competition	3.11	0.62	2.97	0.74	3.85	0.83	2.17	0.23	50.13	0.00*	3 > 1 1 > 4 3 > 2 2 > 4 3 > 4

Table 27 (cont.d)

Groups	Personalized E-book Reading Group (n=24)		PDF E-book Reading Group (n=24)		Gamified E-book Reading Group (n=24)		Printed Book Reading Group (n=24)		KW	P	D
Pre Curiosity	2.41	0.79	2.32	0.54	2.37	0.71	2.36	0.22	10.43	0.32	
Post Curiosity	2.94	0.53	2.14	0.48	2.92	0.33	2.14	0.19	55.39	0.00*	1 > 2 1 > 4 3 > 2 3 > 4
Pre Compliance	3.01	0.41	3.06	0.42	3.02	0.42	3.02	0.42	10.88	0.11	
Post Compliance	3.55	0.32	3.10	0.77	3.02	0.73	2.43	0.11	33.26	0.00*	1 > 3 1 > 4 2 > 4 3 > 4
Pre Social	2.76	0.73	2.72	0.59	2.76	0.63	2.75	0.00	10.11	0.01	
Post Social	3.05	0.38	3.01	0.54	3.09	0.48	2.81	0.11	13.89	0.00*	1 > 4 2 > 4 3 > 4

Table 27 (cont.d)

Groups	Personalized E-book Reading Group (n=24)		PDF E-book Reading Group (n=24)		Gamified E-book Reading Group (n=24)		Printed Book Reading Group (n=24)		KW	P	D
Pre Recognition	3.06	0.50	3.00	0.47	3.06	0.38	3.07	0.35	10.02	0.11	
Post Recognition	3.36	0.51	3.06	0.49	3.56	0.41	2.4	0.3	44.02	0.00*	1 > 2 1 > 4 3 > 2 2 > 4 3 > 4
Pre General Reading Motivation	2.50	0.25	2.59	0.30	2.31	0.24	2.43	0.23	10.15	0.23	
Post General Reading Motivation	3.26	0.27	2.89	0.47	3.31	0.2	2.43	0.13	51.15	0.00*	1 > 2 1 > 4 3 > 2 2 > 4 3 > 4

*p<,05 Kruskall Wallis-H Test

Table 27 indicates there was no statistically significant difference between the groups with regard to the pre-tests of reading motivation *($P = 0.20 > 0.5$).*

Post-self-efficacy scores of the students differed significantly according to the groups *($\chi^2(3) = 44.68$, $P = 0.00 < 0.05$).* The reason of this was personalized e-book reading groups post-self-efficacy scores *($\bar{x} = 3.60$)* were higher than printed book reading groups post-self-efficacy scores *($\bar{x} = 2.86$).* Personalized e-book reading groups post-self-efficacy scores *($\bar{x}=3.60$)* were higher than printed book reading groups post-self-efficacy scores *($\bar{x} = 2.57$).* Gamified e-book reading groups post-self-efficacy scores *($\bar{x} = 3.46$)* were higher than PDF e-book reading groups post self-efficacy scores *($\bar{x} = 2.86$).* Gamified e-book reading groups post-self-efficacy scores *($\bar{x} = 3.46$),* were higher than printed book reading groups post-self-efficacy scores *($\bar{x} = 2.57$).*

Post-competition scores of the students differed significantly according to the groups *($\chi^2(3) = 50.13$, $P = 0.00 < 0.05$).* The reason of this was gamified e-book reading groups post-competition scores *($\bar{x} = 3.85$)* were higher than personalized e-book reading groups post-competition scores *($\bar{x} = 3.11$).* Personalized e-book reading groups post-competition scores *($\bar{x} = 3.11$)* were higher than printed book reading groups post-competition scores *($\bar{x} = 2.17$).* Gamified e-book reading groups post-competition scores *($\bar{x} = 3.85$)* were higher than PDF e-book reading groups post-competition scores *($\bar{x} = 2.97$).* PDF e-book reading groups post-competition scores *($\bar{x} = 2.97$)* were higher than printed book reading groups post-competition scores *($\bar{x} = 2.17$).* Gamified e-book reading groups post-competition scores *($\bar{x} = 3.85$)* were higher than printed book reading groups post-competition scores *($\bar{x} = 2.17$).*

Post-curiosity scores of the students differed significantly according to the groups *($\chi^2(3) = 55.39$, $P = 0.00 < 0.05$).* The reason of this was gamified e-book reading groups post-curiosity scores *($\bar{x}=2.94$)* were higher than PDF e-book reading groups post-curiosity scores *($\bar{x}= 2.14$).* Personalized e-book reading groups post-curiosity scores *($\bar{x} = 2.94$)* were higher than printed book reading groups post-curiosity scores ($\bar{x} = 2.14$). Gamified e-book reading groups post-curiosity scores *($\bar{x}= 2.92$)* were higher than PDF e-book reading groups post-curiosity scores *($\bar{x}= 2.14$).* Gamified e-book reading groups post-curiosity scores *($\bar{x} = 2.92$)* were higher than printed book reading groups post-curiosity scores *($\bar{x} = 2.14$).*

Post-compliance scores of the students differed significantly according to the groups *($\chi^2(3) = 33.26, P = 0.00 < 0.05$)*. The reason of this was personalized e-book reading groups post-compliance scores *($\bar{x} = 3.55$)* were higher than gamified e-book reading groups post compliance scores *($\bar{x} = 3.02$)*. Personalized e-book reading groups post-compliance scores *($\bar{x} = 3.55$)* were higher than printed book reading groups post-curiosity scores *($\bar{x} = 2.43$)*. PDF e-book reading groups post-compliance scores *($\bar{x}= 3.10$)* were higher than printed book reading groups post-compliance scores *($\bar{x}= 2.43$)*. Gamified e-book reading groups post compliance scores *($\bar{x} = 3.02$)* were higher than printed book reading groups post-curiosity scores *($\bar{x} = 2.43$)*.

Post-social scores of the students differed significantly according to the groups *(χ^2 $(3) = 13.89, P=0.00 < 0.05$)*. The reason of this was personalized e-book reading groups post-social scores *($\bar{x} = 3.05$)* were higher than printed book reading groups post-curiosity scores *($\bar{x} = 2.81$)*. PDF e-book reading groups post-social scores *($\bar{x} = 3.21$)* were higher than printed book reading groups post-social scores *($\bar{x} = 2.81$)*. Gamified e-book reading groups post-social scores *($\bar{x} = 3.09$)* were higher than printed book reading groups post-social scores *($\bar{x} = 2.81$)*.

Post-recognition scores of the students differed significantly according to the groups *($\chi^2(3) = 44.02, P = 0.00 < 0.05$)*. The reason of this was gamified e-book reading groups post-recognition scores *($\bar{x} = 3.36$)* were higher than PDF e-book reading groups post-recognition scores *($\bar{x} = 3.06$)*. Personalized e-book reading groups post-recognition scores *($\bar{x} = 3.36$)* were higher than printed book reading groups post-recognition scores *($\bar{x} = 2.47$)*. Gamified e-book reading groups post-recognition scores *($\bar{x} = 3.56$)* were higher than PDF e-book reading groups post-recognition scores *($\bar{x} = 3.06$)*. PDF e-book reading groups post-recognition scores *($\bar{x} = 3.06$)* were higher than printed book reading groups post-recognition scores *($\bar{x} = 2.47$)*. Gamified e-book reading groups post-recognition scores *($\bar{x} = 3.56$)* were higher than printed book reading groups post-recognition scores *($\bar{x}=2.47$)*.

Post-general reading motivation scores of the students differed significantly according to the groups *($\chi^2(3) = 51.15, P = 0.00 < 0.05$)*. The reason of this was personalized e-book reading groups post-general reading motivation scores *($\bar{x} = 3.26$)* were higher than PDF e-book reading groups post-general reading motivation scores *($\bar{x} = 2.89$)*. Personalized e-book reading groups post-general reading motivation scores

($\bar{x}$ = 3.26) were higher than printed book reading groups post-general reading motivation scores *($\bar{x}$ = 2.43).* Gamified e-book reading groups post-general reading motivation scores *($\bar{x}$ = 3.31)* were higher than PDF e-book reading groups post-general reading motivation scores *($\bar{x}$ = 2.89).* PDF e-book reading groups post-general reading motivation scores *($\bar{x}$ = 2.89)* were higher than PDF e-book reading groups post-general reading motivation scores *($\bar{x}$ = 2.43).* Gamified e-book reading groups post-general reading motivation scores *($\bar{x}$ = 3.32)* were higher than printed book reading groups post-general reading motivation scores.

A Wilcoxon test showed a statistically significant difference in pre-self-efficacy scores of the students in the personalized e-book reading group and post-test results *($Z = -3.74$; $P = 0.00 < 0.05$).* Pre-self-efficacy mean was *($x = 2.90$)* lower than post-self-efficacy mean *($x=3.60$)*.

To decide whether the pre-curiosity and post-curiosity averages differ significantly, Wilcoxon test for paired groups was performed and the difference between the averages was found statistically significant *($Z = -3.84$; $P = 0.00 < 0.05$).* Pre-curiosity mean *($x = 2.47$)* was lower than post-curiosity mean *($x = 2.94$).*

Wilcoxon test revealed a statistically significant increase in the scores in pre-test compliance and post-test compliance *($Z = -3.23$; $P = 0.00 < 0.05$).* There was an increase in the test scores of the students from pre-test compliance *($x = 3.31$)* to the post test *($x = 3.55$)* indicating a large effect size of $r = 49.51$ (Cohen, 1988).

Wilcoxon test for paired groups was conducted to understand whether the pre-social and post-social averages showed a significant difference and the difference between the averages was *($Z = -2.23$; $P = 0.02 < 0.05$).* Pre-social average *($x = 2.76$)* was lower than post-social average *($x = 3.05$).*

4.2.3 Findings of the influence of Gamified Electronic Reading, Personalized E-book Reading, PDF E-book Reading and Printed Book Reading on Digital Attitude Levels.

This part shows the overall e-book reading attitude of the experimental and control groups. A comparative analysis was made and the between-group statistics were displayed to discover whether there was a statistically significant difference between the e-book reading attitude scores of the groups due to the different reading environments: printed book reading, gamified e-book reading, personalized e-book reading, and pdf e-book reading.

Table 28

Examination of Digital Attitude Measurement Invariance at Groups

Groups	Personalized E-book Reading Group (n=24)		PDF E-book Reading Group (n=24)		Gamified E-book Reading Group (n=24)		Printed Book Reading Group (n=24)		KW	P	D
	Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd			
Pre Academic Digital	3.08	0.25	3.95	0.76	4.85	0.32	3.45	0.79	13.83	0.00*	3 > 1 3 > 4
Post Academic Digital	4.89	0.64	5.18	0.54	5.70	0.38	3.60	0.79	29.97	0.00*	3 > 1 1 > 4 3 > 2 2 > 4 3 > 4
Pre Recreative Digital	3.00	0.48	2.76	0.83	3.15	0.52	2.04	0.26	37.60	0.00*	1 > 4 2 > 4 3 > 4
Post Recreative Digital	3.55	0.30	2.80	0.88	3.68	0.28	2.38	0.42	49.08	0.00*	1 > 2 1 > 4 3 > 2 3 > 4
Pre Academic Paper	2.56	0.88	2.26	0.70	2.73	0.64	1.66	0.00	30.06	0.00*	1 > 4 3 > 2 2 > 4 3 > 4
Post Academic Paper	2.69	0.80	2.25	0.69	2.93	0.45	1.73	0.13	40.49	0.00*	1 > 4 3 > 2 2 > 4 3 > 4
Pre Recreative Paper	3.33	2.09	3.29	2.03	4.33	2.12	2.45	2.02	8.75	0.03*	3 > 4
Post Recreative Paper	5.29	0.90	4.79	1.14	5.29	1.16	2.45	2.02	26.98	0.00*	1 > 4 2 > 4 3 > 4
Pre General E-book reading Attitude	3.70	0.82	4.22	1.13	4.43	1.06	3.64	1.25	9.21	0.02*	3 > 1 2 > 4 3 > 4
Post General E-book reading Attitude	4.51	0.51	4.85	0.60	4.80	0.71	4.08	1.01	9.77	0.02*	2 > 4 3 > 4

Kruskall Wallis-H Test

Table 28 displays that there was statistically significant difference between the groups with regard to the pre-academic digital scores and post-academic digital scores part of the e-book reading attitude questionnaire ($\chi^2(3) = 13.83, P = 0{,}00 < 0.05$). The reason for this difference was that gamified e-book reading groups pre-academic digital scores *($\bar{x}$ = 4.85)* were higher than personalized e-book reading groups pre-academic digital scores *($\bar{x}$ = 3.08)*. Gamified e-book reading groups pre-academic digital scores *($\bar{x}$ = 4.85)* were higher than printed book reading groups pre-academic digital scores *($\bar{x}$ = 3.45)*.

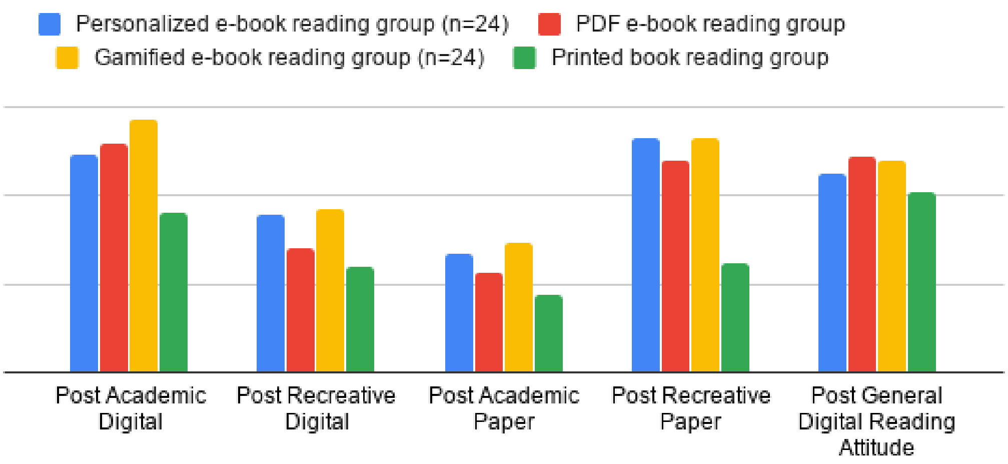

Figure 13 ***Comparison of the Pre-Post Test Digital Attitude Scores of the Groups***

Pre-recreative digital scores of the students differed significantly according to the groups *($\chi^2(3)$ = 37.60, P = 0.00 < 0.05)*. The reason for this difference was that personalized e-book reading groups pre-recreative digital scores *($\bar{x}$ = 3.00)*, were higher than printed book reading groups pre-recreative digital scores *($\bar{x}$ = 2.04)*. Pre-recreative digital scores of the PDF e-book reading groups *($\bar{x}$ = 2.76)* were higher than printed book reading groups pre-recreative digital scores *($\bar{x}$ = 2.04)*. Gamified e-book reading groups pre-recreative digital scores *($\bar{x}$ = 3.15)* were higher than printed book reading groups pre-recreative digital scores *($\bar{x}$ = 2.04)*.

Pre-academic paper scores of the students differed significantly according to the groups ($\chi^2(3) = 30.06, P = 0.00 < 0.05$). The reason for this difference was that personalized e-book reading groups pre-academic paper scores *($\bar{x}$ = 2.56)* were higher than printed book reading groups pre-academic paper scores *($\bar{x}$ = 1.66)*. Gamified e-book reading groups pre-academic paper scores *($\bar{x}$ = 2.73)* were higher than PDF e-book reading groups pre-academic paper scores *($\bar{x}$ = 2.26)*. PDF e-book reading groups pre-academic paper scores *($\bar{x}$ = 2.26)* were higher than printed book reading groups pre-academic paper scores *($\bar{x}$ = 1.66)*. Gamified e-book reading groups pre-academic paper scores *($\bar{x}$ = 2.73)* were higher than printed book reading groups pre-academic paper scores.

Pre-recreative paper scores of the students differed significantly according to the groups *($\chi^2(3)$ = 8.75, P=0.03 < 0.05)*. The reason for this difference was that gamified e-book reading groups pre-recreative paper scores *($\bar{x}$ = 4.33)* were higher than printed book reading groups pre-recreative paper scores *($\bar{x}$ = 2.45)*.

Pre-general reading attitude scores of the students differed significantly according to the groups *($\chi^2(3)$ = 9.21, P = 0.02 < 0.05)*. The reason for this difference was that gamified e-book reading groups pre-general reading attitude scores *($\bar{x}$=4.43)* were higher than personalized e-book reading groups pre-general reading attitude scores *($\bar{x}$=3.70)*. PDF e-book reading groups pre-general reading attitude scores *($\bar{x}$ = 4.22)* were higher than printed book reading groups pre-general reading attitude scores *($\bar{x}$ = 3.64)*. Gamified e-book reading groups pre-general reading attitude scores *($\bar{x}$=4.43)* were higher than printed book reading groups pre-general reading attitude scores *($\bar{x}$ = 3.64)*.

Post-academic digital scores of the students differed significantly according to the groups *($\chi^2(3)$ = 29.97, P = 0.00 < 0.05)*. The reason for this difference was that gamified e-book reading groups post-academic digital scores *($\bar{x}$=5.70)* were higher than personalized e-book reading groups post-academic digital scores *($\bar{x}$=4.89)*. Personalized e-book reading groups academic digital scores *($\bar{x}$ = 4.89)*, were higher than printed book reading groups post-academic digital scores *($\bar{x}$=3.45)*. Gamified e-book reading groups post-academic digital scores *($\bar{x}$ = 5.70)* were higher than PDF e-book reading groups post-academic digital scores *($\bar{x}$ = 5.18)*. PDF e-book reading groups post-academic digital scores *($\bar{x}$ = 5.18)* were higher than printed book reading groups post-academic digital scores ($\bar{x}$ = 3.45). Gamified e-book reading groups post-academic digital scores *($\bar{x}$ = 5.70)*, were higher than printed book reading groups post-academic digital scores *($\bar{x}$ = 3.45)*.

Post-recreative digital scores of the students differed significantly according to the groups *($\chi^2(3)$= 49.08, P = 0.00 < 0.05)*. The reason for this difference was that personalized e-book reading groups post-recreative digital scores *($\bar{x}$ = 3.55)* were higher than PDF e-book reading groups post-recreative digital scores *($\bar{x}$=2.80)*. Personalized e-book reading groups post-recreative digital scores *($\bar{x}$=3.55)* were higher than PDF e-book reading groups post-recreative digital scores *($\bar{x}$=2.38)*. Gamified e-book reading groups post-recreative digital scores *($\bar{x}$=3.68)* were higher than PDF e-book reading groups post-recreative digital scores *($\bar{x}$=2.80)*. Gamified e-book reading groups post-recreative digital scores *($\bar{x}$=3.68)* were higher than printed book reading groups post -recreative digital scores *($\bar{x}$=2.38)*.

Post-academic paper scores of the students differed significantly according to the groups *($\chi^2(3)$=40.49, P = 0.00 < 0.05)*. The reason of this difference was that personalized e-book reading groups post-academic paper scores *($\bar{x}$=2.69)* were higher than printed book reading groups post-academic paper scores *($\bar{x}$=1.73)*. Gamified e-book reading groups post-academic paper scores *($\bar{x}$=2.93)*, were higher than PDF e-book reading groups post-academic paper scores *($\bar{x}$=2.25)*. PDF e-book reading groups post-academic paper scores *($\bar{x}$=2.25)* were higher than printed book reading groups post-academic paper scores *($\bar{x}$=1.73)*. Gamified e-book reading groups post-academic paper scores *($\bar{x}$=2.93)* were higher than printed book reading groups post-academic paper scores *($\bar{x}$=1.73)*.

Post-recreative paper scores of the students differed significantly according to the groups *($\chi^2(3)$=26.98, P = 0.0 < 0.05)*. The reason of this difference was that personalized e-book reading groups post-recreative paper scores *($\bar{x}$=5.29)* were higher than printed book reading groups post-recreative paper scores *($\bar{x}$=2.45)*. PDF e-book reading groups post-recreative paper scores *($\bar{x}$=4.79)* were higher than printed book reading groups post-recreative paper scores *($\bar{x}$=2.45)*. Gamified book reading groups post-recreative paper scores *($\bar{x}$=5.29)* were higher than printed book reading groups post-recreative paper scores *($\bar{x}$=2.45)*.

Post-general reading attitude scores of the students differed significantly according to the groups *($\chi^2(3)$=9.77, P = 0.00 < 0.05)*. The reason for this difference was that PDF e-book reading groups post-general reading attitude scores *($\bar{x}$=4.85)* were higher than the printed book reading groups post-general reading attitude scores

($\bar{x}$=4.08). Gamified book reading groups post-general reading attitude scores *($\bar{x}$=4.80),* were higher than the printed book reading groups post-general reading attitude scores *($\bar{x}$=4.08).*

Table 29

Comparison of Digital Atitude Pre- Post Test Scores of Personalized E-book Reading Group Experimental Group Wilcoxon Test Results

Sources	PRE		POST		n	Z	P
	Mean	Sd	Mean	Sd			
Academic Digital	3.08	1.25	4.89	0.64	24	-4.21	0.00*
Recreative Digital	3.00	0.48	3.55	0.30	24	-3.65	0.00*
Academic Paper	2.56	0.88	2.69	0.80	24	-3.00	0.00*
Recreative Paper	3.33	2.09	5.29	0.90	24	-3.31	0.00*
General E-book Reading Attitude	3.70	0.82	4.51	0.51	24	-4.29	0.00*

*p<,05; S.D: Standart Deviation

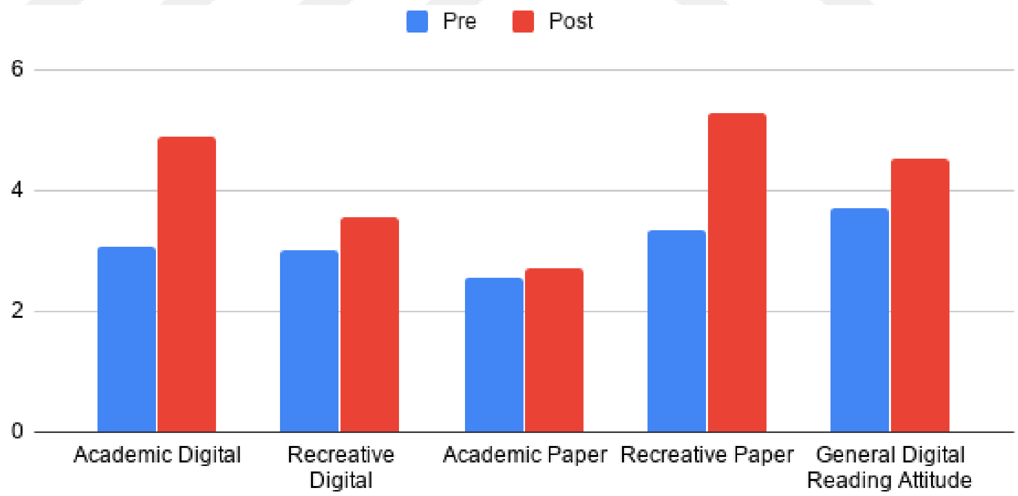

Figure 14 ***Comparison of the Pre-Post Digital Attitude Scores of Personalized E-book Reading Group***

As a result of the Wilcoxon test for paired groups performed to determine whether the pre-academic digital and post-academic digital averages differed significantly, the difference between the arithmetic averages was found statistically significant *(Z=-4.21; P = 0.00 < 0.05)*. Pre-academic digital mean *(x=3.08)* was lower than post-academic digital mean *(x=4.89)*.

As a result of the Wilcoxon test for paired groups performed to determine whether the pre-recreative digital and post-recreative digital averages differ significantly, the difference between the averages was statistically significant *(Z=-3.65; P = 0.00 < 0.05)*. Pre-recreative digital mean *(x=3.00)* was lower than post-recreative digital mean *(x=3.56)*.

As a result of the Wilcoxon test for paired groups performed to determine whether the averages of pre-academic paper and post-academic paper differed significantly, the difference between the averages was found statistically significant *(Z=-3.00; P =0.00 < 0.05)*. Pre-academic paper average *(x=2.56)* was lower than post-academic paper average *(x=2.69)*.

As a result of the Wilcoxon test for paired groups performed to determine whether the mean values of pre-recreative paper and post-recreative paper differed significantly, the difference between the averages was found statistically significant *(Z=-3.31; P = 0.00 < 0.05)*. Pre-recreative paper average *(x=3.33)* was lower than post-recreative paper average *(x=5.22)*.

As a result of the Wilcoxon test for paired groups performed to determine whether the Pre-general e-book reading attitude and post-general e-book reading attitude averages differed significantly, the difference between the arithmetic averages was found statistically significant *(Z=-4.29; P = 0.00 < 0.05)*.

Pre-general e-book reading attitude average *(x=3.70)* was lower than post-general e-book reading attitude average *(x=4.51)*. The difference between the averages was not statistically significant as a result of the Wilcoxon test for paired groups performed to determine whether the mean of pre-competition and post-competition, pre-recognition and post-recognition, pre-general reading motivation and post general reading motivation varied significantly *(p>0.05)*.

Table 30

Comparison of Reading Motivation Pre- Post-test Scores of PDF E-book Reading Group Experimental Group Wilcoxon Test Results

Ölçümler	PRE		POST		N	Z	P
	Mean	Sd	Mean	Sd			
Self-efficacy	2.83	0.67	2.86	0.70	24	-1.34	0.18
Competition	2.97	0.84	2.97	0.84	24	0.00	1.00
Curiosity	2.12	0.54	2.14	0.48	24	-0.81	0.41
Compliance	3.06	0.77	3.10	0.77	24	-1.34	0.18
Social	2.92	0.59	3.21	0.54	24	-2.75	0.00*
Recognition	3.06	0.49	3.06	0.49	24	0.00	1.00
General Reading Motivation	2.89	0.47	2.89	0.47	24	0.00	1.00

*p<,05; S.D: Standart Deviation

As a result of the Wilcoxon test for paired groups performed to determine whether the mean scores of the pre-social and post-social scores differed significantly, was found statistically significant *($Z=-2.75$; $P = 0.00 < 0.05$).*

Pre-social score average in PDF e-reading experimental group *($x=2.92$)* was lower than post-social scores *($x=3.21$).*

Table 31

Comparison of Digital Attitude Pre- Post-test Scores of PDF E-book Reading Group Experimental Group Wilcoxon Test Results

Sources	PRE		POST		N	Z	P
	Mean	Sd	Mean	Sd			
Academic Digital	3.95	1.76	5.18	0.54	24	-3.18	0.00*
Recreative Digital	2.76	0.83	2.80	0.88	24	-1.34	0.18
Academic Paper	2.26	0.70	2.25	0.69	24	-1.00	0.31
Recreative Paper	3.29	2.03	4.79	1.14	24	-3.45	0.00*
General E-book Reading Attitude	4.22	1.13	4.85	0.60	24	-3.48	0.00*

*p<,05; S.D: Standart Deviation

As a result of the Wilcoxon test for paired groups performed to determine whether the pre-academic digital and post-academic digital averages differed significantly, the difference between the averages was found statistically significant *(Z=-3.18; P = 0.00 < 0.05)*. Pre-academic digital averages *(x=3.95)* was lower than post-academic digital averages *(x=5.1)*.

As a result of the Wilcoxon test for paired groups performed to determine whether the pre-recreative paper and post-recreative paper averages differed significantly, the difference between the arithmetic averages was statistically significant *(Z=-3.45; P = 0.00 < 0.05)*. Pre-recreative paper average *(x=3.29)* was lower than post-recreative paper average *(x=4.79)*.

As a result of the Wilcoxon test, the difference between the arithmetic averages was found statistically significant for paired groups performed to determine whether the pre-general e-book reading attitude and post-general e-book reading attitude averages differed significantly *(Z=-3.48; P = 0.00 < 0.05)*. Pre general e-book reading attitude average *(x=4.22)* was lower than post general e-book reading attitude average *(x=4.85)*. Pre-self-efficacy and post-self-efficacy, pre-competition and post-competition, pre-curiosity and post-curiosity, pre-compliance and post-compliance, pre-recognition and post-recognition, pre-general reading motivation with post-general reading motivation, pre-recreative digital with post-recreative was compared to see the difference between arithmetic averages was not statistically significant *(P > 0.05).*

Table 32

Comparison of Reading Motivation Pre- Post-test scores of Printed E-book Reading Group Experimental Group Wilcoxon Test Results

Sources	PRE		POST		N	Z	P
	Mean	Sd	Mean	Sd			
Self-efficacy	3.02	0.50	3.46	0.35	24	-3.67	0.00*
Competition	3.24	0.65	3.85	0.23	24	-3.53	0.00*
Curiosity	2.37	0.71	2.92	0.33	24	-3.58	0.00*
Compliance	2.04	0.73	3.01	0.73	24	0.00	1.00
Social	2.46	0.63	3.09	0.48	24	-4.11	0.00*
Recognition	3.00	0.41	3.56	0.41	24	0.00	1.00
General Reading Motivation	3.31	0.24	3.31	0.24	24	0,00	1.00

*p<,05; S.D: Standart Deviation

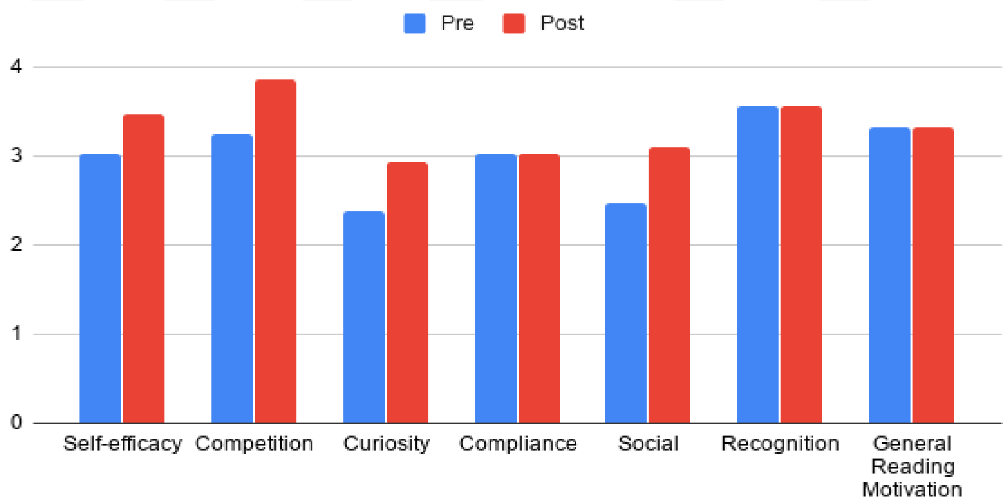

Figure 15 ***Comparison of the Pre-Post Reading Motivation Scores of Printed E-book Reading Group***

As a result of the Wilcoxon test for paired groups performed to determine whether the pre self-efficacy and post self-efficacy averages differed significantly, the difference between the arithmetic averages was found statistically significant *(Z = -*

3.67; P = 0.00 < 0.05). Pre self-efficacy average *(x=3.02)* was lower than post self-efficacy average *(x=3.46).*

As a result of the Wilcoxon test for paired groups performed to determine whether the Pre-competition and post-competition averages showed a significant difference, the difference between the arithmetic averages was found statistically significant *(Z = -3.53; P = 0.00 < 0.05).* Pre-competition average *(x=3.24)* was lower than post-competition average *(x=3.85).*

As a result of the Wilcoxon test for paired groups performed to determine whether pre-curiosity and post-curiosity averages differed significantly, the difference between arithmetic averages was found statistically significant *(Z = -3.58; P = 0.00 < 0.05).* Pre-curiosity average *(x=2.37)* was lower than post-curiosity average *(x=2.92).*

As a result of the Wilcoxon test for paired groups performed to determine whether pre-social and post-social averages differed significantly, the difference between arithmetic averages was found statistically significant *(Z = -4.13; P = 0.00 < 0.05).* Pre-social average *(x=2.46)* was lower than post-social average *(x=3.09).*

Table 33

Comparison of Digital Attitude Pre- Post Test Scores of Gamified E-book Reading Group Experimental Group Wilcoxon Test Results

	PRE		POST		N	Z	P
	Mean	Sd	Mean	Sd			
Academic Digital	4.85	1.32	5.78	0.38	24	-3.07	0.00*
Recreative Digital	3.15	0.52	3.68	0.28	24	-3.46	0.00*
Academic Paper	2.73	0.64	2.93	0.45	24	-1.91	0.05
Recreative Paper	4.33	2.12	5.29	1.16	24	-2.23	0.02
General E-book reading Attitude	4.43	1.06	4.80	0.71	24	-2.96	0.00*

*p<,05; S.D: Standart Deviation

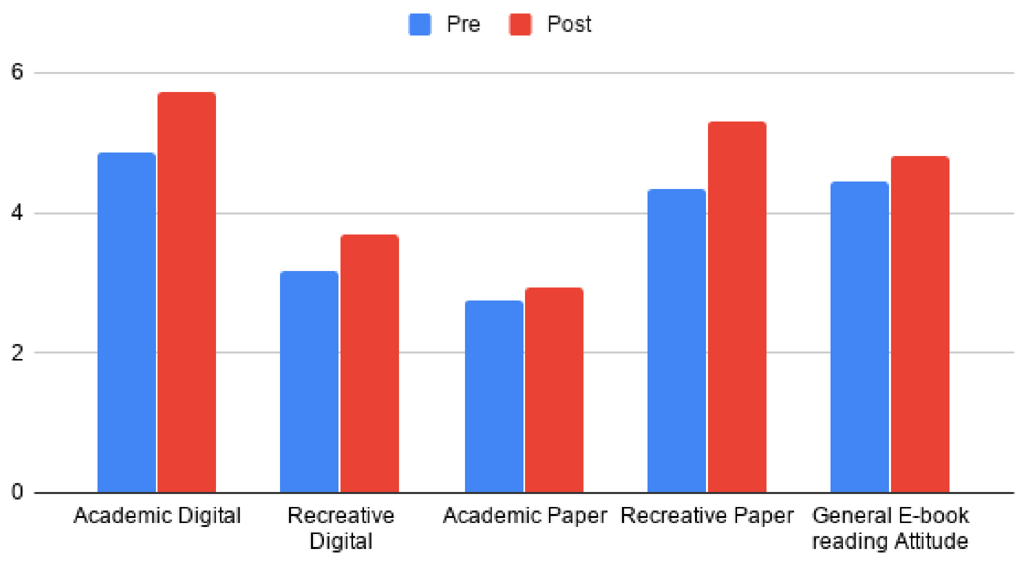

Figure 16 ***Comparison of the Pre-Post Digital Attitude Scores of Gamified E-book Reading Group***

As a result of the Wilcoxon test for paired groups performed to determine whether the pre-academic digital and post-academic digital averages differed significantly, the difference between the arithmetic averages was statistically significant *(Z = -3.07; P = 0.00 < 0.05)*. Pre-academic digital average *(x=4.85)* was lower than post-academic digital average *(x=5.70)*.

As a result of Wilcoxon test for paired groups performed to determine whether pre-recreative digital and post-recreative digital averages differed significantly, the difference between arithmetic averages was found statistically significant *(Z = -3.46; P = 0.00 < 0.05)*. Pre-recreative digital average *(x=3.15)* was lower than post-recreative digital average *(x=3.68)*.

As a result of Wilcoxon test for paired groups performed to determine whether the mean values of pre-recreative paper and post-recreative paper differed significantly, the difference between the arithmetic averages was found statistically significant *(Z = -2.22; P = 0.02 < 0.05)*. Pre-recreative paper average *(x=4.33)* was lower than post-recreative paper average *(x=5.29)*.

As a result of the Wilcoxon test for paired groups performed to determine whether the pre-general e-book reading attitude and post-general e-book reading attitude averages differed significantly, the difference between the arithmetic averages was found statistically significant *(Z=-2.96; P = 0.00 < 0.05).* Pre-general e-book reading attitude average *(x=4.43)* was lower than post-general e-book reading attitude average *(x=4.80).*

As a result of the Wilcoxon test for paired groups conducted to determine whether the averages of pre-compliance and post-compliance, pre- recognition and post-recognition, pre-general reading motivation and post-general reading motivation, pre-academic paper and post-academic paper differed significantly, the difference was not statistically significant *(P > 0.05).*

Table 34

Comparison of Reading Motivation Pre- Post-test Scores of Print Book Reading Group Control Group Wilcoxon Test Results

Groups	PRE		POST		N	Z	P
	Mean	Sd	Mean	Sd			
Self-efficacy	2.21	0.43	2.57	0.46	24	-2.94	0.00*
Competition	2.00	0.00	2.17	0.23	24	-2.85	0.00*
Curiosity	1.66	0.22	2.14	0.19	24	-4.16	0.00*
Compliance	2.42	0.11	2.43	0.11	24	-1.00	0.31
Social	2.75	0.00	2.81	0.11	24	-2.44	0.01*
Recognition	2.47	0.35	2.47	0.35	24	0.00	1.00
General Reading Motivation	2.43	0.13	2.43	0.13	24	0.00	1.00

*p<,05; S.D: Standart Deviation

As a result of the Wilcoxon test for paired groups performed to determine whether pre-self-efficacy and post-self-efficacy averages differed significantly, the difference between the averages was found statistically significant *(Z = -2.94; P = 0.00 < 0.05).* Pre-self-efficacy averages *(x=2.21)* were lower than post-self-efficacy averages *(x=2.57).*

As a result of the Wilcoxon test for paired groups performed to determin whether the pre-competition and post-competition averages differed significantly, the difference between the arithmetic averages was found statistically significant *(Z=-2.85; P = 0.00 < 0.05)*. Pre-competition averages *(x=2.00)* were lower than post-competition averages *(x=2.17)*.

As a result of the Wilcoxon test for paired groups performed to determine whether the pre-curiosity and post-curiosity averages differed significantly, the difference between the averages was found statistically significant *(Z=-4.16; P = 0.00 < 0.05)*. Pre-curiosity averages *(x=1.66)* were lower than post-curiosity averages *(x=2.14)*.

As a result of the Wilcoxon test for paired groups performed to determine whether the pre-social and post-social averages differed significantly, the difference between the arithmetic averages was found statistically significant *(Z=-2.44; P= 0.01 < 0.05)*. Pre-social averages *(x=2.75)* were lower than post-social averages *(x=2.81)*.

Table 35

Comparison of Digital Attitude Pre Post-test Scores of Print Book Reading Control Group Wilcoxon Test Results

Groups	PRE		POST		N	Z	P
	Mean	Sd	Mean	Sd			
Academic Digital	3.45	1.79	3.45	1.79	24	0.00	1.00
Recreative Digital	2.04	0.26	2.38	0.42	24	-2.68	0.00*
Academic Paper	1.66	0.00	1.73	0.13	24	-2.23	0.02*
Recreative Paper	2.45	2.02	2.45	2.02	24	0.00	1.00
General E-book Reading Attitude	3.64	1.25	4.08	1.01	24	-3.80	0.00*

*p<,05; S.D: Standart Deviation

The findings displayed in Table 35 showed that there was statistically significant difference between the pre and post test scores of the print book reading group with respect to their attitude towards reading *(P = .63 > 0.05)* via Wilcoxon test.

Pre-recreational digital and post-recreational digital means of the groups illustrated via Wilcoxon test and there was a statistically significant difference between pre-recreational digital and post-recreational digital scores of the print book reading scores *(Z = -2.68; P = 0.00 < 0.05).*

As a result of the Wilcoxon test for paired groups performed to determine whether the pre-academic paper and post-academic paper averages differed significantly, the difference between the arithmetic averages was found statistically significant *(Z = -2.23; P = 0.02 < 0.05).* Pre-academic paper averages *(x=1.66)* were lower than post-academic paper averages *(x=1.73).*

As a result of the Wilcoxon test for paired groups performed to determine whether the pre-general e-book reading attitude and post-general e-book reading attitude averages differed significantly, the difference between the arithmetic averages was found statistically significant *(Z=-3.80; P = 0.00 < 0.05).* Pre-general e-book reading attitude averages *(x=3.64)* were lower than post-general e-book reading attitude averages *(x=4.08).*

The Wilcoxon test for paired groups to determine whether the mean of pre-compliance and post-compliance, pre-recognition and post-recognition, pre-general reading motivation and post-general reading motivation, pre-academic digital and post-academic digital, pre-recreative paper and post-recreative paper differed significantly as a result of the Wilcoxon test, the difference between arithmetic averages was not found statistically significant *(P > 0.05).*

4.2.4 Findings of the influence of Gamified E-book reading / Personalized E-book Reading, PDF E-book Reading, and Printed Book Reading on Reading Comprehension Test and Reading Time Results.

This part shows reading comprehension performance of the groups in the experiment. A comparative analysis was made and the between-group statistics were displayed to discover whether there was a difference between the reading comprehension scores of the groups due to the different reading environments: printed book reading, gamified e-book reading, personalized e-book reading, and pdf e-book reading.

Table 36

Descriptive Statistics of the Groups' Reading Comprehension

Groups	Personalized E-book Reading Group (n=24)		PDF E-book Reading Group (n=24)		Gamified E-book Reading Group (n=24)		Printed Book Reading Group (n=24)		KW	P	D
	Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd			
1st week Reading time	63.42	3.98	83.00	0.98	63.42	3.98	90.00	0.00	82.94	0.00*	1 >2 4 > 1 2 > 3 4 > 3
5th week Reading time	60.42	3.76	80.00	0.00	63.42	3.98	90.00	0.00	82.44	0.00*	2 > 1 4 > 1 2 > 3 4 > 3
1st week Story elements	0.83	0.38	0.71	0.46	0.71	0.46	0.71	0.46	1.44	0.69	
5th week Story elements	0.58	0.50	0.79	0.41	0.96	0.20	0.79	0.41	9.83	0.02*	3 > 1
1st week Main idea and details	0.88	0.33	0.96	0.20	0.79	0.41	0.71	0.46	5.93	0.11	
5th week Main idea and details	0.83	0.38	0.83	0.38	0.88	0.33	0.67	0.26	3.83	0.28	
1st week Problem and solution	0.92	0.28	0.50	0.51	0.83	0.38	0.92	0.28	7.00	0.00*	1 > 2 3 > 2 4 > 2
5th week Problem and solution	0.75	0.44	0.58	0.50	0.83	0.38	0.83	0.38	5.27	0.15	
1st week Analyze character	0.62	0.49	0.83	0.38	0.67	0.48	0.71	0.46	2.79	0.42	
5th week Analyze character	0.96	0.20	0.79	0.41	0.88	0.33	0.88	0.33	3.01	0.38	
1st week Vocabulary	0.62	0.49	0.75	0.44	0.67	0.48	0.96	0.20	8.35	0.03*	4 > 1 4 > 2 4 > 3
5th week Vocabulary	0.58	0.50	1.00	0.00	0.46	0.50	0.96	0.20	7.20	0.00*	2 > 1 4 > 1 2 > 3 4 > 3

Kruskall Wallis-H test

The reading time of the students according to the groups was significantly different in the 1st week *($\chi^2(3)=82.94$, $P = 0.00 < 0.05$)*. The reason for the difference was that reading time of those who sed personalized e-book *($\bar{x}=63.00$)* was lower than the 1st week points of those who used PDF e-book *($\bar{x}=83.42$)*.

The reading time of those who read printed book *($\bar{x}$ = 90.00)* was higher than the reading time of those who read personalized e-book in the first week *($\bar{x}$ = 63.42)*. The reading time of the ones who read pdf e-book *($\bar{x}$ = 83.00)* was higher than, the reading time of those who read gamified e-book in the 1st week *($\bar{x}$ = 63.42)*. The reading time of those with printed book reading groups was higher than the 1st week scores *($\bar{x}$ = 90.00)*, the reading time of those with gamified e-book reading groups was higher than the 1st week *($\bar{x}$ = 63.42)*. Printed book reading groups reading scores in the first week was the highest of all *($\bar{x}$ = 90.00)*.

The problem and solution scores of the students in the first week differed significantly according to the groups *($\chi2(3)$ = 7.00, $P = 0.00 < 0.05$)*. The reason for the difference; personalized e-book reading groups problem and solution first week scores *($\bar{x}$ = 0.92)* were higher than pdf e-book reading groups problem and solution scores *($\bar{x}$ = 0.50)*. Gamified e-book reading groups first week problem solution scores *($\bar{x}$=0.83)* were higher than pdf e-book reading groups problem and solution scores *($\bar{x}$=0.50)*. Printed e-book reading groups first week problem solution scores *($\bar{x}$=0.92)* were higher than, pdf e-book reading groups problem solution scores *($\bar{x}$=0.50)* .

Vocabulary scores of students in the first week differed significantly according to the groups *($\chi2(3)$ = 8.35, $P = 0.03 < 0.05$)*. The reason for the difference; printed book reading groups vocabulary 1st week scores *($\bar{x}$= 0.96)* was higher than personalized e-book reading groups vocabulary 1st week scores *($\bar{x}$ = 0.62)*. Printed book reading groups vocabulary 1st week scores *($\bar{x}$=0.96)* was higher than pdf e-book reading groups vocabulary 1st week scores *($\bar{x}$=0.75)*. Printed book reading groups vocabulary 1st week scores *($\bar{x}$ = 0.96)* were higher than gamified e-book reading groups vocabulary 1st week scores *($\bar{x}$ = 0.67)*.

The reading time of the students according to the groups was significantly different in the 2nd week *($\chi2(3)$ = 82.77, $P = 0.00 < 0.05$)*. The reason for the difference was that reading time of those who used pdf e-book *($\bar{x}$=83.00)* was higher than the 2nd week points of those who used personalized e-book *($\bar{x}$=63.42)*.

The reading time of those who read printed book *($\bar{x}$ = 90.00)* was higher than the reading time of those who read personalized e-book in the second week *($\bar{x}$ = 63.42)*. The reading time of the ones who read pdf e-book *($\bar{x}$ = 83.00)* was higher than, the reading time of those who read gamified e-book in the 2nd week *($\bar{x}$ = 63.42).* The reading time of those with printed book reading groups was higher than the 2nd week scores *($\bar{x}$ = 90.00),* the reading time of those with gamified e-book reading groups was higher than the 2nd week *($\bar{x}$ = 63.42).* Printed book reading groups reading scores in the second week was the highest of all *($\bar{x}$ = 90.00).*

The story elements scores of the students according to the groups in the 2nd week differed significantly *($\chi 2(3)$ = 7.86, P = 0.04 < 0.05).* The reason for the difference; gamified e-book reading groups the story elements scores in the 2nd week *($\bar{x}$=0.88)* was higher than pdf e-book reading groups 2nd week story elements scores *($\bar{x}$=0.50).*

The students' main idea and details 2nd week scores according to the groups differed significantly *($\chi 2(3)$ = 7.00, P = 0.00 < 0.05).* The reason of this difference was that personalized e-book reading groups main idea and details 2nd week scores *($\bar{x}$=0.92)* were higher than printed book reading groups main idea and details 2nd week scores *($\bar{x}$=0.50).* PDF e-book reading groups main idea and details 2nd week scores *($\bar{x}$=0.83)* were higher than printed book reading groups main idea and details 2nd week scores *($\bar{x}$=0.50).* Gamified e-book reading groups main idea and details 2nd week scores *($\bar{x}$=0.92)* were higher than printed book reading groups main idea and details 2nd week scores *($\bar{x}$=0.50).*

According to the groups, vocabulary scores of students in the 2nd week differed significantly *($\chi 2(3)$ = 13.57, P = 0.00 < 0.05).* The reason of this difference was that printed book reading groups vocabulary 2nd week scores *($\bar{x}$=0.92)* were higher than personalized e-book reading groups vocabulary 2nd week scores *($\bar{x}$=0.58).* PDF e-book reading groups vocabulary 2nd week scores *($\bar{x}$=0.83)* were higher than gamified e-book reading groups vocabulary 2nd week scores *($\bar{x}$=0.50).* Printed book reading groups vocabulary 2nd week scores *($\bar{x}$=0.92)* were higher than gamified e-book reading groups vocabulary 2nd week scores *($\bar{x}$=0.50).*

The reading time of the students according to the groups was significantly different in the 3rd week *($\chi 2(3)$ = 77.05, P = 0.00 < 0.05).* The reason for the difference was that reading time of those who used pdf e-book *($\bar{x}$=83.00)* was higher than the 3rd week points of those who used personalized e-book *($\bar{x}$=63.42).*

The reading time of those who read printed book *($\bar{x}$ = 90.00)* was higher than the reading time of those who read personalized e-book in the third week *($\bar{x}$ = 63.42)*. The reading time of the ones who read pdf e-book *($\bar{x}$ = 83.00)* was higher than the reading time of those who read gamified e-book in the 3rd week *($\bar{x}$ = 63.42)*. The reading time of those with printed book reading groups was higher than the 3rd week scores *($\bar{x}$ = 90.00)*, the reading time of those with gamified e-book reading groups was higher than the 3rd week *($\bar{x}$ = 63.42)*. Printed book reading groups reading scores in the third week was the highest of all *($\bar{x}$ = 90.00)*.

The story elements scores of the students according to the groups in the 3rd week differed significantly *($\chi 2(3)$ = 20.58, P = 0.00 < 0.05)*. The reason for the difference; gamified e-book reading groups the story elements scores in the 3rd week *($\bar{x}$=1.00)* was higher than personalized e-book reading groups 3rd week story elements scores *($\bar{x}$=0.67)*.

Printed book reading groups 3rd week story element scores *($\bar{x}$=1.00)* were higher than personalized e-book reading groups 3rd week story elements scores *($\bar{x}$=0. 67)*. Gamified e-book reading groups story elements scores in the third week *($\bar{x}$=1,00)* was higher than pdf e-book reading groups story elements scores in the 3rd week *($\bar{x}$=0.62)*. Printed e-book reading groups olanların story elements 3rd week scores *($\bar{x}$=1.00)* were higher than PDF e-book reading groups story elements 3rd week scores *($\bar{x}$=0.62)* .

According to the groups, the main idea and details scores of the students in week 3 differred significantly *($\chi 2(3)$ = 11.28, P = 0.01 < 0.05)*. The reason of this difference was that personalized e-book reading groups main idea and details 3rd week scores *($\bar{x}$=0.96)* were higher than printed e-book reading groups main idea and details 3rd week scores *($\bar{x}$=0.62)*. Gamified e-book reading groups main idea and details 3rd week scores *($\bar{x}$=0.92)* were higher than Printed e-book reading groups olanların main idea and details 3rd week scores *($\bar{x}$=0.62)*.

Vocabulary scores of students in the third week differed significantly according to the groups *($\chi 2(3)$ = 13.57, P = 0.00 < 0.05)*. The reason for the difference; printed book reading groups vocabulary 3rd week scores *($\bar{x}$ = 0.92)* were higher than personalized e-book reading groups vocabulary 1st week scores *($\bar{x}$ = 0.68)*. Printed book reading groups vocabulary 3rd week scores *($\bar{x}$ = 0.92)* were higher than pdf e-book reading groups vocabulary 3rd week scores *($\bar{x}$ = 0.83).* Printed book reading groups vocabulary 3rd week scores *($\bar{x}$ = 0.92)* were higher than gamified e-book reading groups vocabulary 3rd week scores *($\bar{x}$ = 0.67).*

The reading time of the students according to the groups was significantly different in the 4th week *($\chi 2(3) = 82.66$, $P = 0.00 < 0.05$).* The reason for the difference was that reading time of those who used pdf e-book *($\bar{x}$=80.00)* was higher than the 4th week points of those who used personalized e-book *($\bar{x}$=63.42).*

The reading time of those who read printed book *($\bar{x}$ = 90.00)* were higher than the reading time of those who read personalized e-book in the fourth week *($\bar{x}$ = 63.42).* The reading time of the ones who read pdf e-book *($\bar{x}$ = 80.00)* was higher than, the reading time of those who read gamified e-book in the 4th week *($\bar{x}$ = 63.42).* The reading time of those with printed book reading groups was higher than the 4th week scores *($\bar{x}$ = 90.00),* the reading time of those with gamified e-book reading groups was higher than the 4th week *($\bar{x}$ = 63.42).* Printed book reading groups reading scores in the 4th week was the highest of all *($\bar{x}$ = 90.00).*

The story elements scores of the students according to the groups in the 4th week differed significantly *($\chi 2(3) = 11.90$, $P = 0.00 < 0.05$).* The reason for the difference; gamified e-book reading groups the story elements scores in the 4th week *($x4 = 0.96$)* was higher than pdf e-book reading groups fourth week story elements scores *($\bar{x}$ = 0.54).*

The reason of this difference was that gamified e-book reading groups story elements 4th week scores *($\bar{x}$=0.96)* were higher than PDF e-book reading groups story elements 4th week scores *($\bar{x}$=0.54).*

According to the groups, students' analyze character scores of the 4th week differed significantly *($\chi 2(3) = 7.91$, $P = 0.04 < 0.05$).* The reason of this difference was that gamified e-book reading groups analyze character 4th week scores *($\bar{x}$=0.88)* were higher than personalized e-book reading groups analyze character 4th week scores *($\bar{x}$=0.54).*

The scores of the students according to the main idea and details in the 4th week showed a significant difference *($\chi2(3)$ = 9.26, P = 0.02 < 0.05)*. The reason of this difference was that personalized e-book reading groups main idea and details 4th week scores *($\bar{x}$=0.92)* were higher than printed e-book reading groups main idea and details 4th week scores *($\bar{x}$=0.62)*. Gamified e-book reading groups main idea and details 4th week scores *($\bar{x}$=0.92)* were higher than printed e-book reading groups main idea and details 4th week scores *($\bar{x}$=0.62).*

The vocabulary scores of the 4th week of the students differed significantly according to the groups *($\chi2(3)$ = 14.61, P = 0.00 < 0.05)*. The reason of this difference was that PDF e-book reading groups vocabulary 4th week scores *($\bar{x}$=0.83)* were higher than personalized e-book reading groups vocabulary 4th week scores *($\bar{x}$=0.54)*. Printed e-book reading groups vocabulary 4th week scores *($\bar{x}$=0.92)* were higher than personalized e-book reading groups vocabulary 4th week scores *($\bar{x}$=0.54)*. PDF e-book reading groups vocabulary 4th week scores *($\bar{x}$=0.83)* were higher than gamified e-book reading groups vocabulary 4th week scores *($\bar{x}$=0.50)*. Printed e-book reading groups vocabulary 4th week scores *($\bar{x}$=0.92)* were higher than gamified e-book reading groups vocabulary 4th week scores *($\bar{x}$=0.50).*

The reading time of the students according to the groups was significantly different in the 5th week *($\chi2(3)$=82.44, P = 0.00<0.05)*. The reason for the difference was that reading time of those who used pdf e-book *($\bar{x}$=80.00)* was higher than the 5th week points of those who used personalized e-book *($\bar{x}$=63.42).*

The reading time of those who read printed book *($\bar{x}$ = 90.00)* was higher than the reading time of those who read personalized e-book in the fifth week *($\bar{x}$ = 63.42).* The reading time of the ones who read pdf e-book *($\bar{x}$ = 80.00)* was higher than, the reading time of those who read gamified e-book in the 5th week *($\bar{x}$ = 63.42).* The reading time of those with printed book reading groups was higher than the 5th week scores *($\bar{x}$ = 90.00)*, the reading time of those with gamified e-book reading groups was higher than the 5th week *($\bar{x}$ = 63.42).* Printed book reading groups reading scores in the 5th week was the highest of all *($\bar{x}$ = 90.00).*

The story elements scores of the students in week 5 differed significantly according to the groups *($\chi2(3)$ = 9.83, P = 0.02 < 0.05)*. The reason of this difference was that gamified e-book reading groups story elements 5th week scores *($\bar{x}$=0.96)* were higher than personalized e-book reading groups story elements 5th week scores *($\bar{x}$=0.58).*

Fifth week vocabulary scores of the students differed significantly according to the groups *($\chi 2(3)=27.70$, $P = 0.00 < 0.05$).* The reason of this difference was that PDF e-book reading groups vocabulary 5. week scores *($\bar{x}$=1.00)* were higher than personalized e-book reading groups vocabulary 5th week scores *($\bar{x}$=0.58).* Printed book reading groups vocabulary 5th week scores *($\bar{x}$=0.96)* were higher than personalized e-book reading groups vocabulary 5th week scores *($\bar{x}$=0.58).* PDF e-book reading groups vocabulary 5 week scores *($\bar{x}$=1.00)* were higher than gamified e-book reading groups vocabulary 5 week scores *($\bar{x}$=0.46).* Printed book reading groups vocabulary 5th week scores *($\bar{x}$=0.96)* were higher than gamified e-book reading groups vocabulary 5th week scores *($\bar{x}$=0.46).*

According to the results of Kruskal Wallis H-Test conducted to determine whether the means of the story elements 1st week, analyze character 1st week, main idea and details 1st week, problem and solution 2nd week, analyze character 2nd week, problem and solution 3rd week, analyze character 3rd week, problem and solution 3rd week 4th week, problem and solution 5. week, analyze character week 5, main idea and details 5. week scores did not show statistically significant difference in terms of the group variable *($P > 0.05$).*

When pre-post general reading comprehension scores were compared to see the difference between arithmetic averages was not found statistically significant as a result of Wilcoxon test for paired groups performed to determine whether the averages of week 1 and week 5 general reading comprehension scores showed a significant difference *($P > 0.05$).*

Table 37

Personalized E-book Reading Group change between Week 1 and Week 5

	1st week		5th week		N	Z	P
	Mean	Sd	Mean	Sd			
Reading time	63.42	3.76	60.40	3.98	24	-2.39	0.02*
Problem and solution	0.75	0.44	0.92	0.28	24	1.63	0.10
Story elements	0.58	0.50	0.83	0.38	24	1.89	0.05
Analyze character	0.62	0.20	0.96	0.49	24	2.53	0.01*
Main idea and details	0.83	0.38	0.87	0.33	24	0.47	0.65
Vocabulary	0.58	0.50	0.63	0.45	24	0.33	0.73

*p<,05; S.D: Standart Deviation

The difference between the arithmetic averages was statistically significant as a result of the Wilcoxon test for paired groups performed to determine whether the averages of reading week 1 and reading week 5 showed a significant difference *(Z=-2.30; P =0.02 < 0.05)*. Reading time average of the week one was higher than *(x=63.42)* the reading time average of the week 5 *(x=60.42)*.

The difference between arithmetic averages was found statistically significant as a result of Wilcoxon test for paired groups performed to determine whether the mean of analyze character 1st week and analyze character 5th week showed a significant difference *(Z = -2.53; P = 0.01 < 0.05)*. The arithmetic average of analyze character week 1 was lower than *(x=0.62)* analyze character arithmetic average week 5 *(x=0.96)*.

When problem and solution, story elements, analyze characher and main idea and details in the 1st week and week 5 was compared to see the difference between arithmetic averages was not found statistically significant as a result of Wilcoxon test for paired groups performed to determine whether the averages of week 1 and main idea and details showed a significant difference *(P > 0.05)*.

Table 38

PDF E-book Reading Group change between Week 1 and Week 5

	1st week		5th week		N	Z	P
	Mean	Sd	Mean	Sd			
Reading time	83.00	0.98	80.00	0.75	24	0.00	0.03
Problem and solution	0.50	0.51	0.58	0.50	24	-0.53	0.59
Story elements	0.71	0.46	0.79	0.41	24	-0.63	0.52
Analyze character	0.83	0.38	0.79	0.41	24	-0.57	0.56
Main idea and details	0.96	0.20	0.83	0.38	24	-1.34	0.18
Vocabulary	0.75	0.44	1.00	0.00	24	-2.44	0.01*

*p<,05; S.D: Standart Deviation

When the reading time, problem and solution, story elements, analyze characher and main idea and details in the 1st week and week 5 was compared to see the difference between arithmetic averages was not found statistically significant as a result of Wilcoxon test for paired groups performed to determine whether the averages of week 1 and main idea and details showed a significant difference *(P > 0.05)*.

As a result of the Wilcoxon test, the difference between the arithmetic averages was found to be statistically significant for paired groups performed to determine whether the mean of Vocabulary 1st week and vocabulary 5th week showed a significant difference *(Z=-2.44; P = 0.01 <0.05)*. The vocabulary average of the first week *(x=0.75)* was lower vocabulary average of the 5th week *(x=1.00)*.

Table 39

Gamified E-book Reading Group Change between Week 1 and Week 5

	1st week		5th week		N	Z	P
	Mean	Sd	Mean	Sd			
Reading time	63.42	3.98	63	3.90	24	0.00	1.00
Problem and solution	0.83	0.38	0.83	0.38	24	0.00	1.00
Story elements	0.71	0.46	0.96	0.20	24	-2.49	0.01*
Analyze character	0.67	0.48	0.88	0.33	24	-2.23	0.02*
Main idea and details	0.79	0.41	0.87	0.33	24	-1.00	0.31
Vocabulary	0.67	0.48	0.46	0.50	24	-1.66	0.09

*p<,05; S.D: Standart Deviation

The difference between arithmetic averages was found statistically significant as a result of Wilcoxon test for paired groups performed to determine whether the mean of the Story Elements 1 week and the story elements 5 week showed a significant difference *(Z = -2.44; P = 0.01 < 0.05).* The story elements average of the first week *(x=0.71)* was lower than vocabulary average of the 5th week *(x=0.96).*

The difference between the arithmetic averages was found statistically significant as a result of the Wilcoxon test for paired groups performed to determine whether the mean of Analyze Character 1st week and analyze character 5th week showed a significant difference *(Z = -2.23; P = 0.02 < 0.05).* The Analyze Character average of the first week *(x=0.67)* was lower than analyze character week five average *(x=0.88).*

When the reading time, problem and solution, story elements, analyze characher and main idea and details in the first week and week five was compared to see the difference between arithmetic averages was not found statistically significant as a result of Wilcoxon test for paired groups performed to determine whether the averages of week 1 and main idea and details showed a significant difference *(P > 0.05).*

Table 40

Printed book reading group change between week 1 and week 5

	1st week		5th week		N	Z	p
	Mean	Sd	Mean	Sd			
Reading time	90.00	0.00	90.00	0.00	24	0.00	1.00
Problem and solution	0.92	0.28	0.83	0.38	24	-0.86	0.41
Story elements	0.71	0.46	0.79	0.41	24	-0.81	0.41
Analyze character	0.71	0.46	0.87	0.33	24	-1.26	0.20
Main idea and details	0.71	0.46	0.67	0.48	24	-0.30	0.76
Vocabulary	0.96	0.20	0.96	0.20	24	0.00	1.00

*p<,05; S.D: Standart Deviation

When the reading time, problem and solution, story elements, analyze characher and main idea and details in the 1st week and week 5 was compared to see the difference between arithmetic averages was not found statistically significant as a result of the Wilcoxon test for paired groups performed to determine whether the averages of week 1 and main idea and details showed a significant difference *(P > 0.05)*.

4.3 Qualitative Data Analysis

While conducting qualitative data analysis, strategies like categorizing, coding, and interpreting were facilitated. The data from the field notes and reflective journals were coded and categorized into themes. The qualitative data were categorized according to the responses of the participants' reflections and the notes kept by the researcher with the assistance of five field experts and the researcher. The framework needed to be constructed by considering the coded data made by two experts and the researcher, the conceptual themes were identified by the researcher based on the recurring words, and ideas (Miles & Huberman, 1994). In addition, Auerback and Silverstein (2003) also argued that recurring concepts were themes that lead to "theoretical constructs" and eventually provided "theoretical narrative" that incorporated observations and interpretations. Hence, firstly, the data was collected and transcipts were created from the interviews. Then, they were categorized into similar groups by determining the coding process' major themes and sub-themes. These categories were used to construct a matrix of major themes, which were sorted by the researcher under specific headings and elucidated.

Each section was composed of 5 sub-sections. In addition, the reflective journals kept by the course teacher related to observing the course by printed book reading, gamified reading, personalized reading and PDF reading. Eventually, the field notes were taken each week for all classes by the researcher's experiences in the class. From each group with five students focus group interviews were conducted. Within the scope of the present research, all data obtained were transcribed and written, read by the researcher and thesis advisor, coded, categorized, themed and finally interpreted. To supply the reliability of the results obtained by the researcher, she revised the records she kept throughout the interviews and observations, received the confirmation of the participants and the opinions of four different experts. A number of differences arising were discussed among experts to decide the final code, categories and themes.

4.3.1 Focus Group Interviews with Participant Students after the Experiment

Transcripts were created by analyzing the voice recordings of focus group interviews. The transcripts created have been read many times and codes and common themes including these codes have been created and the findings had been presented under these themes. In order to support the content of the themes, direct quotations of the participants were included.

Information on the coding schemes used for analyzing focus group interviews with students were presented in Table 41, Table 42, Table 43, and Table 44.

Table 41

Coding Scheme for Gamified E-book Reading Focus Group Interview

Theme	Codes	Sample extract
Views related to treatment	* The practice's difference from other lessons *motivation *feedback	"I love playing the avatar in the gamified website." (Student 2) "I wish in other classes we use game like environments." (Student 1) "Because having badges and increasing points in the game like enviroment making the process more fun." (Student 3) "It was good to take feedback, to see the answers after we completed." (Student 5)
	* Learning from website * Teaching your friends	"It was one to read, we have the chance to try reading online." (Student 4) "When we finish the reading, the rocket flew. It was cool." (Student 1)
Suggestion	Sources need to be shared by educators. Students need guidance.	"We do not know good online sources to read." (Student 1 , 4, 5) "Whenever I need help, I called the teacher and she helped immediately." (Student 3,4,5)

Tablo 42

Coding Scheme for Personalized E-book Reading Focus Group Interview

Theme	Codes	Sample extract
Views related to treatment	* The practice's difference from other lessons *self-efficacy and learner autonomy	"It was all very fun." (Student 3) "I wish all the lesson we do like this. Because for example doing activity on from a computer, instead of doing activity on textbook making it more fun.." (Student 1) "I like reading picture books, I focused on well." (Student 2)
	* meaningful texts * It is more fun to be able to hear different ideas. *confidence *curiosity *feedback	"Yes everyone's thought should be taken." (Student 4) "It is more fun to be able to hear different ideas." (Student 5) "I have the power to change the story." (Student 2) "Everybody else's must respect your opinion then he must find the truth." (Student 3) "I feel to confident read e-books and I felt curious each week." (Student 5) "It was beneficial to take feedback on my performance." (Student 1) "We saw our mistakes and related topic of our mistakes." (Student 4)
Suggestion	*more personalized activities needs to be included in EFL classes *We need to create a connection between the topic and learner.	"We have don't know what is personalized books when we read, we loved to see ourself in the book." (Student 2) "I will always remember these books. It was fun to see yourself in the book as a hero." (Student 4)

Tablo 43

Coding Scheme for PDF E-book Reading Focus Group Interview

Theme	Codes	Sample extract
Views related to treatment	* The practice's difference from other lessons	"I liked reading activities." (Student 1) "I had difficulty while saving document on computer and I asked help." (Student 3)
	*fun *engaging *feedback	"I like group work activities." (Student 1) "I had fun each week when we try to gues that weeks book." (Student 2) "You did not hear my answer although I knew the correct reply." (Student 3) "We did not learn the correct answers weekly." (Student 4)
Suggestion	*guidance *integration of guided reading activities need to increase *source	"This is the first time I read storybooks." (Student 3) Reading storybooks from computer is something new for me." (Student 2) "I do not know where I can find PDF books to read from computer." (Student 5)

Tablo 44

Coding Scheme for Printed Book Reading Focus Group Interview

Theme	Codes	Sample extract
Views related to treatment	* The practice's difference from other lessons	"Doing reading in class time was enjoyable." (Student 3) "I like the book that you give." (Student 1) "I liked discussions in the class." (Student 2)
	* Learning from friends * Feedback	"I liked the acitivities we do in reading class." (Student 3) "I could not take feedback some of my questions." (Student 5) "We solved the problems, we gave different solutions I loved that activity." (Student 4) "I had difficulty in taking notes." (Student 5) "We answered the test but the teacher collect those papers and gave feedback on the other week after she checked the results." (Student 4)
Suggestion	*more storybook reading activities need to be included in EFL classes	"This is the first time we are reading stories in the class." (Student 3)
	*Students want to have reading sessions at school.	"I wish we do more reading lessons." (Student 2)

4.3.1.1 Self-efficacy and Learner Autonomy

The first theme emerging from the interview data was about how electronic reading influenced students EFL reading process and habits. When the transcripts of focus group interviews were analyzed, it was possible to state that when students were reading from the screen they think they were responsible for their own learning and many students claimed that they found electronic reading quite enjoyable and they consider electronic reading as a comfortable environment to read stories compared to guided printed book reading group. It was also noticed that reading texts online helped them to feel confident. Considering this findings, some of 6th grade students shared some of the excerpts.

> [...] I felt in a rush when I read the story in the lesson. With the help of time, I think I got used to. When I read the stories I felt responsible and motivated to read the stories. (S2, Gamified E-book Reading Group, Interview Data, 05.11.2019)

> [...] I really enjoyed reading my stories as I was the hero in the story. I felt myself like I am a famous person. After school, I showed the stories to my family. While reading each text, I paused and thought and took notes and also I felt confident. (S1, Personalized E-book Reading Group, Interview Data, 05.11.2019)

> [...] Everyone in the class was reading stories in the lesson and we have never done this before which made the lesson more interesting. Each stories ending and main characters were different. We compared the stories in the break time. The best thing was to get help of the teacher. (S5, Personalized E-book Reading Group, Interview Data, 05.11.2019)

These excerpts illustrated that the 6th grade students thought e-book reading endeavored them to raise *"self-regulated learning skills"*. Therefore, they recognized that they were able to learn at their own pace. They claimed they were actively engaged in the stories. Most of the students talked about the confidence and motivation they acquired.

4.3.1.2 Meaningful Texts

Meaningful texts were important to students in both the digital e-reader group and the paper traditional group. This theme emerged from the comments all five students had given during their interviews with the students:

> [...] I was the main character and this is really cool. (S5, Personalized E-book Reading Group, Interview Data, 05.11.2019)

> [...] I like how there were different ending and I have the power to finish the stories. (S5, Personalized E-book Reading Group, Interview Data, 04.11.2019)

> [...] The pictures and text help me understand, I was like wow. (S3, Gamified E-book Reading Group, Interview Data, 05.11.2019)

> [...] The pictures made me to dream myself as a hero, you know, how it looked if you were reading about someone and you want to see something that you are reading. I was the hero when I am reading and it is nice to see it when you are reading. (S1, Personalized E-book Reading Group, Interview Data, 05.11.2019)

> [...] I concentrated more and I wasn't off topic. You don't get bored of it. You keep reading, reading, and reading. You don't get tired of reading it and you don't want to stop reading the book. (S2, Personalized E-book Reading Group, Interview Data, 05.11.2019)

> [...] I liked them because it made me know about things that were happening. (S1, Personalized E-book Reading Group, Interview Data, 05.11.2019)

Comments showed that five students who were interviewed felt that personalized e-book reading created a more meaningful context and content for reading instruction. All students felt that the text features (colorful pages, real pictures, quotes, and real-world topics) made the reading sessions more fun and they were more motivated to read. The relationship of the teacher with the students was important to the students during the reading lessons. Students commented that they felt they paid better attention to what the teacher was discussing and that the teacher paid more attention to them. In addition, asking questions was easier in comparison with their prior experience.

4.3.1.3 Online or Printed

In the interview, we asked students which one you preferred to read at school electronic or printed. Nearly all of the students claimed that they would like to read online at school but in the interview they also mentioned that they understand more when the text was printed.

Some of the answers of the students:

[...] I love when I buy printed books. (S5, Personalized E-book Reading Group, Interview Data, 05.11.2019)

[...] Picture stories are my favorite to read. I buy printed books. Until this time I have never bought electronic books. (S5, Personalized E-book Reading Group, Interview Data, 04.11.2019)

[...] I underline the important parts in school course books. (S2, Gamified e-book reading group, Interview Data, 05.11.2019)

Although students were motivated to read e-books, they claimed they preferred to read printed books in their free time as a recreative activiy. They also mentioned that they remember more when they read printed text.

4.3.1.4 Immediate Feedback

In the interview, we asked students the advantages to use electronic reading to personalized and gamified e-reading groups. Nearly all of the students claimed that they would like to read online at school as they get immediate feedback.

Some of the answers of the students:

[...] It was beneficial to take feedback on my performance. (S5, Personalized E-book Reading Group, Interview Data, 04.11.2019)

[...] We saw our mistakes and related topic of our mistakes. (S2, Personalized E-book Reading Group, Interview Data, 04.11.2019)

[...] It was good to take feedback, to see the answers after we completed. (S4, Gamified E-book Reading Group, Interview Data, 04.11.2019)

[...] When we finish the reading, the rocket flew. It was cool. (S1, Gamified E-book Reading Group, Interview Data, 04.11.2019)

In the interview, we asked students the disadvantagous to use reading program to PDF and Printed reading groups. Nearly all of the students claimed that they would like to get immediate feedback.

Some of the answers of the participants:

[...] We answered the test but the teacher collect those papers and gave feedback on the other week after she checked the results. (S2, Printed Book Reading Focus Group, Interview Data, 05.11.2019

[...]We did not learn the correct answers weekly. (S1, PDF E-book Reading Focus Group, Interview Data, 05.11.2019)

In printed and pdf guided book reading sessions participants complained about not getting enough feedback from their teacher. They also claimed that as the answer key was given verbally, they could not take the notes correctly.

4.3.2 Teacher Reflective Journals

The use of reflective journals had been identified as an effective tool to promote reflection. In the following table, themes and codes which were created from the reflective journals of the teachers were supplied.

Tablo 45

Coding Scheme for Teacher Reflective Journals

Theme	Codes	Sample extract
Views related to treatment	* Time *Teacher Intervention *Ownership *Reader Preferences	"Time is limited when applying the guided reading." (PDFBRG) "They liked seeing themselves in the books, I saw the happiness in their eyes." (PBRG) "Teacher just answer the questions and when students need help she was there to help." (GBRG) "I prefer to read long materials in printed forms but now I realize that digital formats could be facilitated in classes." (PDFBRG)
Views related to participation	*Engagement * Feedback *Comfort	"When students read from the screen they focus on the content." (GBRG) "Some students not take feedback some of my questions." (PGRG) "Some students took notes but could not write the new words correctly." (PGRG) "Some of the students could not understand the correct answers." (PDFBRG)

Table 45 (cont.d)

Theme	Codes	Sample extract
Suggestion	*How to conduct guided reading inservice trainings need to be organized *Online sources need to be shared.	"This is the first time I am observing guided reading in the class." (PDFBRG) "We need training to integrate electronic reading in our classes." (GBRG) "I do not know the available reading tools online." (PBRG)

4.3.2.1 Reflective journals of the control group (CG)

As mentioned in the Methodology chapter, the course teacher was asked to focus on reading the printed e-book reading group and to keep a reflective journal every week. Data analysis showed that there was a shortage of some parts of the course to be run as expected from the read group's printed book reading program.

4.3.2.1 Time constraints

Based on the reflections of the printed book reading group teacher, it was noted that the weekly journal contained a comment on the difficulties of keeping up with the speed of the course and not having enough time to complete the tasks, as discussed below:

> […] They have not been able to do some of the activities today, again. The teacher was required to assign the tasks as homework. (T1, Printed Bbook Reading Group, 05.11.2019)

> […] They were able to cover some discussion about the book after finishing the guided reading, some of the students were able to discuss, but due to time limits. Therefore, due to a lack of instruction some students struggled to fulfill the requirements of the program. (T2, Printed Book Reading Group, 05.11.2019)

It could be said that lecturing takes a lot of time, which made the teacher thought it often prevented the planned activities from being done. It could be concluded therefore that the teacher required more time to complete the exercises and was not pleased with the success of the students due to lack of guidance.

4.3.3.2 Lack of Engagement:

When teaching she noticed that some of the students were very involved and interested in the lesson, the others were overwhelmed and did not take part in the lesson.

As this condition is disturbing the teacher, she writes:

> [...] Students asked some questions but I could not answer all of them. Once again I had the chance to see that the more involved the students are, the more attentive and engaged the session is. There were still silent and inactive students. (T1, Printed Book Reading Group, 05.11.2011)
>
> […] Making them engage in the lesson is difficult at times, they seem so disconnected. (T2, Printed Book Reading Group, 05.11.2011)

Based on this statement, it could be inferred that the teacher was not happy with the students who were participating to the lesson and she was worried about those distracting students in the class. It could be inferred that student involvement was high, but it was difficult for the teacher to encourage all students at a time.

4.3.4 Reflective Journals of Experimental Group.

Reflective journals were mentioned earlier in the methodology part, the course instructor was asked to focus on the gamified / pesonalized / PDF e-book reading groups and to maintain a reflective journal weekly. The findings showed that the observer teacher of the gamified, personalized e-book reading groups felt satisfied with the lesson from different ways like versatility, communication, engagement, etc.. And teachers also commented on some of its negative aspects.

4.3.2.2.1 Learning Environment

The participants were found to be practicing independent reading during e-book reading lessons. The results suggested that this learning environment might encourage their reading skills and students take more responsibilities.
The statements below assist these findings:

> […] Students did all the reading on their own and they look really engaged. They monitored their performance, and tried to correct their mistakes while analyzing the stories. (T1, Personalized E-book Reading Group, Journal Data, 23.10.2019)

> […] Most students had no idea what the term "insult" meant. They learned it themselves, while they were reading, doing some internet research. They then took notes on their online dictionary and gave an example to illustrate the concept. (T2, Gamified E-book Reading Group, Journal Data, 23.10.2019)

All in all, teachers' reflections found that e-book reading lessons offered students the ability to plan their path of learning or discover new ways of learning on their own. In addition, it could also be concluded that such an *"autonomous learning environment"* provided students with the ability to learn in individually diverse ways. They also added that even though all the participants had gone through some pedagogical and technical challenges, they were willing to use electronic reading; their answers indicated that this was mainly because they believed the necessity to make use of technology in teaching, and had already witnessed its benefits especially to motivate their students.

4.3.2.2.2 Minimal Teacher Intervention.

Concerning the results involving limited participation of teachers, reflective journals of the teachers showed that teachers only need to participate the class whenever the students needed clarification for any instruction. The participant teachers said the teacher who was conducted the class did not teach actively but the students were doing all the tasks by themselves.

This could be examined by the following excerpts.

> […] The teacher didn't lecture, she just observed the students. Surprisingly, she hasn't even helped them. she merely gave feedback. Without her guidance, they focussed on their readings. They did work independently. (T1, Personalized E-book Reading Group, Journal Data, 06.11.2019)

> […] The teacher was absolutely free and the students learned by themselves. She had taken her time and relaxed, watching the children enjoy reading. (T2, Gamified E-book Reading Group, Journal Data, 30.10.2019)

> […] They never approached the teacher about the texts in the story or the vocabulary. When they came across with an unknown word, they just used an online dictionary and took notes. (T1, Personalized E-book Reading Group, Journal Data, 06.11.2019)

To conclude, depending on the reflections of the teachers, it was possible to infer that e-book reading classes required comparatively less teacher assistance as the students were willing to finish the task and the associated acitivities alone. Furthermore, the role of the teacher was to observe the class, then to provide clarification when students need feedback being ready to assit the students.

4.3.2.2.3 Reading Pace and Discomfort

When analyzing the results, it was shown that teachers in both the gamified, personalized , and PDF e-book reading groups were satisfied as they had enough time for the activities and contact with the students during the exercises they were achieving. They claimed in their reflections:

> […] Having free time in the classroom supplies the teacher to give more feedback and to observe students performance and guide students when help is needed. (T2, Gamified E-book Reading Group, Journal Data, 30.10.2019)

> […] Having personalized reading texts in the class, students focused more and the teacher had more time to monitor. (T1, Personalized E-book Reading Group, Journal Data, 30.10.2019)

Effective technology integration gave teacher time to support learner needs.

[…] I do not think that reading from screen is comfortable. Whenever I read online, it makes me tired. (T1, Personalized E-book Reading Group, Journal Data, 10.10.2019)

[…] I sometimes read online and I spend more time when I read online. For instance when I read printed page if I spend 1 minute. If I use screen, It becomes 10 minutes. Screen is distracting. (T2, Gamified E-book Reading Group, Journal Data, 10.10.2019)

[…] I never read online, when I need to read something, I just take a printed copy of the e-mail or cook recipe. (T3, PDF E-book Reading Group, Journal Data, 10.10.2019)

[…] I read from the screen when I use social media and short messages. If it is a page or less, I prefer to read from the computer monitor or my mobile phone. (T4, Printed Book Reading Group, Journal Data, 10.10.2019)

When teacher were observing the researcher and taking notes of their observation, they all said they thought that students were going to read slower from the screen. Before the study, teacher had a prejudice against screen reading as they thought that it was going to take longer than the usual reading sessions. Teacher in the journals also generally wrote their journals in the first week that reading online was not comfortable and easy to use in classes. According to literature, people who read online generaly report that it was not comfortable and it makes them tired. One teacher also wrote that she liked physical experience of the printed text.

4.3.2.2.4 Ownership and Readers Preferences

When analyzing the results, it was shown that teachers in all groups wrote physicial existence of the books and ownership. Some of their comments were below:

[…] I do not think that reading from screen is useful. When I read something, I need to take notes, and color the parts which are important. When I read online, I do not have this chance. (T1, Personalized E-book Reading Group, Journal Data, 10.10.2019)

[…] I do not think that reading from screen is useful. When I read something, I need to take notes, and color the parts which are important. When I read online, I do not have this chance. (T3, PDF E-book Reading Group, Journal Data, 10.10.2019)

[…] It does not give me the pleasure of printed text. (T2, Gamified E-book Reading Group, Journal Data, 10.10.2019)

[…] When I have the printed book in my hand, I like the texture of it, I love turning pages or underlining the sentences I like. (T4, Printed E-book Reading Group, Journal Data, 10.10.2019)

Oveall, participant teachers at first claimed that they liked to have the book printed. As they had a chance to underline, and to take notes.

4.3.3 Field Notes of the Researcher

To find out if there was a difference between the forms of interaction among the printed and electronic reading, the researcher took field notes throghout the study. The researcher monitored the interaction in the class, created field notes. In the basis of certain reports, differences were recorded. The researcher wrote in the field notes:

[…] The students look really motivated and on task while they are reading personalized stories. They found enough time to ask and get feedback from me. Most of their faces are bright and cheerful. (R, Personalized E-book Reading Group, Journal Data, 10.10.2019)

[…] When I introduced the gamified e-book reading platform, all students seem motivated to read the stories online. Whenever they need help, I was there to solve. (R, Gamified E-book Reading Group, Journal Data, 10.10.2019)

Depended on these observations, it was possible to infer that students had the advantage to obtain response about the parts they did not understand. We could conclude that it was very useful as it increased the level of awareness about the subject and they could apply their information in the activities.

It had also been noted, though, that only some and most of the time the same students had been involved and willing to participate, react and express their opinions.

The teacher said in light of this finding:

> [...] The same students ask questions and I answered them. The others seem reluctant to express their thoughts or answer the questions. (R, Printed E-book Reading Group, Journal Data, 10.10.2019)

On the basis of those notes which were taken by researcher, it could be understood that while it was beneficial for the student to interact with the teacher with the help of questions about the topic during the lesson and gain for the teacher to be able to engage with questions and answers and warm-up activities in class time, this did not seem to be as good as anticipated. The reason of this could be because of the students' differences in learning speed. In other words, slow students could have difficulty following the lesson and comprehending at the same time. Consequently, the teacher often seemed to find it difficult to handle the variations between weak and strong students.

According to the notes taken during or after the classroom practice about the student-teacher relationship, it was found that, due to time constraints, the teacher could not communicate with and learner as much as she wanted in the printed book reading session.

Moreover, some of the students could not get a feedback for their answers.

The researcher clearly shared their views as follows:

> […] The activity appears engaging. Students want to explain their thoughts, but I could only get responses from a couple of students and proceed to the next exercise as the lesson. (R, Printed E-book Reading Group, Journal Data, 10.10.2019)

> […] The class has just completed, and a few students are still trying to show me their products. (R, PDF E-book Reading Group, Journal Data, 10.10.2019)

It could be concluded that the amount of contact during the classroom practice was not appropriate for pdf e-book reading and printed book reading groups. Possibly, the explanation behind this matter was time limits. Therefore, it could be argued that it would be safer if the teacher had sufficient time to cover more efficiently the activities. In addition, the notes about the interaction in the classroom during the experiment showed that the teacher was unable to provide sufficient input to the students, once more because of time limitations which were explained in the following quotes:

> […] When I asked from students to finish the some of the activities at home as the lesson was finished so I could not offer feedback. (R, Printed E-book Reading Group, Journal Data, 10.10.2019)

> […] Pair group activity completed. I requested from the group to share their replies. Some of the students could not express their replies, and therefore they were unable to provide any input. (T4, Printed E-book Reading Group, Journal Data, 10.10.2019)

Additionally, the language learning process required comprehensive teacher input, and it could be concluded that printed book reading and PDF e-book reading failed to provide adequate time for feedback sessions.

Chapter 5

Discussion and Conclusions

5.1 Discussion of Findings for Research Questions

The purpose of the study was to understand the implications of different forms of reading (gamified e-book reading, personalized e-book reading, pdf e-book reading, and printed book reading) on reading comprehension, motivation, reading time, and digital attitude of sixth grade state secondary school students in EFL classes. Additionationally, the present research attempted to examine its effect on the teachers' expectations and thoughts of the reading program regarding the introduction of various types of reading in middle school environment. To achieve the purposes of the recent study, the study's quantitative data were collected by using Reading Motivation questionnaire as a pre-post-test, reading comprehension questions after students finished each story, digital attitude scale as a pre-post test, and reading time of each student in each story. Qualitative data were collected with the reflective journals of the teachers, focus group interviews with the students and field notes of the researcher. The purpose of the following section was to discuss the study findings with the research questions.

5.1.1 Discussion of the findings of Research Question 1: Is there any difference between the 6th grade EFL students exposed to gamified e-book reading, personalized e-book reading, PDF e-book reading, and the ones engaged in printed book reading in terms of their reading motivation and reading time?

The aim of the first experiment question was to understand the influence of e-book reading sessions on grade six EFL students reading motivation and reading time. In the experiment 5 weeks treatment was applied and the effects of motivation and reading time was examined. Four different reading programs were applied and the effect of these reading programs on motivation and reading time was analyzed. Reading motivation questionnaire was used before and after the treatment. Each week, each students reading time was noted and compared. The subsequent null hypothesis that there was no statistically significant difference in reading motivation scores between the experiment and control groups, was tested for the quantitative aspect of the study. This involved comparing motivation scores of the students on a questionnaire with a significance level of *.05*.

Another subsequent null hypothesis that there was no statistically significant difference in reading time between the experiment and control groups, was tested for the quantitative aspect of the study. This involved comparing reading time of the students with a significance level of *.05*.

The quantitative findings showed a significant difference between the pre-test and post-test reading motivation scores and reading time. Both personalized e-book reading or gamified e-book reading lessons had a very positive effect on the reading motivation of the participant students. At the beginning of the study, the motivation and reading medium of students were linked. As other researchers in educational technology argued in precious studies, we hypothesized that reading medium will affect reading performance in the planning stage (Hull, Stornaiuolo & Sterponi, 2013; Kneer & Glock, 2013). And, in this study, hypothesis was confirmed.

General reading motivation of the gamified e-book reading group was the highest. It could be concluded that the gamified electronic book reading had a positive effect on sixth-grade middle school students' general reading motivation. It had been anticipated that an application of gamification in EFL environment improved reading motivation because the focus of gamification was enhancing students' motivation but until now there was not which claims that a gamified reading environment was related to a significant increase in motivation in Turkish EFL students. Results were parallel with findings based on previous studies, where elevated levels of students' motivation were reached in gamified learning atmosphere (Banfield & Wilkerson, 2014; Buckley & Doyle, 2016). It was also possible to state that reading gamified storybooks supply a strong context for immersion and story enjoyment. Gamification increased motivation of the students positively (Dicheva, Dichev, Agre, & Angelova, 2015; Gee, 2007; Kapp, 2012; Keller, 2008; Lee & Hammer, 2011; Lister & College, 2015; Ozkan & Samur, 2017; Zimmerman, 2008). The reason of the high reading motivation of the gamified electronic book group could be electronic storybooks had become popular and they were motivators for personal reading (Brown, 2011).

On the other hand, according to National Literacy Trust's annual survey children's reading motivation and daily reading continue to decrease and they observed a shark decrease in daily reading, which was now at its lowest level since they started reporting it in 2005 (Clark & Teravainen-Goff, 2020). In What Kids are Reading Report (2020), motivation was key for sustained, daily reading practice and in the middle school, it was more important than ever to continually help students discover new books and topics. It was possible to state that to motivate students to read, the power of electronic books can be used but those books needs to be chosen by the educators before suggesting to the learners.

Another possible reason for increased motivation finding was the different format in which information was supplied in electronic reading compared to printed reading. Novelty effect could be the reason of this increased motivation. *"Novelty effect"* was defined as an improvement in learning when a new technology was introduced, attributable to increased interest in the new technology, that tended to diminish as students become more familiar with it (Metcalf et al., 2019). As the participants were not familiar with the gamified and personalized reading formats, they could be motivated as they tried a new format of electronic reading. When the groups were compared printed book reading group had the lowest motivation score, we could state that printed book reading group was the closest application of reading of their previous experience. It could be concluded that as guided printed reading was similar to their previous experience, their reading motivation did not increase.

When the sub factors of motivation was examined, it was possible to claim that personalized electronic book reading increased internal motivation of the students whereas gamified electronic book reading increase external motivation of the students. In personalized e-book reading group, participant students' self-efficacy, compliance and curiosity scores were the highest when it was compared with the other groups. In gamified e-book reading group, participant students' competition, recognition and social scores were the highest when sub factors was compared between groups. It was also possible to state that external motivation was an important factor in general reading motivation as gamified e-book reading groups external motivation was the highest and sub factors of that group underlines the significance of the external motivation.

Self-efficacy expectations were another important factor in evaluating the level and achievement of the computer use by individuals (Deryakulu, Buyukozturk, Karadeniz & Olkun, 2008). In the study conducted, self-efficacy score of the personalized e-book reading group was the highest. Judgments on self-efficacy appear to work out pretty well for student engagement with and learning from digital texts, and there was some evidence to support self-judgment of students (Farah & Maybury, 2009; Mansor, Rasul, Rauf & Koh, 2013). Personalized reading supported the children's authorship and authentic contribution to the stories which were shared in the classroom (Kucirkova, 2018). Although not much was known about personalized storybook reading in 6th graders, it was possible to state that the reader became the hero of the storybook and chanced the elements in the story so this gave power to the reader and increased self-efficacy of the students in personalized e-book reading group. Second group in the ranking results showed that gamified e-book reading groups self-efficacy scores were also increased.

Self-efficacy of the gamified e-book reading group was not the highest although in the literature some other studies claimed that gamification increased the self-efficacy of the learners in EFL classes (Flores, 2015; Suryasa, Prayoga & Werdistra, 2017). The reason of this could be the power of the personalized e-book reading environment as the mentioned studies did not examined gamified learning with personalized learning environments. Competence and autonomy regarding task meaningfulness was affected by badges, leaderboards, and performance graphs (Sailer, Hense, Mayri & Mandl, 2017). The reason of this could be the use of badges, leaderboards and performance graphs in the gamified e-book reading group.

The lowest score in self-efficacy belonged to printed book reading group, the rational behind this could be the nature of the guided reading as it was directed by the teacher, the self-efficacy scores of the learners did not change.

Compliance was the next factor which was examined in the study. In the personalized e-book reading group, compliance scores was the highest. Other researchers also reached parallel results by claiming the relationship between compliance and extrinsic motivation and it increased when personalized e-reading (Kucirkova, 2016; Fitzgerald et al., 2017).

Results of the study also illustrated that there was a significant difference between students recognition score which was a sub-factor of external motivation when a gamified environment was used. In gamified e-reading group, recognition scores was the highest. When the literature was analyzed, the use of gamification in EFL classes increased the feeling of you were recognized in the society (Alsawaier, 2017; Hamari & Hoivisto, 2013; Lin, 2008; Sailer, Hense, Mayri & Mandl, 2017; Werbach and Hunter, 2012). The second group which increased recognition score was personalized e-book reading group. The rational behind this was the power of the personalized e-book reading program. In the platform each student was unique and had a chance to be the main character of the story, changed the ending of the story. In printed book reading and pdf book reading groups recognition scores were similar as both formats did not give any importance to the individual differences and in guided reading program not all students had a chance to have a voice so they might think that they were not recognized.

Curiosity of the personalized group showed the highest difference between groups. When personalized fiction stories were used in the classes, they inspired "curiosity" (Figueroa-Flores, 2015; Kucirkova, 2017; Donohue et al., 2020). Another group which showed significant difference in curiosity scores was gamified e-book reading group, the reason of this could be the athmosphere in the gamification elements of the reading platform used. In the literature some studies stated that when gamification was facilitated in classes, it increased the curiosity level of the students (Lazarro, 2004; Lee & Hammer, 2011; Papp, 2017). Curiosity scores of the both printed book reading group and pdf e-book reading groups were close, the rational behind this could be in both groups guided reading programs was used and although one of them was conducted electronically, they scored similar. It was possible to claim that as printed and pdf book reading programs used guided reading, their curiosity scores were close.

In gamified e-book reading group, social motivation of the students increased. When the literature was examined, we found out similar results by some researchers. They claimed that social relatedness was positively influenced by avatars, a meaningful story, and team mates (Sailer, Hense, Mayri & Mandl, 2017; Hamari & Koivisto, 2018). The participants who used electronic reading increased their social scores but in printed group they did not show any statistical difference. It could be concluded that the use of electronic platforms made students to share their experiences with each other.

Gamified e-book reading group scored the highest in competition. Gamification encourages the intuition to win and beat others, it breeds extrinsic motivation of the students (Hamari et al., 2014; Hanus & Fox, 2015; Mekler et al., 2017; Sardi, Idri, Fernandez-Aleman, 2017; Shunk, 2014). The lowest competition score belonged to printed book reading group, although students competed with eachother to answer the questions of the teacher, this condition did not increase their competition scores in printed guided reading and pdf e-book reading groups.

The argument was compatible with the studies findings. The participant students spent less time reading in both personalized e-book reading and gamified e-book reading lessons as opposed to PDF e-book reading and printed book reading classes despite in previous studies the reader spent more time on screen and they used scrolling in the screen reading formats (Chen & Lin, 2016; Delgado et al., 2018; Eklundh, 1992; Evans et al., 2009; Kerr & Symons, 2006; O'Hara & Sellen, 1997; Sanchez & Wiley, 2014). In this study, scrolling in online formats was not used, so students spent less time on gamified and personalized e-book reading versions). In the PDF e-book reading group they used scrolling. Students spent less time while reading digital texts when they did not have scrolling (Baron, 2017; Hooper & Herath, 2014; Sackstein, Spark & Jenkins, 2015; Ziming-Liu, 2005). When an individual read online, they tended to search and jumped around to find keywords in a limited period of time to get as much information as possible (Ziming-Liu, 2005). Some other researchers also concluded that there was not influence of paging and scrolling on reader satisfaction (Eyuboglu & Orhan, 2011). When students read electronically, they spent less time for reading more time for feedback and questions. Good computer fluency building programs use assessments and feedback to find the students' zone of proximal development (ZPD) and adjust the challenge levels for individual students. This responsive adaptation can provide exactly right level of challenge with the appropriate scaffolding to bridge students to the next level of skill. For students of different skill levels the privacy of computer work minimizes the concern about social embarrassment they may feel about incorrect verbal responses in class. After direct instruction and classroom activities, computer practice can give students immediate feedback, correction, practice, and reinforcement with fluency building programs at their instructional level when teacher is working with other students.

To conclude, Gamified e-book reading increased the general reading motivation of the students whereas personalized e-book reading increased inner motivation of the students. Moreover, when gamified e-book reading was used, students' competition, recognition, social scores increase, so it increased the external motivation of the learner. Reading time decreased in the groups which used electronic reading whereas printed book reading group spent the highest time while reading the text.

5.1.2 Discussion of the Findings of Research Question 2: Is there any significant difference between personalized e-book reading, PDF e-book reading, gamified e-book reading, and printed book reading in the reading comprehension scores towards EFL reading of the 6th grade students?

Reading comprehension levels were tested in the current study when reading digital text (PDF e-book reading, personalized e-book reading and gamified e-book reading) and print text. The participating students were middle school students in sixth grade. The three classes each read five fiction stories digitally and another class read in print. Before those fiction books choosen, popular books which were read by Turkish EFL learners was analyzed and chosen 10 books by two field experts. Those ten books shared with the four teachers who were the participant of the study. Teachers analyzed the books and decided the books which were used in the study. In all experiment and control groups the same books were used, the same multiple choice questions were answered by the students. The level of the books was organized according to the English Proficiency scores.

The data collected and analyzed were used to investigate the type of text on comprehension scores. The subsequent null hypothesis that there was no statistically significant difference in reading comprehension scores between the experiment and control groups, was tested for the quantitative aspect of the study. This involved comparing reading comprehension scores of the students on multiple questions with a significance level of *.05*.

Recent research shows that children understand texts better on paper than on computer (Dahan-Golan et al., 2018) and in some other studies, electronic reading was found to be linked to shallower processing (Baron, 2015; Lauterman & Ackerman, 2014). We were expecting this result to be repeated but in overall reading comprehension scores, we could not reach statistically signitificant difference between groups. When the literature was examined, we found some studies which supported our findings. These researches claim that there was no difference between the media and the comprehension scores (Hermena et al., 2017; Kerr & Symons, 2006; Margolin, Driscoll, Toland, & Kegler, 2013; Noyes & Garland, 2003; Ramalingam, Naidu, Hariish, & Naidoo, 2018; Rockinson-Szapkiw, Courduff, Carter, & Bennett, 2013; Yilmaz, Orhan, Ugras & Kayak, 2014). Constructing mening from text or spoken language is not a separate skill, but a merging of all acquired prior knowledge, personal experience, and vocabulary with the strategies of deductive and inductive reasoning and making connections. To be successful at reading comprehension, students need to actively process what they read. That processing skill requires that students have automatic reading skills and fluency, necessary vocabulary, and text-appropriate background knowledge. Successful comprehension is augmented when students have practice with strategies for monitoring their understanding, increasing their intrinsic interest in the text, and creating goals and purpose for their reading.

According to the findings obtained from the research, student reading comprehension performance in personalized reading group had no statistically significant effect of it. The results obtained from this study for the sake of success supports the results of the researches (Anand & Ross, 1987; Balcı, 2016; Bates & Wiest, 2004; Çakır Balta, 2008; Çakır et al., 2016; Ku, Harter, Liu, Thompson & Cheng, 2007; Ku et al., 2004; Regis, 2017). However, in the literature some of the researchers who had conducted research on personalized teaching, they found that it had a significant effect on its success. From these studies some were Akinsola and Awofala (2009), Dutke et al. (2015), Ku and Sullivan (2002), Lopez and Sullivan (1992), Sullivan and Yu (2014), Sezer (2015), Zeytçioğlu (2017) carried out the studies. Bernacki and Walkington (2018) claimed that different at the end of these studies conducted in fields and levels, it had been found to have a significant effect. It was possible to state that reading e-books were fairly new to the students and they were not familiar with the possible tools. Although they were motivated to read e-books, students did not show any difference in their comprehension scores. This could explained with novelty effect.

Findings of the recent experiment illustrated that electronic reading was the most advantageous while acquiring new vocabulary when they focused on the the text in both pdf and printed format. Some studies concluded that e-books provided students with anonymity to receive assistance as opposed to printed versions of books that required publicly asking the teacher (Greenlee-Moore & Smith, 1996). E-books had immense ability to reinforce the definition of the word for children by being incorporated in a computerized dictionary (Lewin, 2000; Segers, Takke & Verhoeven, 2004; Verhallen, Bus & de Jong, 2006).

Moreover, if students were afraid to ask for support, they preferred to continue reading even though they did not comprehend any of the meanings of the word. A student might continue to read without understanding, because it was safer than suffering from public failure (Greenlee-Moore and Smith, 1996). Once students had the chance to use e-book applications and websites, they could download and started reading books within minutes, at their reading rate. *'Electronic reading'* did not increase children's story comprehension but it had a positive influence of the vocabulary learning. PDF e-book reading group performed the highest scores in vocabulary.

Gamified and personalized e-book reading groups vocabulary performances were lower. It was possible to state that functionalities like narration, word pronunciation, animations, and sound effects that support the text might assist in decreasing the effort to decipher individual words and aid a student concentrate on text (Lewin, 2000; Matthew, 1997; Miller, Blackstock & Miller, 1994). Like one of the studies conducted previously, we found out that with personalized reading, students scored higher in story elements and problem solution activities (Kucirkova, 2018). In personalized stories, students comprehended the story elements better as they were the main agent in the story.

All in all, it could be understood that when students were reading e-books, there was no statistically significant difference in their comprehension scores and when features of questions were analyzed, different groups performed better so according to the needs of the student, teacher could apply different things. For instance: if the focus of the teacher was vocabulary, teacher could prefer pdf e-book reading.

5.1.3 Discussion of the findings of Research Question 3: Is there any significant difference among personalized e-book reading, PDF e-book reading, gamified e-book reading, and printed book reading in the digital attitude towards EFL reading of the 6th grade students?

The purpose of the first experiment question was to test the influence of e-book reading sessions on grade six EFL students digital attiude. In the experiment 5 weeks treatment was applied and the effects of digital attitude was examined. Four different reading programs were created and the effect of these reading programs on digital attitude was analyzed. Digital attitude questionnaire was used before and after the treatment. The subsequent null hypothesis that there was no statistically significant difference in digital attitude scores between the experiment and control groups, was tested for the quantitative aspect of the study. This involved comparing digital attitude scores of the students on a questionnaire with a significance level of *.05.*

The results of this study indicated a statistically significant difference existed in digital attitudes among instructional reading environments. This instructional reading environment had significantly influenced the digital attitudes scores.

Participants in the printed book reading and PDF e-book reading group had lower digital attitude scores than gamified e-book reading and personalized e-book reading groups. A strong relationship between digital attitude and technology integration in classes were mentioned in previous studies (Baker & White, 2010; Hamari & Eranti, 2011; Lin & Bhattacherjee, 2010). It is possible to state that the use of electronic reading has a vital place in EFL classes and when students use digital platforms to read, their attitude might change positively especially in reading for academic purposes. In this research, the attitudes of 6th grade students towards reading at a high level had been found to be positive and the finding of the research was supported by many previous studies (Balcı, Uyar & Buyukikiz, 2012; Başaran & Ateş, 2009; Durualp, Çiçekoğlu & Durualp, 2013; İşeri, 2010; Sallabaş, 2008). When students use digital reading in their classes, their attitude change positively.

Gamified e-book reading groups academic digital scores was the highest. The rational behind this could be students consider reading storybooks in class time as academic reading. As when post recreative digital and paper scores were examined, we found out students prefer to read printed books as a free time activity. Students needs to encounter electronic reading opportunities to chance this impression. Exposure to books from sources other than the library often predicts achievement in reading (Evans, Kelley, Sikora, & Treiman, 2010; Tse, Lam, Ip, Lam, Loh, & Tso, 2010). As schools transition to paperless classrooms across the globe, the use of digital devices as reading resources had become increasingly relevant (Giebelhausen, 2015; Shishkovskaya, Sokolova, & Chernaya, 2015). Paperless classrooms encouraged the reader to adjust the text size, highlight important passages and search for relevant words outside of the text by clicking a button (National Center for Education Statistics, 2013).

Our study was therefore intended to describe differences in attitudes toward reading in Turkey, but among EFL student. This allowed us to document attitudes toward reading, focusing on the transition from elementary to middle school, in a context with different linguistic practices but a similar education system, rather than a European one featuring a different curriculum. Overall, our results corroborate those of previous research, regarding differences in reading attitudes according to sex and type of reading (leisure vs. academic), showing a persistent sex effect among pupils in grade 6, favoring girls (McKenna et al., 1995, 2012), and more positive attitudes toward leisure reading than toward academic reading, even though there was a negative trend in attitudes toward both types of reading across grades. However, our finding that significant differences in reading attitudes were restricted to the period of sixth grade contrasts with previous findings, which generally show a steady decline in attitudes across both elementary school (Lazarus & Callahan, 2000; McKenna et al., 1995) and middle school (Ley et al., 1994). The how and why of these changes during in sixth grade in our study context are still unclear, but the transition between the two levels should probably be regarded as one of the factors influencing young people's attitudes toward reading, at least in some contexts. These discrepant results also suggest that it is difficult to assume that the results of research on this subject are transferable, thus underlining the relevance of closely documenting these differences and changes in attitudes toward reading among pupils in the course of their schooling in a range of linguistic and education contexts.

To conclude, when the digital attitude scores was analyzed in detail. Students who used electronic reading in the experiement, they had higher digital attitude toward using technology in their classes. However, students still prefer to read recreative reading materials in printed versions.

5.1.4 Discussion of the findings of Research Question 4: What are the reflections and concerns of the secondary school teacher’s regarding the reading program applied (gamified e-book reading, personalized e-book reading, PDF e-book reading, and printed book reading)?

In this study, each teacher submitted six reflective journals. So, every week four reflective journal were submitted. Also the researcher collected field notes. These data were analyzed via content analysis. In the study, reflection of the teachers had a vital importance as teachers enjoyed the practice, they might have a tendency to integrate e-book reading in their classes in the future. Some of the outcomes obtained from the content analysis of reflective journals were in line with the results from the reflections of the students. To begin with, the students' reading motivation and comprehension were developed at the of the treatment, according to teacher observations. It was correlated with improved EFL reading experience.

Teachers’ epistemic beliefs were also important when they were integrating technology into their classes. If the teacher believed knowledge was obsolute and could not be changed, this might influence his/her teaching. It turned out that teachers who believed that knowledge was not absolute and unique might change with new findings even if they were written in the book, and those teachers directed children to the internet to do more research. Epistemology of knowledge is also important. All of the students in the study mentioned that although they have a computer lab at school they have never been there. Teachers reported that they have noticed a number of children following text lines on their computer screens with a finger. This activity in reading has also been noticed among college students who are 19 years of age completing a machine reading comprehension test (Margolin et al., 2013). Teacher explained this in their reflective journals by claiming that they did not use computer laboratory as they consider technology as a distruption. This is called in the literature as functional fixedness or cognitive blindness. It is defined as the way the ideas we hold about a function of objects can inhibit our ability to use the object for a specific purpose (Birch, 1945; German & Barnett, 2005). Teachers use media in their life as an entertainment tool, when they come across the term technology integration, they ruminate it as something which harms the learning environment.

In the first week reflective journals of the teachers, all teachers claimed that they did not understand the long texts online. When the literature was analyzed, some other studies reached similar results. Readers mention they prefer the printed version of the books because of the sense of ownership that the printed text offers (Armitage et al., 2004; Griffith, Krampf, & Palmer, 2001). Teachers in the experiment also wrote their journals in the first week that reading online was not comfortable and easy to use in classes. According to literature, people who read online generaly report that it is not comfortable and it makes them tired. One teacher also write that she likes physical experience of the printed text. Readers of digital texts frequently report that reading online makes them tired and creates discomfort (Rouet, 2000) and that the lack of a "physical text" builds a feeling of unfortable reading environment (Armitage et al., 2004). More precisely, as schools transition to paperless classrooms across the globe, the use of digital devices as reading resources has become increasingly relevant (Giebelhausen, 2015; Shishkovskaya, Sokolova, & Chernaya, 2015). Paperless classrooms encourage the reader to adjust the text size, highlight important passages and search for relevant words outside of the text by clicking a button (National Center for Education Statistics, 2013).

Teachers claimed that students’ in e-book reading experimental groups enjoyed the process and they had the chance to get immediate feedback. Moreover, they also talked about the minimum level of teacher involvement in experimental groups and assuming the observing position listed in the reflective journals connected to the students 'statements referring to a reduction in the support of teachers. At the beginning of the implementation, the teacher had been helping them fairly more. Substantially, the teacher wrote in their reflections that by merely mediating throughout the lessons, they contributed to an autonomous reading environment. It is possible to conclude that if technology integration is planned carefully, it might drive self-regulated learning and students self-efficacy might increase. Liman-Kaban, Adiguzel and Ozaydin (2019) claim that self regulated learning (SRL) can be described in terms of students determining their individual learning goals, selecting their learning aids and actively using them for their learning, as well as reflecting, monitoring and evaluating their learning approach to gain a deeper understanding of content.

Teachers also talked about the positive motivation in the e-book reading experimental groups. When the literature was analyzed, similar results also reached by Kaynar, Sadik and Boichuk (2020). The researchers stress that in early childhood children need to be introduced e-book as it increase the students' interest in reading and their reading competencies. Most of the teachers found e-books useful because they provide an enjoyable reading experience for their students. The teachers also pointed out the importance of parental involvement while integrating technology into language learning in the early childhood level. It can be concluded that the students whose parents are more interested in technology and language learning perform better in learning activities.

All in all, teachers' reflections found that e-book reading lessons offered students the ability to plan their path of learning or discover new ways of learning on their own. In addition, it could also be concluded that such an "autonomous learning environment" would provide students with the ability to learn in individually diverse ways. Liman-Kaban and Boy-Ergul (2020) mentioned that teacher considered technology use in the classroom as a distraction. At the beggining, teachers had some kind of prejudice against electronic reading, then they realized the opportunities technology could offer. Moreover, Liman-Kaban and Boy-Ergul (2020) claimed that there is a need for pedagogical, technological and technical teacher training. They also added that even though all the participants had gone through some pedagogical and technical challenges, they were willing to use technology; their answers indicated that this was mainly because they believed the necessity to make use of technology in teaching, and had already witnessed its benefits especially to motivate their students.

When teacher were observing the researcher and taking notes of their observation, they all said they thought that students were going to read slower from the screen. When we analyzed the literature, we found similar studies about reading pace. Some studies found that reading from screen was slower than reading from paper

(Evans et al., 2009; Gould et al., 1987; O'Hara & Sellen, 1997). But we reached contrasting result. Students which were in the electronic reading groups read faster than printed reading group. Before the study, teacher had a prejudice against screen reading as they thought that it was going to take longer than the usual reading sessions.

Absence of teacher education on how to conduct effective reading can be another reason of the teachers not using screen reading or computer lab at school. According to *"What's Hot in Reading Report"*, the majority (60%) of participants do not accept that teacher preparation programs in these days are equipping educators with the skills they need for effective reading instruction (ILA, 2020). The report also adds that the biggest challenge for equity is the variability of teacher knowledge and the effectiveness of teaching. In the report, they asked the professional development needs and 49% of the participants claimed that they need training on using digital resources to support reading instruction. According to National Literacy Report which is conducted in the UK in 2019, more than thirty percent of the young individuals report that they cannot find things to read that interest them (Clark & Teravainen-Goff, 2020). In the interview our participants also claimed that they did not know how to reach quality reading material online.

Most experts think that learning optimally from e-books requires help and encouragement from adults (De Jong & Bus, 2002; Kim & Anderson, 2008; Korat, Segal-Drori, & Klein, 2009). But the teachers who observed the students mention that online learning experience help their students to become more autonomous. In line with official guidelines on the use of digital technologies for innovative and autonomous work, technology provided abundant opportunities to work creatively through modes and media and varied communicative opportunities by supplying images and icons simultaneously or in place of words (OFSTED, 2008). This condition helped quiet children, children who learn English as a foreign language to interact and participate more efficiently in whole class and small group activities.

All in all, it is possible to conclude that teachers in the experiment had prejudice against integrating technology in their classes. However, after they observed the classess, they realized the advantages it provides such as immediate feedback, more teacher-student time, and comfortable learning environment it created.

5.1.5 Discussion of the findings of Research Question 5: What are participant students's reflections and concerns about the implementation of the reading program applied (gamified e-book reading, personalized e-book reading, PDF e-book reading, and printed book reading)?

After each experiemental and control group completed the reading programs, they had focus group interviews. Researcher entered each class and asked five volounteers for the interview. Focus group interviews happened at the school computer laboratory. Researchers field notes, teachers reflective journals, and focus group interviews were used in the study conducted.

Obviously, the detailed content analysis of focus group interviews expressed by the twenty students revealed that most of the interwevees were of the opinion that e-book reading lessons were advantageous. Consulting their friends when reading from screen allowed their reading abilities to develop quicker, as students emphasized, students become more autonomous (Borja et al., 2015). Another key factor in ensuring that the instruction is responsive to student needs improve the reading comprehension of students (Allington & McGill-Franzen, 2013).

As when we asked learners they all claimed that it is their first time in the computer library. Young children could benefit from reading e-books (Ciampa, 2012; Korat & Shamir, 2007). Having grown up in a technology-driven world and, at an increasingly younger age, children are accessing the Internet. Since digital natives have grown up with ever-changing technology, they are likely to have different perceptions and behaviors about digital media use than their teachers (Huang, Liang, Su, & Chen, 2012). Exposure to books from sources other than the library often predicts achievement in reading (Evans, Kelley, Sikora, & Treiman, 2010; Tse, Lam, Ip, Lam, Loh, & Tso, 2010). Although there was a computer laboratory and internet, students claimed that they never used it. When students do not use technology for educational purposes, they can not realize the advantageous it provides. Research results are correlated to Scholastic (2018) results. In the report, they claim that four children out of ten have read book from the screen and most of the children who read from the screen is 56 % state that most of the books they read for entainment are in printed versions, but three in 10 kids read half e-books and half books for print. Our participants also mentioned that they have tried electronic reading before but when they would like to read reacreative reading, they prefer to read printed texts. This is also one of the results of scholastic report which is published in 2018. Sixty-eight percent of children claim that they would like to read books in print, even though e-books are available (Scholastic, 2018). Over the same period, reading electronic books from tablets and e-readers increased remarkably (Scholastic, 2018). So, in one hand many people see reading online is a challenge, on the other hand the number of people who prefer digital books to read is rising. The most recent National Literacy Trust's annual survey which is conducted in 2019, by Clark and Teravainen-Goff (2020) showed that children's reading enjoyment level continues to decrease, and has been at its lowest since 2013 (53% said they enjoyed reading in 2019 vs 53.3% in 2013). In the study, although the students use computer every day, they see printed reading as more convenient and healthy. Children also claimed that they liked the tactile feature of the printed books. Students also are not aware of the free online electronic library sources. Young readers still tend to depend on the suggestions of the adults who are close to them (Zasacka, 2015). Exposure to books from sources other than the library often predicts achievement in reading (Evans, Kelley, Sikora, & Treiman, 2010; Tse, Lam, Ip, Lam, Loh, & Tso, 2010).

Clark and Teravainen-Goff (2020) also underlines that daily reading levels for children are the lowest they've ever recorded, with just 25.8 percent of kids say they 're reading daily in their free time in 2019. Based on research on reading skills for seven hundred twelve students whose ages are 11 to 14, students who enjoy reading are three times more likely continue reading above the average predicted for their age than children who do not enjoy (30.1% vs 8.1%). Young people who read daily in their free time are twice as likely to read above the expected level for their age when they are compared to the children who don't read every day (37.6% vs 14.2%). Children's reading motivation and daily reading continue to decrease.

Briefly, this research results are consistent with the findings of pre-post-test reading motivation and digital attitude, as they both indicate a change in the digital attitude and motivation of the students. The students verified the quantitative results qualitatively by claiming to the significant improvement of their reading and EFL skills, owing to the e-book reading environment supplied. More precisely, as schools transition to paperless classrooms across the globe, the use of digital devices as reading resources has become increasingly relevant (Giebelhausen, 2015; Shishkovskaya, Sokolova, & Chernaya, 2015). Paperless classrooms encourage the reader to adjust the text size, highlight important passages and search for relevant words outside of the text by clicking a button (National Center for Education Statistics, 2013).

When the personalized e-book reading groups discussion is analyzed, we found out that students feel that they own the text as they become the protoganist in the story. Tauvon (1998) supports this idea by claiming that when the child place himself/herself as protoganist of the story, he/she actively participates. In the study, personalized e-book group members were observed as active and they were curious whenever they open the new page of the personalized e-book. Kalyuga, Ayres, Chandler, & Sweller (2013) accept that personal information included into the classes can decrease the cognitive load. Although increased comprehension could not be observed in the study, not only the teacher who observed, but also the researcher monitored activated students in the classroom environment.

The ownership of children's final stories is connected to the way the stories are presented and made available for sharing with other people. In personalized e-book reading group, they read the stories from the web page which is named as *'You are in the story'* which allows both immediate and distant story sharing. In the 'share mode' if they want they can download or share their PDF version of the personalized story with other people. Nearly all of the children in personalized reading group claimed that they shared their PDF versions of the personalized stories with their friends and families. It is possible to state that students inner motivation increased because of the features of the personalized books.

Students also claimed that they did not know online reading sources. What kids are reading report (2020) revealed that middle grades students reading habit start to decline. They also add that children who do not read enough not only miss out on the intrigue and escape reading benefits can provide, but also miss gaining new vocabulary, additional background knowledge, a wider world view, and greater empathy for others. In another report, it supports our reseach results. According to National Literacy Report which is conducted in the UK in 2019, more than thirty percent of the young individuals report that they cannot find things to read that interest them (Clark & Teravainen-Goff, 2020).

Jerrim and Moss (2019) found some evidence that adolescents who spend more time reading, primarily fictional texts (usually novels and stories in books) have substantially greater reading skills than peers who do not read, or read less, literature. The same authors call it the *"fiction effect*", as no correlations have been identified between the level of non-fiction reading, news, newspapers, or comics, and reading capacity. In this study, fiction storybooks were used, students reading motivation was high may be bacause of the genre chosen.

Students in focus group interviews claimed that experimental groups reading motivation increased. The most recent National Literacy Trust's annual survey which is conducted in 2019, by Clark and Teravainen-Goff (2020) showed that children's reading enjoyment level continues to decrease, and has been at its lowest since 2013 (53 % said they enjoyed reading in 2019 vs 53.3 % in 2013). Clark and Teravainen-Goff (2020) also underlines that daily reading levels for children are the lowest they've ever recorded, with just 25.8 percent of kids say they 're reading daily in their free time in 2019. Based on research on reading skills for seven hundred twelve students whose ages are 11 to 14, students who enjoy reading are three times more likely continue reading above the average predicted for their age than children who do not enjoy (30.1% vs 8.1%) (Clark & Teravainen-Goff, 2020). They also claimed that young people who read daily in their free time are twice as likely to read above the expected level for their age when they are compared to the children who don't read every day (37.6% vs 14.2%).

Dahan-Golan et al., (2018) claimed that children prefer reading on screen but change this preference after experiencing a task of reading and understanding on both media, and it was predicted to replicate these research results. As metacognitive judgments of adults were found to be insensitive to medium effects (Ackerman & Goldsmith, 2011; Clinton, 2019), in the study it was anticipated that the same would be accurate with children. A strong relationship between digital attitude and technology integration in classes (Bock et al., 2005; Baker & White, 2010; Hamari & Eranti, 2011; Lin & Bhattacherjee, 2010). Another reason of the increase of self-efficacy can be the feedback supplied students (Schunk, 1999).

To sum up, students facilitated using electronic reading in their classes. Especially, participant students enjoyed the chance of having instant feedback. They also stated they did not know educational platforms.

5.2 Conclusions

The current research adds substantially to the literature while exploring the effects of electronic reading classes on digital attitude, reading comprehension skills, reading motivation, reading time, and of the 6th grade Turkish EFL students. The research findings showed that both students who participated the study had improved their skills and increased their reading motivation after implementation of reading. In addition, it was shown that the students had positive attitudes towards electronic reading as they were able to accomplish their goals more easily at their respective L2 levels and alone.

It is possible to state that teachers need to decide to use e-book reading after they examined the technical possibilities and the children's answers and the classroom context. E-book reading can be facilitated to assist the language and reading comrehension skills of children, as well as digital literacies and social skills.

Teacher's reflective journals also shows that the students felt more involved and improved reading skills with the assist of the gamified e-reading and personalized e-reading offered, as well as the treatment increased self-efficacy of the students in gamified e-book reading group. According to Bandura (1986), self-efficacy beliefs are the judgment about our ability to do something, it makes individuals to realize the necessary arrangements and practices to achieve success (Linnenbrink & Pintrich, 2003). Autonomy reminds teachers that the process of reading storybooks for children must be autonomous, action-oriented rather than passive story consumption, regardless of commercial, ideological or political pressures.

The novelty of this research in the field of reading comprehension in digital environments lays in using gamified and personalized books as the focus rather than e-books. This was also one of the few studies that examined storybooks, not educational books, in the area of gamification and personalisation. Our analysis contributed either to reading comprehension or gamified/personalized storybook reading. It calls experts to consider to conduct a new research on the reading comprehension performance of the students in gamified/personalized books in their studies. This also urges researchers to pay attention to gamification tools' effectiveness while encouraging reading.

Teachers and parents need to be informed about the possible e-learning platforms. Students also are not aware of the free online electronic library sources. Children also claimed that they liked the tactile feature of the printed books. Students also are not aware of the free online electronic library sources. Young readers still tend to depend on the suggestions of the adults who are close to them (Zasacka, 2015). In Poland, Zasacka (2015) carried a comparative study on 12-13 year olds to understand their reading behaviour and digital media habits. Highlights of the study are; more than 70 % of the participants claimed that they read texts which are created by their peers (blogs and fanzines). 37% percent of the participants actively contribute content by creating their own websites and blogging (Zasacka, 2015). Nine percent of the respondents claimed that they read books as a leisure activity (Zasacka, 2015).

In this study, as the group of participants were limited we could not observe the impact of the parents. When a comparative study which was conducted in Poland stresses that there was a negative correlation between parents' educational background and the size of the home library (Zasacka, 2015). It was found that all these changes (personalizing/gamifying) in digital books contribute strongly to the early text comprehension of children, which was a prerequisite to more advanced reading skills (Silva & Cane, 2015; Kucirkova, 2018).

Time is another constraint in todays society. In the study, students spend less time when they use electronic reading. Teachers always complain about time management may be when they integrate screen reading in their classes, they could spend less time in the class.

Some call the children as digital natives, digikids, ikids, igeneration, digital childhoods etc. Prensky (2001) defined the young generation as digital natives and the older generation as digital immigrants discusses that as a result of being surrounded by the latest technology, the students today think and process information significantly different from their predecessors. When the study results are analyzed, it may be concluded that not all children are magically skilled with technologies from birth. The honest fact is that children are less nervous than adults and more eager to try new things.

Hattie (2018) defines specific, highly effective, instructional activities. He define highly effective practices as having an effect size of *0.40* or greater. Most of these practices are not associated with a specific program or intervention, but can be incorporated into existing curricula and core classes. These practices include: (a) having students regularly record progress and self-report grades (ES D *1.33*); (b) self-efficacy (ES D *0.92*); (c) repeated reading programs (ES D *0.75*); (d) providing students with immediate, positive, and corrective feedback after each practice effort (ES D *0.70*) ; (e) help seeking (ES D *0.72*); (f) direct instruction (ES D *0.60*); (g) comprehension programs (ES D *0.47*); and (h) providing formative evaluation (ES D *0.48*); (ı) vocabulary programs (ES D *0.62)*; (j) problem solving teaching (ES D *0.68*). In our study, we had many of those features. Although Hattie has identified other effective practices, the above ones seem feasible for inclusion in the classroom and all have desirable sizes of effects but the main influence on student achievement is the teacher (ES D *1.29*). The influence of the teacher should not be underestimated. Technology alone does not increase student success. The main solution is great teachers who use technology as a tool to solve learning problems.

The power of technology was the instant and formative feedback change it gave. Both students and their teachers in the experiment groups talked about the power of instant and formative feedback advantage which online learning platforms supply but we should not forget that if we want to take advantage of formative assessment in our classroom, using only those techniques is not enough. Along with it, the culture of the class should change, the atmosphere of trust and student centeredness should be the focus. When what we say and what we do contradicts, students learn what we do. According to Demir (2017), all types of immediate feedback interventions have a positive influence on transfer of learning. The same author further adds that immediate feedback has a constructive influence on learning transfer. Feedback is a task that needs to be handled with care and precision. An analysis study that studies 131 studies on feedback reveals that more than a third of feedback interventions actually reduces student performance (Kluger & DeNisi, 1996). Feedbacks that emphasize especially negative and focus only on correction can produce negative results. Delayed feedback also loses its effect. Therefore, an effective meaningful and understandable feedback should have the following characteristics: ontime, see effort, be specific, process-oriented, organized, focus on development, ensure the transfer of knowledge, mobilize, tailor-made, cover the process, include more than just praise, be appropriate for features and goals.

Socio-economic background is another reason of low reading performance. World Social Report which is published in 2020 claimed that when there is a difference between socio-economic status, this might influence reading outcomes. High income families spend not only more time but also money to invest on their children’s education (UDESA, 2020). Students from socioeconomically disadvantaged backgrounds were nearly three times less likely than students from socioeconomic advantages to attain the minimum level of reading skills (OECD, 2019). On the other hand, there are some trends, if an example should be given Steve Jobs and some other people who work in the technology industry raise their children with heavy limitations on technology exposure in the house. There are also some schools which do not allow to use any technology. There is a transnational movement of families from war-torn nations, the wave of gender equality and significant conflicts of national identity and these things have greatly affected today's children. For these reasons, it is possible to mention that the “idiosyncrasy of children” must be celebrated and welcomed.

Supplying online reading materials for children around the world will help the facilitation of “Quality Education” goal which is among United Nations (UN) Sustainable Development Goals embraced by leaders from around the world at the UN General Assembly in 2015, which is a part of the 2030 Agenda for Sustainable Development (UN, 2015). Seventeen Sustainable Development Goals (SDGs) were determined, and education was put at the heart of the strategy to encourage sustainable development. Quality education, which was established as 4th Goal (SDG 4), puts emphasis on education for sustainable development and is crucial for a better future (UN, 2020). Education allows socio-economic mobility to rise, and is a key to escaping poverty. Much progress has been made over the past decade in increasing access to education and school enrollment rates at all levels, especially for girls. Nonetheless, in 2018 approximately 260 million children were already out of school — nearly one-fifth of the age group's global population. And more than half of all kids and teens worldwide do not meet the required reading and math skills requirements (UN, 2020). Because the COVID-19 pandemic spread worldwide in 2020, a majority of countries confirmed that schools would be closed until further notice, affecting more than 91 percent of students worldwide and until April 2020, nearly 1.6 billion children and young people had been out of school (UN, 2020). Creating free and online libraries might support the children to close the gap between who has access to sources and who does not have any access. The main purpose of the technology is to find a solution in eliminating the gap between people who can and cannot reach it.

Shortly, the results of the recent experiment demonstrated that in *"English as a Foreign Language"* classes the use of screen reading lessons while teaching and learning reading can be considered as an effective was to promote the growth of reading comprehension skills and improve the reading performance and motivation.

Listening and reading are the receptive skills because students do not need to produce language, they receive and understand it. These skills are sometimes known as passive skills but to reach productive skills, students need to acquire them. If they can not understand the text, they can not produce outcome. The productive skills are speaking and writing because students are applying these skills in a need to produce language. To conclude, instead of focusing how and which digital books teachers choose to use in their classroom, the message of this dissertation is to motivate teachers to make the most of digital books inside and outside the class as screen has become a part of our lives. Moreover, when gamification mechanics and elements are used in EFL classes to assist reading comprehension, students reading motivation rises. Study results illustrates that gamified reading platforms could encourage students to read more and motivate them. Gamified reading can be a useful pedagogical tool in "English as a Foreign Language" classes. This findings indicate that using gamified reading may lead to increased reading motivation. Further research could be directed to discover gamified reading and its dimensions.

5.3 Practical Implications

The current research is willing to suggest researchers, teachers, field experts and material/course designers a variety of practical implications. The findings initially revealed that electronic reading lessons could greatly enhance the reading comprehension abilities of the students and strengthen their foreign language. Moreover , the findings collected elaborated both the experiences of 6th-grade students exposed to electronic reading and their teachers' thoughts on its application. English as a Foreign Language students and teachers highlighted the significance of implementation of screen reading has a positive influence on the motivation, time and improving English as foreign language in reading.

We also found that less involvement of teachers in reading activities resulted in positive experience and greater commitment. Thus, incorporating electronic reading in the classroom into English as a Foreign Language syllabuses will be worthwhile to assist in the growth of language and reading skills as well as the achievement of foreign language reading performance.

Digital books which are designed carefully should be included to the school curriculums and the home environment as a common practice. We could not show benefits of personalized and gamified reading in comprehension scores, this might mean that children are not familiar with this novel reading mediums.

The recent results offer scientific evidence that personalized e-books and gamified e-books are not only an alternative to printed book reading, they also supply unique resources that are far more effective than printed books. Therefore, well designed digital books should be included as a standard practice in the school curriculum and home setting.

When the such factors of motivation were analyzed, we found out that personalized e-book reading groups curiosity, compliance, and self-efficacy scores were the highest. These sub factors constitute internal motivation. If teachers include personalized materials in reading lessons, the teacher endeavor students curiosity, compliance, and self-efficacy. Increasing curiosity and self-efficacy of the learner is the 21st century educators challenge to achieve. Maybe educators can reach their goal via personalized texts in *“English as a Foreign Language”* classes.

When educators decide the electronic reading platforms, feedback needed to be taken into consideration. Students gain self-efficacy with accurate and timely to feedback. But every feedback is not about self-efficacy and student it does not contribute to the increase in performance at the same rate. For example, the note written on the written paper is a feedback, but it does not provide information about what and how it can be corrected or the student can not understand how to make it better.

To improve students' attitudes towards reading activities can be organized to increase the reading motivation; researchers can analyze the relationship between reading attitude and different skills. The findings of the current research could be used by teachers, children book developers and literature experts and other stakeholders to evaluate, improve and use technology to encourage early readers' reading skills. Based on the findings obtained from the research, students' comprehension skills in printed and e-book reading were compared and the following suggestions were listed. Studies can be conducted to evaluate screenic thinking of students doing screen reading.

Not only educators but also teachers need to guide the students on how to reach a quality content online. Students and parents, especially teachers, should be made conscious about e-book reading and e-book reading platforms. Parents should give necessary support to students who have difficulty in choosing the appropriate one among the unlimited books in digital media for their middle school students. Efforts can be made to establish a completely original and Turkish online book reading and writing site. MONE should organize in-service seminars for e-book reading activities that have started to move towards digital environments, and inform teachers about developments in this area.

Some of the students in the focus group interviews claimed that they use Wattpad. Wattpad reading represents belonging to a particular group students who claimed they use it agree this. In Wattpad, where they say they started with great enthusiasm firstly they read the books named Yabancı, 4N1K, Sessiz, Tut Elimi, Kötü Çocuk. The fact that the books published on the e-book reading and writing site Wattpad are open to all users, and easy access to secondary school students' content such as violence, fear, alcohol, cigarette and drug addiction, bullying, mafia, and sexual violence will affect their development. Wattpad's impact on society is multidimensional. Wattpad's effects on family life, need to be evaluated by authors and educators. Platforms that support learning should be flexible and agile and they need to support the development of the student at his own pace and provide feedback whenever they need. The focus of the online learning platforms should be the development of the student.

To sum up, students can be inspired to undertake more fun and entertaining reading techniques either inside or outside the classroom at their own level. In addition, they should be informed about some of the techniques needed to autonomously improve their reading and foreign language skills. These needs be kept in mind, however, that some of the children are not accustomed to read EFL materials on the internet, and may seem difficult to participate actively at first. Consequently, piloting and obtaining student input about the electronic reading experience of the EFL students may contain practical benefit before such treatment is implemented in the EFL context. Additionally, secure and continuous internet connection should be built and supported during the school lessons. Therefore, any issues associated with internet access and loss of connection will decrease student engagement and reading. Finally, results of this research are essential for carrying out any screen classes where students are expected to read for pleasure and by not having difficulties while acquiring their foreign language simultaneously.

5.4 Recommendations for Further Research

The choice of sixth grade students for this study was such that sixth graders are at a intersection in their reading skill growth. Many students at this age have usually learned to properly decipher words to the point of practical fluency. The present study pose some suggestions for further studies. Furthermore, the number of participants *(n=96)* in the study was not very high, and also their reading ability levels were low. For future research it may also be advised to use a wider sample of different ability levels. Because of the nature of this research, the number of participants was limited. It is recommended that this type of research be carried out on a larger scale in order to improve the generalizability.

Before books are assigned to eight to twelve year olds, teachers need to keep keep in mind that students enjoy illustrations and multimedia features. Future research may supply more knowledge on how deeply children can comprehend the meaning while reading gamified and/or personalized storybook and what design principles could be used for developing effective gamified and or personalized storybooks..

It will be necessary to continue studying successful uses of e-books in the home environment, as the findings of the statistical study showed a higher upward trend in growing student reading comprehension than students reading e-books.

When the literature is analyzed, we found out that there is no study on gamified reading experiences. Further studies can be conducted on gamified reading, to understand it in detail.

Targets set for reading comprehension activities need to be considered very detailed regarding to the abilities of the students. Students first experience with reading activities are very important so special care should be given to ensure that experiences are positive, students also need to have a sense of accomplishment.

Students may be interested in different topics. Therefore, the kind of literacy activities that can be designed according to their interest. For this sample, the students responded to multiple-choice questions online after completing their story book readings from their desktop computers. And the teachers gave feedback after the lessons in regard to the answers given on electronic platform or personalized e-reading platform. In potential studies, teachers might allocate 5-10-minute feedback time just after the students have finished reading in class.

Finally, investigating foreign language reading comprehension indicators across various levels may be another significant research line for future research in this field. More importantly, future research should elaborate the connections and predictive power of various variables that could influence foreign language reading comprehension between participants with varying degrees of foreign language grade level (e.g., beginner, elementary, intermediate, upper-intermediate, advanced and proficient).

It is possible to compare the comprehension skills of the students reading from different technological devices on the screen and to investigate the reasons that motivate the students to read on the screen. It is also possible to compare high and low achieving students reading from screen and to investigate the reasons that motivate the students to read on the screen. The effect of text length or text type on students' reading comprehension skills can be analyzed.

This research was also performed for five weeks, with 10 lessons being introduced in each. Hence, the researcher did not apply a retention test. If we had used retention test in the study, it could be carried out four weeks later. But in that period, the schools were in Semester Holiday.

Longer period of treatment can be applied for future studies in order to be able to gage the effect of the treatment on the retention of the participant students. Lastly, present study respondents only read stories from one single online supply. In future studies various electronic libraries can be combined into screen reading classes to give the students broader variety of genre option.

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APPENDICES

A. Treatment in the Personalized E-book Reading Experiment Group.

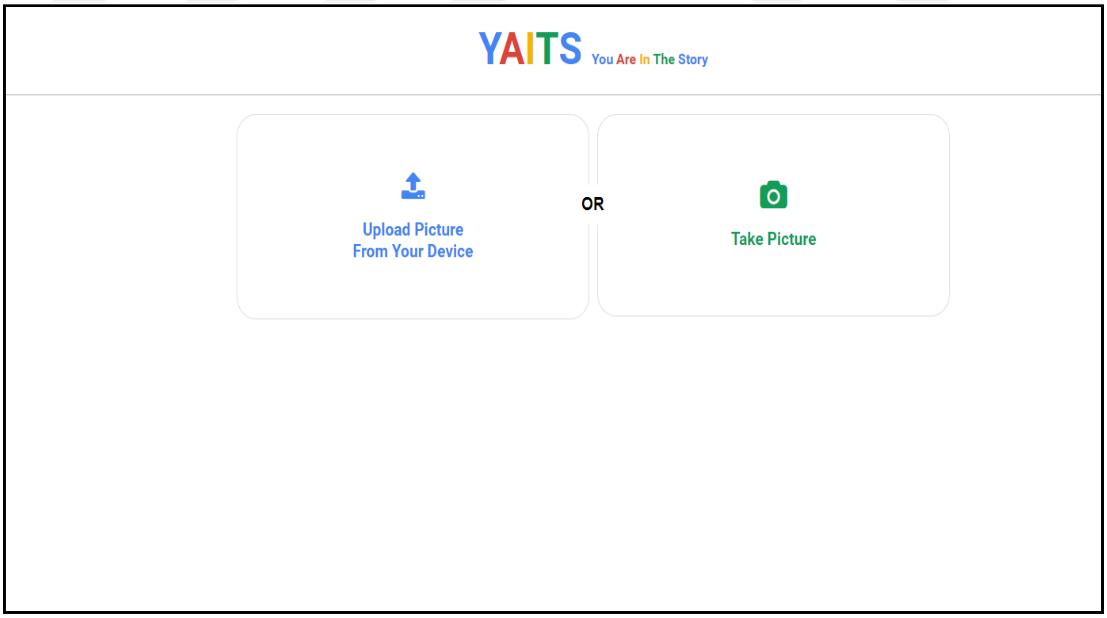
In this part, the process in the personalized e-book reading experiment group was explained week by week in detail.

Week 1 (0ctober 9, 2019). In the first class, all groups were instructed similarly in the class. Cambridge Movers pretest were administered to the students and they were asked to fill it in 2 hours. Then, the Cambridge Movers exam was covered and evaluated, four groups as experimental and control groups were created. According to test results, reading texts levels were organized. The participants in the study and control groups were briefly told about reading course on Friday, during the first week. The teacher asked them only if there were any questions or missed points to be dealt with. The teacher introduced the reading program to the students after answering the questions and explained the goals of the program, how the program will be performed and how they will be measured in detail. The instructor answered the program-related questions sharing the handouts with the students, so they could hit it when they wanted to. In addition, she revealed that next Friday she would be presenting the first storybook. Finally, she asked them to fill out the Reading motivation survey and test it by Digital Attitude until the end of the course. It took the students approximately 15 minutes to finish answering the survey questions.

Week 2 (October 16th, 2019). The students started personalized e-book reading lessons by reading a book in their most favourite genre, which was realistic fiction. The book Brainstorm Bear was read by the students in this lesson. It was provided in level I. Before reading, teacher asked students to open their “YAITS accounts.

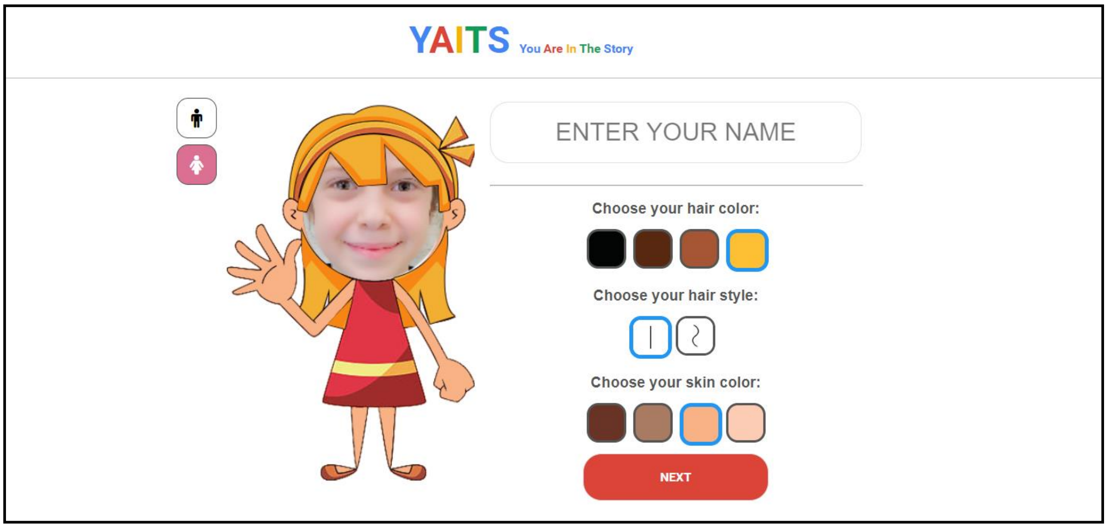
Screenshots of the web page, when students reach their accounts.

When all of the students opened their accounts, teacher requested the students enter the codes. After each student entered their codes, they came up with a page in which they needed to take photos. Students clicked on the "take picture" part and took their photographs and included their images into the system.



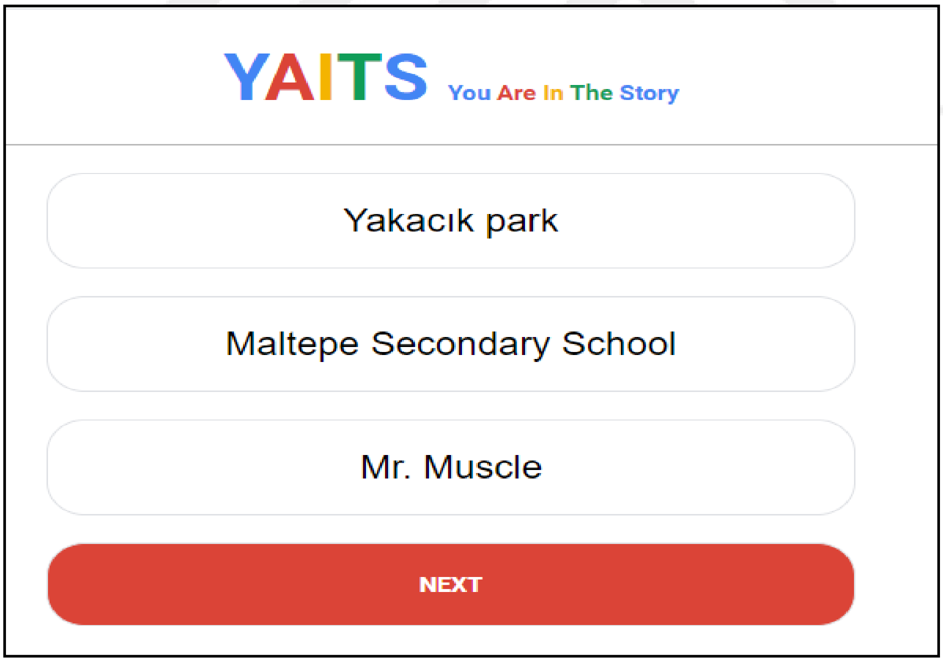
Screenshot of the web page, when students take a picture.

After they included their images into the system, they saw a page in which they need to fill some personal information such as their names, hair, eye and skin color.



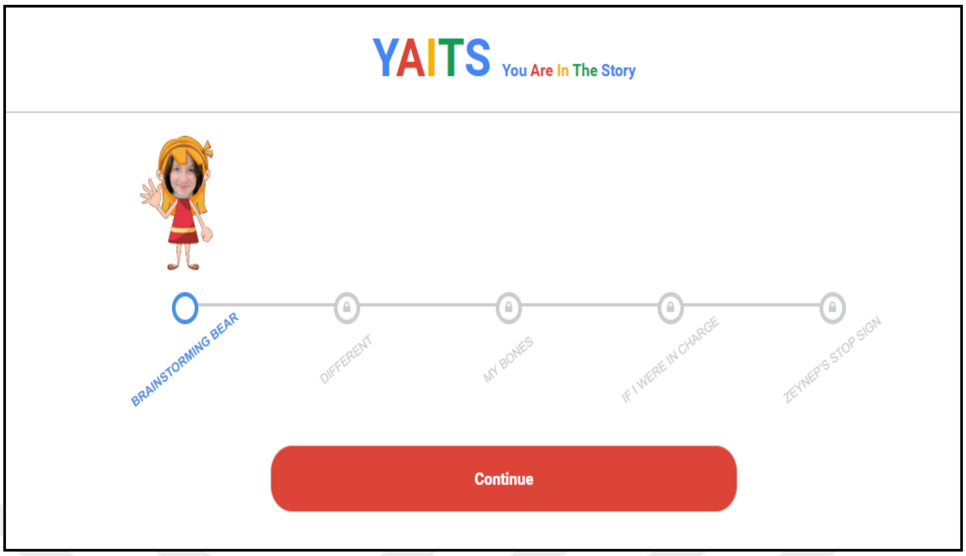
Screenshot of the web page, when students fill their personal information.

After they finished filling the page, they answered some questions such as “Which school do you attend?, what is your favorite park's name?, If you had a skeleton, what would you name?. These questions and questions on the previous image were asked in order to personalize the stories.



Screenshot of the web page, when students answer the personalization questions.

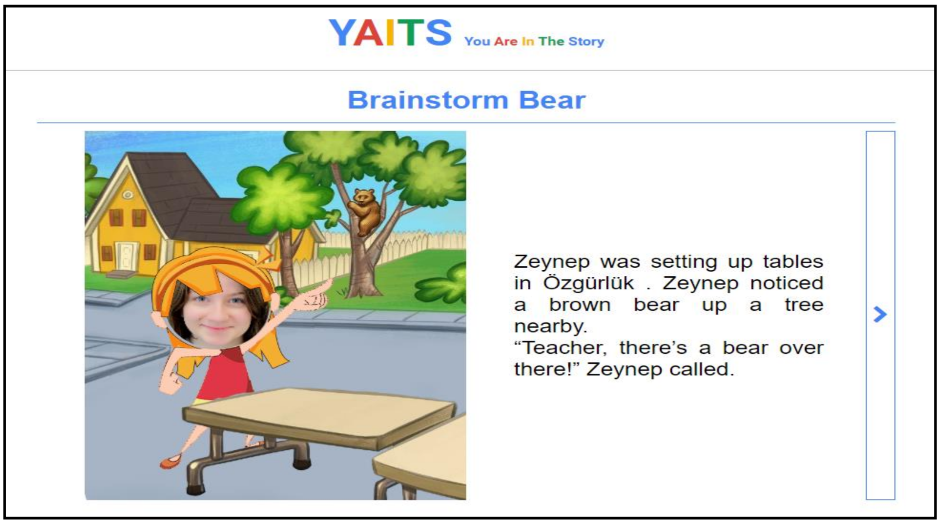
When students finished answering questions, the system automaticaly save the information and whenever they open the system they saw their photo and personal information. They did not need to answer the same questions each week. On week two students already answered the questions. The student saw a path to follow with the avatar he/ she created.



Sample student avatar and reading path

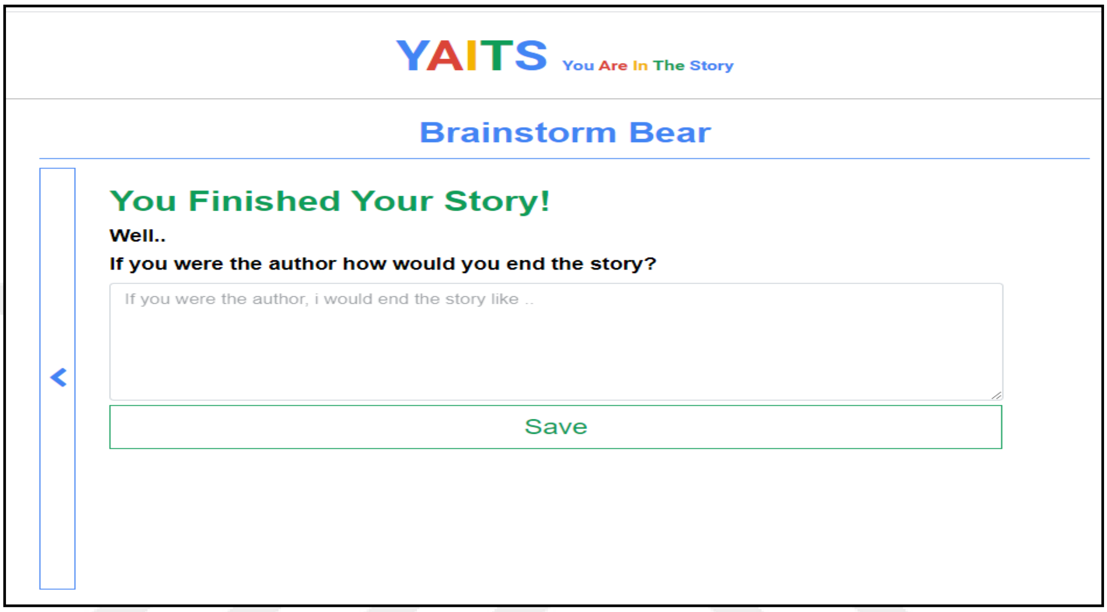
When they click on “continue”, they saw their copy of personalized e-book version of the “Brainstorm Bear”. The teacher first told the students in the pre-reading session that they were going to read a story about a family who found a bear in a tree in their backyard. Teacher let the sudents to read the books. The process in the personalized e-book reading group was students first read the book and when they do not understand they could check it from an online dictionary and write the new word down to the glossary part.

When students look for help in the while reading stage teacher was ready to help. Unknown words were checked and added to the glossary part of the personalized web page. The students read and answer the comprehension questions.



Sample personalized student page

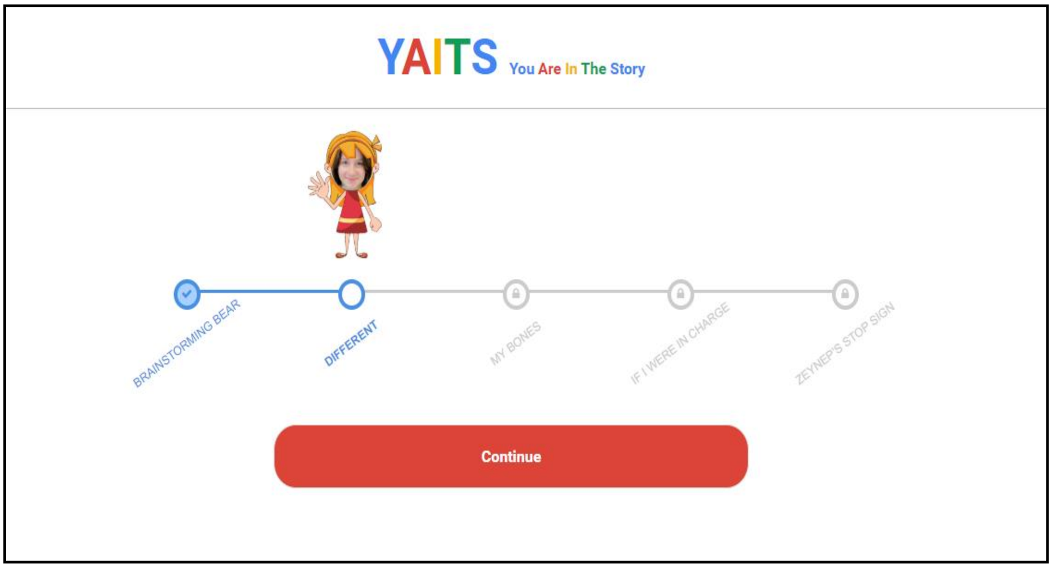
As the system is personalized, the main character is the student and events are influenced from his/her answers. In image six, the name of the student was Zeynep so the image in the avatar belogs to her and her favorite park name “Özgürlük” is there. In the personalized story, Zeynep performs the actions.



Personalize the end of story sample page.

Students need to personalize the ending of the story, they created their own endings. Teacher encouraged students to ask questions when they need help. After they finished reading, students answered comprehension questions. When they saw the comprehension questions, students had the chance to see the text.

Week 3 (October 23rd, 2019). On the second week students read a book in their most favourite genre, which was realistic fiction. The book “Different” was read by the students in this lesson. It was provided in level I.



Opening screen after they open their account.

When they click on "continue", they saw their copy of personalized e-book version of the "Different". The teacher first told the students in the pre-reading session that they were going to read a story about a family who found a bear in a tree in their backyard. Teacher let the sudents to read the books. The process in the personalized e-book reading group was students first read the book and when they do not understand they could check it from an online dictionary and write the new word down to the glossary part.

When students were reading and they need help teacher was there. Unknown words were checked and added to the glossary part of the personalized web page. The students read and answer the comprehension questions.

As the system is personalized, the main character is the student and events are influenced from his/her answers. In image six, the name of the student was Zeynep so the image in the avatar belogs to her and her favorite park name "Özgürlük" is there. In the personalized story, Zeynep performs the actions.

Students need to personalize the ending of the story, they created their own endings. Teacher encouraged students to ask questions when they need help. After they finished reading, students answered comprehension questions. When they saw the comprehension questions, students had the chance to see the text.

Week 4 (October 30th, 2019). In this lesson, the students read the book "My bones", whose genre was realistic fiction. The book was provided in level J.

The same procedure in week 2 was conducted on the week 4.

Week 5 (November 6th, 2019). Students read a book in their most favourite genre, which was realistic fiction. The book “If I were in charge” was read by the students in this lesson. It was provided in level J. The same procedure in week 2 was conducted on the week 5.

Week 6 (November, 13th, 2019). Students read a book in their most favourite genre, which was realistic fiction. The book “Joe’s Stop Sign” was read by the students in this lesson. It was provided in level J.The same procedure in week 2 was conducted on the week 6.

In the last week, post tests were administered. First of all, the students in the personalized e-book reading group were requested to fill the reading motivation scale and digital attitude scale again. The questionnaires were printed. The instructor requested the students to fill in the questionnaire until the end of the lesson. Moreover, the researcher applied a focus group interview with randomly selected five experiment group students about their understanding of the whole process and whether they would like to use directed reading in their classroom. The researchers aim was to investigate the students opinions about the experiment.

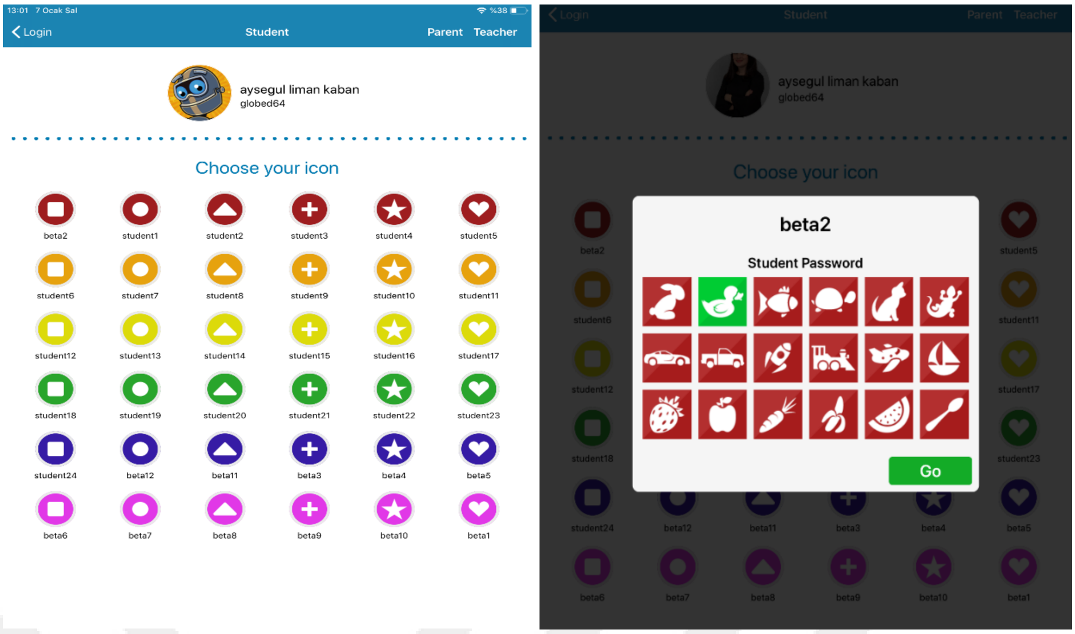
B. Treatment in the Gamified E-book Reading Experiment Group

In this part, the process in the gamified e-book reading experiment group is explained week by week in detail.

Week 1 (0ctober 9, 2019). In the first class, all groups were instructed similarly in the class. Cambridge Movers pretest were to the students and they were asked to complete it in 2 hours. After the Cambridge Movers exam was covered and evaluated, four groups as experimental and control groups were created. According to test results, reading texts levels were organized. The participants in the study and control groups were briefly told about reading course on Friday, during the first week. The teacher asked them only if there were any questions or missed points to be dealt with. The teacher introduced the reading program to the students after answering the questions and explained the goals of the program, how the program will be performed and how they will be measured in detail. The instructor answered the program-related questions sharing the handouts with the students, so they could hit it when they wanted to. In addition, she revealed that next Friday she would be presenting the first storybook. Finally, she asked them to fill out the Reading motivation survey and test it by Digital Attitude until the end of the course. It took the students approximately 15 minutes to finish answering the survey questions.

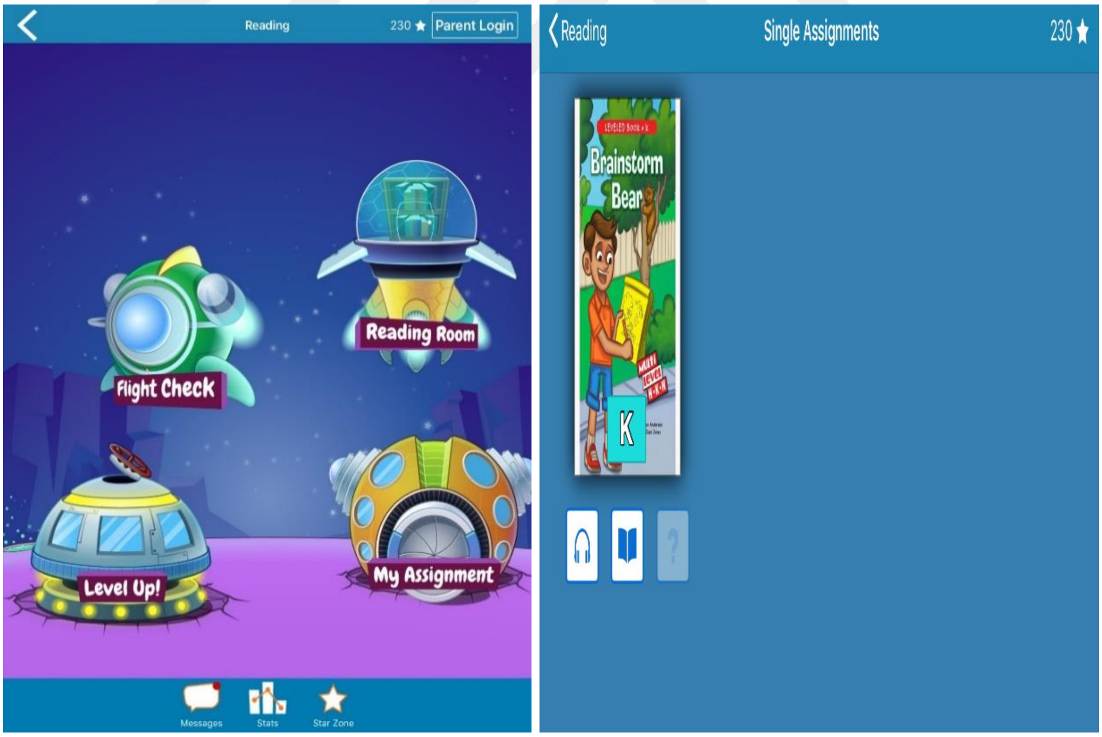
Week 2 (October 16th, 2019). The students started gamified e-book reading lessons by reading a book in their most favourite genre, which was realistic fiction. The book "Brainstorm Bear" was read by the students in this lesson. It was provided in level I.

Teacher asked students to open their Raz-Kids accounts.



Screenshots of the web page, when students reach their accounts.

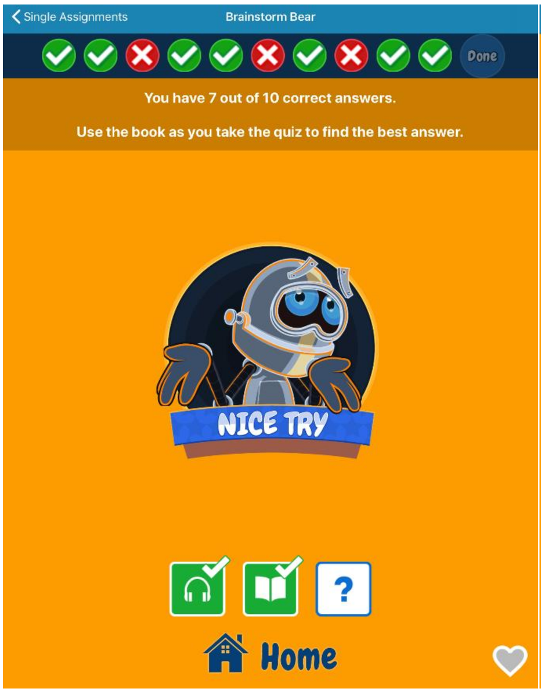
When all of the students opened their accounts, teacher requested the students open the assignments part.

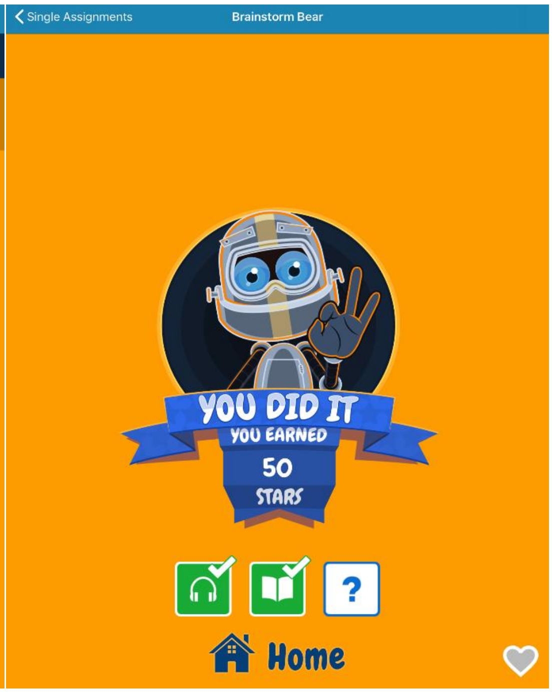


Screenshot of the web page, when students open their reading zone.

When they click on the "my assignment", they saw their copy of Brainstorm Bear. The teacher first told the students in the pre-reading session that they were going to read a story about a family who found a bear in a tree in their backyard. Teacher let the sudents to read the books. The process in the gamified e-book reading group was students first listen the book and when they do not understand they could check it from an online dictionary and write the new word down to the glossary part. After they finished listening the book, they read and answer the comprehension questions. As the system is gamified they won some stars for the achievements they reached. The system has a fixed reward schedule, participants were rewarded based on defined actions and events. For instance, when participant finished listening the first book, 10 stars she/he gained. Then, when participants finished reading the first book, 50 stars she/he gained. When students need help teacher was there. Unknown words were checked and added to the glossary part of the gamified web page. Students also have a chance to see his / her level, when he/ she click on the reading part.

After they finished reading, students answered comprehension questions. When they saw the comprehension questions, students had the chance to see the text. In comprehension questions part, when they answer all questions correct, the system gave 200 stars. The system also gives feedback to the students. When the participant has wrong answers, the system directs to participant to read again. It gave “nice try” sign on the screen. Also claims ‘Use the book as you take the quiz to find the best answer”. When the participant performs nine or nen out of ten, the system gave “Good Job / Woohoo!” sign on the screen. Also adds, the assignment is completed sign.

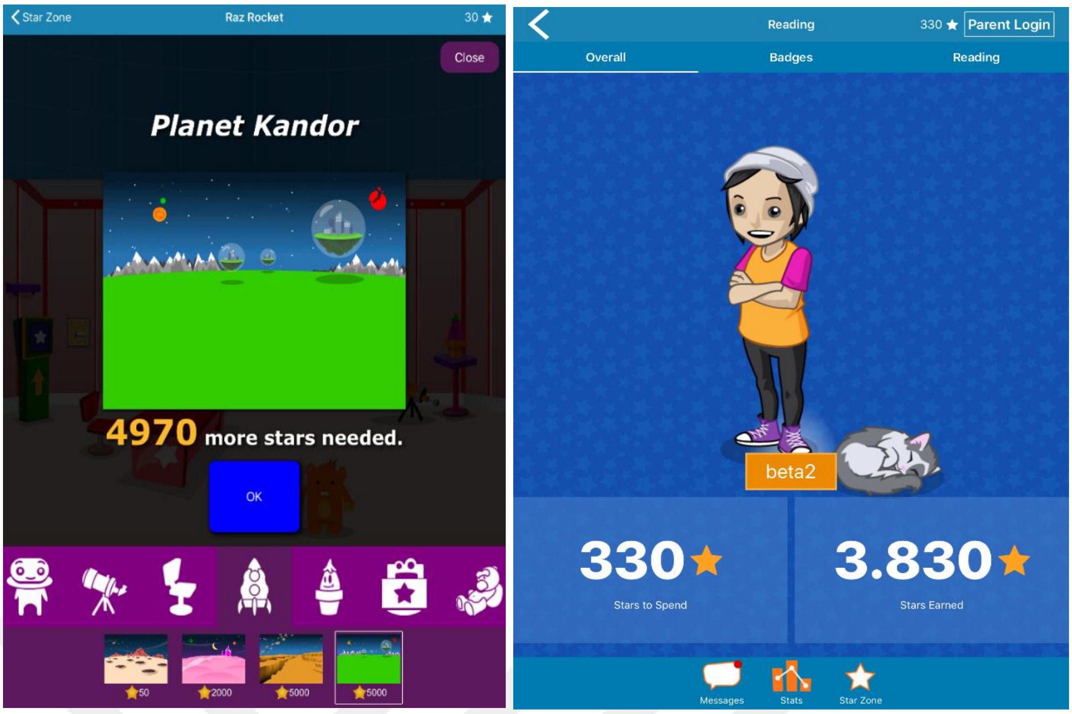




Screenshot of the web page, when students completed answering the comprehension questions.

Teacher let them to spend time in the gamified web page application and students had the chance to discover the web page and design their reading environment and avatars. Students used the points they get while creating avatars and changing the environment. In this part, to reach each item they need to read and complete comprehension questions. When the participant click on the star zone for the first time, he/she has 2 options to open (the avatar builder or raz rocket). When he/she opens one of them, he/she instantly gains 500 stars. When students finished the activities of the first book, they received a badge. The name of the badge was “First book badge”.

Avatar customization is another gamified feature of the web page. With the points he/she gains he/she can select and customize an avatar and chose the look-and-feel options (e.g., a dreamy theme or a bright color theme), accommodate individual preferences. Students can have a nickname and use that nickname within the environment.



Screenshot of the web page, when students edit their avatar and reading environment.

Teacher encouraged students to ask questions when they need help. When the student finished the assignment, assignment spaceship launches. Klein and Koroghlanian (2004) claim that animation increase motivation of the learner.

Week 3 (October 23rd, 2019). On the second week students read a book in their most favourite genre, which was realistic fiction. The book “Different” was read by the students in this lesson. It was provided in level I.

The same procedure in week 2 was conducted on the week 3.

Week 4 (October 30th, 2019). In this lesson, the students read the book “My bones”, whose genre was realistic fiction. The book was provided in level I.

The same procedure in week 2 was conducted on the week 4.

Week 5 (November 6th, 2019). Students read a book in their most favourite genre, which was realistic fiction. The book “If I were in charge” was read by the students in this lesson. It was provided in level J.

The same procedure in week 2 was conducted on the week 5.

Week 6 (November, 13th, 2019). Students read a book in their most favourite genre, which was realistic fiction. The book “Joe’s Stop Sign” was read by the students in this lesson. It was provided in level J.The same procedure in week 2 was conducted on the week 6.

In the last week, post tests were administered. First of all, the students in the gamified e-book reading group were asked to finish the reading motivation questionnaire and digital attitude scale again. The questionnaires were printed. The instructor requested the students to fill in the survey until the end of the lesson. Moreover, the researcher applied a focus group interview with randomly selected five experiment group students about their understanding of the whole process and whether they would like to use directed reading in their classroom. The researchers aim was to investigate the students opinions about the experiment.

C. Treatment in the PDF E-book Reading Experimental Group.

In this part, the process in the PDF e-book reading group is explained week by week in detail.

Week 1 (0ctober 9, 2019). In the first lesson, all groups were instructed similarly in the class. Cambridge Movers pretest were used and students were requested to complete it in 65 minutes. After the Cambridge Movers exam was covered and evaluated, four groups as experimental and control groups were created. According to test results, reading texts levels were organized. The participants in the study and control groups were briefly told about reading course on Friday, during the first week. The teacher asked them only if there were any questions or missed points to be dealt with. The teacher introduced the reading program to the students after answering the questions and explained the goals of the program, how the program will be performed and how they will be measured in detail. The instructor answered the program-related questions sharing the handouts with the students, so they could hit it when they wanted to. In addition, she revealed that next Friday she would be presenting the first storybook. Finally, she asked them to fill out the Reading motivation survey and test it by Digital Attitude until the end of the course. It took the students approximately 15 minutes to finish answering the survey questions.

Week 2 (October 16th, 2019). The students started PDF e-book reading lessons by reading a book in their most favourite genre, which was realistic fiction. The book "Brainstorm Bear" was read by the students in this lesson. It was provided in level I.

Teacher asked students to open PDF e-book reading file from their computers. Students found the related folder an open their PDF copy of Brainstorm Bear and teacher guided them to the front and back covers and read the title. Teacher let the sudents to discuss what they saw on the covers and encourage them to offer ideas as to what type of book it is (genre, text type, and so on) and what it might be about.

The teacher wrote the sentence "Brainstorm bear has a question" on the board during the warm-up session, and gave each student one empty sheet of paper. When they heard this sentence, he / she asked them to draw what came to their minds. Then, the students had to finish their sketches in black pencil in 40 seconds. The teacher told the students when they were finished, they were going to exchange their paper with their friends 'to explain to each other what they saw on papers of their friends to express their opinions. At the end of the lesson, the teacher requested the students whether their ideas were true according to the story.

The teacher first told the students in the pre-reading session that they were going to read a story about a family who found a bear in a tree in their backyard, and then asked the question How would you get the bear out of the tree? The students discussed for 2-3 minutes and then the teacher requested them contribute their ideas to the whole class in a debate setting.

It was pointed out by the teacher that stopping to retell the events of the story helped readers understand and remember what they were reading. The students were then reminded that they all would retell the story with their partners after they finished reading. Three ways for preparing for retelling while reading were presented to the students, which were: taking down notes, drawing pictures, taking screenshots from the digital book.

Teacher asked students what words, if any, they marked in their book and used this opportunity to model how they could read these words using decoding strategies and context clues.

In the post-reading session, the teacher requested the students to work to retell the story by creating a poster on an A4 paper or tablet. Teacher encouraged students to use transition words such as first, next, then, last, and so on when retelling the story. After 8-10 minutes, the students presented their works in the classroom before their students in the following lessons or at break times before their teachers and friends.

Week 3 (October 23rd, 2019). Students read a book in their most favourite genre, which was realistic fiction. The book “Different” was read by the students in this lesson. It was provided in level I.

Teacher asked students to raise their hand if they had ever been teased, made fun of, or bullied. Teacher invited students to share how they feel when they are teased and also asked students if they had ever witnessed another person being teased or bullied. Teacher invited volunteers to share what they did to help somebody who was being bullied. Students discussed why someone might not intervene if he or she saw someone being bullied.

Teacher asked students to open PDF e-book reading file from their computers. Students found the related folder an open their PDF copy of “Different” and teacher guided them to the front and back covers and read the title. Teacher let the sudents to discuss what they saw on the covers and encourage them to offer ideas as to what type of book it is (genre, text type, and so on) and what it might be about.

The students previewed the illustrations in the book and asked students what they expected to read about in the book, on the basis of what they saw in the illustrations. (Teacher accepted all answers that students could justify.)

Teacher took predictions about the story and explained to students that effective readers make predictions, or informed guesses, about what would occur next in the story. Teacher emphasized that making a prediction that made sense, using clues from the story and prior knowledge, was more important than getting the prediction correct.

As students read the book, teacher monitored their understanding with the following questions.

• How does Kevin know that the boys are bullying Joey? (level 2) pages 5–6

• Why are the boys bullying Joey? (level 1) page 6

• How does Joey respond to being bullied? How do you know? (level 2) pages 9–10

• What is the effect of Kevin's giving Joey his cap back? (level 2) page 12–13

• What can you tell about Kevin on the basis of how he responds to the bullies? (level 3) multiple pages

Teacher asked students what words, if any, they marked in their book and used this opportunity to model how they could read these words using decoding strategies and context clues.

Teacher had students cite specific evidence from the book to answer the Focus Question. Students should include that it is very hurtful for the people who are being bullied because they feel that others do not like them. Often those who are doing the bullying tease others in an attempt to make themselves feel better. Those who see the bullying happening can feel bothered by what they are watching because they are not sure if they want to be involved even though they feel bad seeing someone who is being mistreated.

Week 4 (October 30th, 2019). On the second week students read a book in their most favourite genre, which was realistic fiction. The book "My Bones" was read by the students in this lesson. It was provided in level J.

Teacher placed a picture of a skeleton on the board and had students brainstorm what they had known about bones. Teacher then had students discussed what they knew with a partner and invited volunteers to share the information they discussed with the whole group. Students listed information about bones on the board.

Students thought about what a system is and reviewed or explained that a system was a group of things or ideas that work together. Teacher asked students to discuss with a partner some systems they knew about and had them share with the class and list some of those systems on the board. Teacher explained that they will be reading about a body system that helps support and protect the body.

Teacher asked students to open PDF e-book reading file from their computers. Students found the related folder an open their PDF copy of “My Bones” and teacher guided them to the front and back covers and read the title. Teacher let the sudents to discuss what they saw on the covers and encourage them to offer ideas as to what type of book it is (genre, text type, and so on) and what it might be about.

Teacher explained to students that effective readers make connections between what they already know and new information they read and explained that this was called connecting to prior knowledge. Teacher also reminded students that thinking about what they already knew would help them better understand what they read and have students follow along as you read page 3 aloud. Teacher asked students to think about something else they had known of that had a skeleton. Teacher invited volunteers to share their connections with the rest of the group. Teacher let the students discuss how their connections help them understand the information in the book.

As students read the book, teacher monitored their understanding with the following questions. Teacher encouraged students to support their answers by citing evidence from the book.

• How many bones are in the human body? (level 1) page 4

• What are the four shapes of bones? (level 1) page 6

• How do bones support and protect the body? (level 2) pages 9–11

• How do joints work to help the body move? (level 2) pages 12 and 13

• How can you care for your bones? (level 3) multiple pages

Teacher asked students what words, if any, they marked in their book and used this opportunity to model how they could read these words using decoding strategies and context clues.

Teacher modelled for students how you connect with prior knowledge as you read and shared some personal experiences you have had with bones. Teacher asked volunteers to share their personal connections with the class.
Think-aloud: This book gives me information about bones. As each bone is introduced, I think about a category that it fits into. For example, on page 5, I see that the largest bone in the body is in the leg. I could put the leg bone into a group called long bones. I could also sort the bones into groups based on what each bone does. If I did that, I would put the leg bone in the group of bones that support the body. Classifying information helps me understand and remember what I read.
Week 5 (November 6th, 2019). Students read a book in their most favourite genre, which was realistic fiction. The book "If I were in charge" was read by the students in this lesson. It was provided in level J.

Teacher placed the illustrations on the board that show people with various emotions and asked students to work with a partner to identify the emotions they saw in the images. Teacher invited volunteers to share what they notice about how the people feel in each illustration.
Teacher discussed with students why people feel different emotions and asked students to think about how certain rules make them feel. Teacher made students to discuss the following questions with a partner: What rules might make someone feel excited? What rules might cause someone to feel sad? What rules might make a person feel mad or angry?
Teacher asked students to open PDF e-book reading file from their computers. Students found the related folder an open their PDF copy of "If I were in charge" and teacher guided them to the front and back covers and read the title. Teacher let the sudents to discuss what they saw on the covers and encourage them to offer ideas as to what type of book it is (genre, text type, and so on) and what it might be about.
Teacher talked about how to visualize and explained to students that engaged readers visualize, or create pictures in their mind, as they read. Then, teacher explained that readers make visual images using information from the text and what they already know about the subject. Teacher pointed out that the illustrations in a book could also provide information to add to visualizations. Teacher had students close their eyes as you read page 5 aloud.

Teacher asked students to draw a representation of what they visualized and invited volunteers to share their visualization with the rest of the class, and discussed how their pictures compare to the picture in the book. Teacher pointed out and explained that most stories have story elements, such as characters, setting, and plot. Teacher reminded students that characters are often the people in the story. Teacher also mentioned that engaged readers can analyze characters by examining the characters' words, actions, and thoughts. Teacher created three columns on the board with the headings Words, Actions, and Thoughts and explained to students that as they read the story, they should consider the words, actions, and thoughts of the main character, Helga. Point out that analyzing these traits will help students learn more about Helga.
Teacher asked students while they were reading the book, monitored their understanding with the following questions. Teacher encouraged students to support their answers by citing evidence from the book.

• What are Helga's three rules? page 4

• How do the illustrations on pages 6 and 7 help readers understand how the students feel about wearing purple? pages 6–7

• How does Helga respond to the boy who does not own any purple clothes? page 8

• What do the students do when Helga shares her rule about prune juice? pages 10–12

Teacher asked students what words, if any, they marked in their book and used this opportunity to model how they could read these words using decoding strategies and context clues.

Students analyzed Words, Actions, and Thoughts table and discussed the answers they gave. Teacher had students share their work in groups and invited volunteers to share their findings with the rest of the class, identifying the details and illustrations they used to analyze the main character, Helga. Remind students that analyzing characters helps readers understand the characters in a story by considering what the characters say, think, and do.

Week 6 (November 13th, 2019). In this lesson, the students read the book "Joe's Stop Sign", whose genre was realistic fiction. The book was provided in level J.

Teacher wrote the phrase stop sign on the board and have students share what they know about the use of stop signs and the need for them. Teacher encouraged students to explain what they had known about how cars and bicycles must behave when approaching a stop sign and where students might find stop signs in their neighborhood. Teacher also asked students what they think traffic would be like without stop signs.

Teacher asked students to open PDF e-book reading file from their computers. Students found the related folder an open their PDF copy of “Joe’s Stop Sign”and teacher guided them to the front and back covers and read the title. Teacher let the sudents to discuss what they saw on the covers and encourage them to offer ideas as to what type of book it is (genre, text type, and so on) and what it might be about.

Teacher explained that writers have reasons for what they write and wrote the following words on the board: problem and solution. Teacher stressed that people review or explain that a problem is something that is difficult to deal with or hard to understand and must be worked out or solved (such as a street not being safe). A solution is an act or a process of solving the problem (such as finding a way to make the street safer).

Teacher asked students read to find out more about the characters’ problems and the solutions they choose and reminded them to stop reading at the end of each page with a sticky note to quickly retell in their mind the details of the events so far in the story. Teacher modelled retelling the events of the story using the illustrations as a guide. Then, teacher introduced and explained the problem-and-solution worksheet and pointed out that the first two problems were worked out aloud and written on the board. Then, the teacher asked students to write the problem from page 5 on their worksheet (it’s harder to cross the street). Teacher chose volunteers to share possible solutions to this problem, discussed a positive and negative consequence of each possible solution. Teacher also recorded all of their ideas on the board under the Possible Solutions and Consequences headings.

Teacher asked students what words, if any, they marked in their book and used this opportunity to model how they could read these words using decoding strategies and context clues.

Teacher had volunteers retell the events to the end of the book, using the illustrations from pages 13 through 15 of the book. Then, teacher also had students retell the story to a partner, starting at the beginning. Students checked each other while listening their friends for whether students include the following: main characters, setting, correct events in order, and events in detail.

In the last week, post tests were administered. First of all, the students in the gamified e-book reading group were asked to fill the reading motivation survey and digital attitude scale again. The questionnaires were printed. The teacher requested the students to fill in the survey until the end of the lesson. Moreover, the researcher applied a focus group interview with randomly selected five experiment group students about their understanding of the whole process and whether they would like to use directed reading in their classroom. The researchers aim was to investigate the students opinions about the experiment.

D. The Process in the Control Group

In this part, the process in the control group is explained week by week in detail.

Week 1 (0ctober 9, 2019). In the first lesson, all groups were instructed similarly in the classroom. Cambridge Movers pretest were applied to the students and they were asked to finish it in sixty five minutes. After the Cambridge Movers exam was covered and evaluated, four groups as experimental and control groups were created. According to test results, reading texts levels were organized. The participants in the study and control groups were briefly told about reading course on Friday, during the first week. The instructor asked them only if there were any questions or missed points to be dealt with. The instructor introduced the reading program to the students after answering the questions and explained the goals of the program, how the program will be performed and how they will be measured in detail. The instructor answered the program-related questions sharing the handouts with the students, so they could hit it when they wanted to. In addition, she revealed that next Friday she would be presenting the first storybook. Finally, she asked them to fill out the Reading motivation survey and test it by Digital Attitude until the end of the course. It took the students approximately 15 minutes to finish answering the survey questions.

Week 2 (October 16th, 2019). The students started printed e-book reading lessons by reading a book in their most favourite genre, which was realistic fiction. The book “Brainstorm Bear” was read by the students in this lesson. It was provided in level I.
Teacher gave students their copy of Brainstorm Bear and guided them to the front and back covers and read the title. Teacher let the sudents to discuss what they saw on the covers and encourage them to offer ideas as to what type of book it is (genre, text type, and so on) and what it might be about.
The teacher wrote the sentence "Brainstorm bear has a question" on the board during the warm-up session, and gave each student one empty sheet of paper. When they heard this sentence, he / she asked them to draw what came to their minds. Then, the students had to finish their sketches in black pencil in 40 seconds. The teacher told the students when they were finished, they were going to exchange their paper with their friends 'to explain to each other what they saw on papers of their friends to express

their opinions. At the end of the lesson, the teacher requested the students whether their ideas were true according to the story.

The teacher first told the students in the pre-reading session that they were going to read a story about a family who found a bear in a tree in their backyard, and then asked the question How would you get the bear out of the tree? The students discussed for 2-3 minutes and then the teacher requested them contribute their ideas to the whole class in a debate setting.

It was pointed out by the teacher that stopping to retell the events of the story helped readers understand and remember what they were reading. The students were then reminded that they all would retell the story with their partners after they finished reading. Three ways for preparing for retelling while reading were presented to the students, which were: taking down notes, drawing pictures, taking screenshots from the digital book.

Teacher asked students what words, if any, they marked in their book and used this opportunity to model how they could read these words using decoding strategies and context clues.

In the post-reading session, the teacher requested the students to work to retell the story by creating a poster on an A4 paper or tablet. Teacher encouraged students to use transition words such as first, next, then, last, and so on when retelling the story. After 8-10 minutes, the students presented their works in the classroom before their students in the following lessons or at break times before their teachers and friends.

Week 3 (October 23rd, 2019). Students read a book in their most favourite genre, which was realistic fiction. The book "Different" was read by the students in this lesson. It was provided in level I.

Teacher asked students to raise their hand if they had ever been teased, made fun of, or bullied. Teacher invited students to share how they feel when they are teased and also asked students if they had ever witnessed another person being teased or bullied. Teacher invited volunteers to share what they did to help somebody who was being bullied. Students discussed why someone might not intervene if he or she saw someone being bullied.

Teacher gave the students their copy of "Different" and guided them to the front and back covers and read the title. Teacher had students discuss what they saw on the covers and also encouraged them to offer ideas as to what type of book it is (genre, text type, and so on) and what it might be about. Teacher showed students the title page and discussed the information on the page (title of book, author's name, illustrator's name).

The students previewed the illustrations in the book and asked students what they expected to read about in the book, on the basis of what they saw in the illustrations. (Teacher accepted all answers that students could justify.)

Teacher took predictions about the story and explained to students that effective readers make predictions, or informed guesses, about what would occur next in the story. Teacher emphasized that making a prediction that made sense, using clues from the story and prior knowledge, was more important than getting the prediction correct.

As students read the book, teacher monitored their understanding with the following questions.

• How does Kevin know that the boys are bullying Joey? (level 2) pages 5–6

• Why are the boys bullying Joey? (level 1) page 6

• How does Joey respond to being bullied? How do you know? (level 2) pages 9–10

• What is the effect of Kevin's giving Joey his cap back? (level 2) page 12–13

• What can you tell about Kevin on the basis of how he responds to the bullies? (level 3) multiple pages

Teacher asked students what words, if any, they marked in their book and used this opportunity to model how they could read these words using decoding strategies and context clues.

Teacher had students cite specific evidence from the book to answer the Focus Question. (Students should include that it is very hurtful for the people who are being bullied because they feel that others do not like them. Often those who are doing the bullying tease others in an attempt to make themselves feel better. Those who see the bullying happening can feel bothered by what they are watching because they are not sure if they want to be involved even though they feel bad seeing someone who is being mistreated.)

Week 4 (October 30th, 2019). On the second week students read a book in their most favourite genre, which was realistic fiction. The book "My Bones" was read by the students in this lesson. It was provided in level J.

Teacher placed a picture of a skeleton on the board and had students brainstorm what they had known about bones. Teacher then had students discussed what they knew with a partner and invited volunteers to share the information they discussed with the whole group. Students listed information about bones on the board.

Students thought about what a system is and reviewed or explained that a system was a group of things or ideas that work together. Teacher asked students to discuss with a partner some systems they knew about and had them share with the class and list some of those systems on the board. Teacher explained that they will be reading about a body system that helps support and protect the body.

Teacher gave students their copy of My Bones in the control group. In experiment groups, teacher ask the students to open screen reading pages. Teacher in both contol and experiment groups guided the students to the front and back covers and read the title and have students discuss what they see on the covers. Teacher also encouraged them to offer ideas as to what type of book it was (genre, text type, and so on) and what it might be about.

Teacher explained to students that effective readers make connections between what they already know and new information they read and explained that this was called connecting to prior knowledge. Teacher also reminded students that thinking about what they already knew would help them better understand what they read and have students follow along as you read page 3 aloud. Teacher asked students to think about something else they had known of that had a skeleton. Teacher invited volunteers to share their connections with the rest of the group. Teacher let the students discuss how their connections help them understand the information in the book.

As students read the book, teacher monitored their understanding with the following questions. Teacher encouraged students to support their answers by citing evidence from the book.

- How many bones are in the human body? (level 1) page 4
- What are the four shapes of bones? (level 1) page 6
- How do bones support and protect the body? (level 2) pages 9–11
- How do joints work to help the body move? (level 2) pages 12 and 13
- How can you care for your bones? (level 3) multiple pages

Teacher asked students what words, if any, they marked in their book and used this opportunity to model how they could read these words using decoding strategies and context clues.

Teacher modelled for students how you connect with prior knowledge as you read and shared some personal experiences you have had with bones. Teacher asked volunteers to share their personal connections with the class.

Think-aloud: This book gives me information about bones. As each bone is introduced, I think about a category that it fits into. For example, on page 5, I see that the largest bone in the body is in the leg. I could put the leg bone into a group called long bones. I could also sort the bones into groups based on what each bone does. If I did that, I would put the leg bone in the group of bones that support the body. Classifying information helps me understand and remember what I read.

Week 5 (November 6th, 2019). Students read a book in their most favourite genre, which was realistic fiction. The book “If I were in charge” was read by the students in this lesson. It was provided in level J.

Teacher placed the illustrations on the board that show people with various emotions and asked students to work with a partner to identify the emotions they saw in the images. Teacher invited volunteers to share what they notice about how the people feel in each illustration.

Teacher discussed with students why people feel different emotions and asked students to think about how certain rules make them feel. Teacher made students to discuss the following questions with a partner: What rules might make someone feel excited? What rules might cause someone to feel sad? What rules might make a person feel mad or angry?

Teacher gave students their copy of “If I Were in Charge” and guided them to the front and back covers, and read the title. Then, teacher made the students to discuss what they saw on the covers. Teacher encouraged them to offer ideas as to what type of book it is (genre, text type, and so on) and what it might be about and showed students the title page. Students discussed the information on the page (title of book, author’s name, illustrator’s name).

Teacher talked about how to visualize and explained to students that engaged readers visualize, or create pictures in their mind, as they read. Then, teacher explained that readers make visual images using information from the text and what they already know about the subject. Teacher pointed out that the illustrations in a book could also provide information to add to visualizations. Teacher had students close their eyes as you read page 5 aloud.

Teacher asked students to draw a representation of what they visualized and invited volunteers to share their visualization with the whole class, and discussed how their pictures compare to the picture in the book. Teacher pointed out and explained that most stories have story elements, such as characters, setting, and plot. Teacher reminded students that characters are often the people in the story. Teacher also mentioned that engaged readers can analyze characters by examining the characters' words, actions, and thoughts. Teacher created three columns on the board with the headings Words, Actions, and Thoughts and explained to students that as they read the story, they should consider the words, actions, and thoughts of the main character, Helga. Point out that analyzing these traits will help students learn more about Helga.

Teacher asked students while they were reading the book, monitored their understanding with the following questions. Teacher encouraged students to support their answers by citing evidence from the book.

• What are Helga's three rules? page 4

• How do the illustrations on pages 6 and 7 help readers understand how the students feel about wearing purple? pages 6–7

• How does Helga respond to the boy who does not own any purple clothes? page 8

• What do the students do when Helga shares her rule about prune juice? pages 10–12

Teacher asked students what words, if any, they marked in their book and used this opportunity to model how they could read these words using decoding strategies and context clues.

Students analyzed Words, Actions, and Thoughts table and discussed the answers they gave. Teacher had students share their work in groups and invited volunteers to share their results with the class, identifying the details and illustrations they used to analyze the main character, Helga. Remind students that analyzing characters helps readers understand the characters in a story by considering what the characters say, think, and do.

Week 6 (November 13th, 2019). In this lesson, the students read the book "Joe's Stop Sign", whose genre was realistic fiction. The book was provided in level J.

Teacher wrote the phrase stop sign on the board and have students share what they know about the use of stop signs and the need for them. Teacher encouraged students to explain what they had known about how cars and bicycles must behave when approaching a stop sign and where students might find stop signs in their neighborhood. Teacher also asked students what they think traffic would be like without stop signs.

Teacher gave students their copy of the book and guide them to the front and back covers and read the title. Teacher had students discuss what they see on the covers and also encouraged them to offer ideas as to what type of book it is (genre, text type, fiction or nonfiction, and so on) and what it might be about.

Teacher explained that writers have reasons for what they write and wrote the following words on the board: problem and solution. Teacher stressed that people review or explain that a problem is something that is difficult to deal with or hard to understand and must be worked out or solved (such as a street not being safe). A solution is an act or a process of solving the problem (such as finding a way to make the street safer).

Teacher asked students read to find out more about the characters' problems and the solutions they choose and reminded them to stop reading at the end of each page with a sticky note to quickly retell in their mind the details of the events so far in the story. Teacher modelled retelling the events of the story using the illustrations as a guide. Then, teacher introduced and explained the problem-and-solution worksheet and pointed out that the first two problems were worked out aloud and written on the board. Then, the teacher asked students to write the problem from page 5 on their worksheet (it's harder to cross the street). Teacher chose volunteers to share possible solutions to this problem, discussed a positive and negative consequence of each possible solution. Teacher also recorded all of their ideas on the board under the Possible Solutions and Consequences headings.

Teacher asked students what words, if any, they marked in their book and used this opportunity to model how they could read these words using decoding strategies and context clues.

Teacher had volunteers retell the events to the end of the book, using the illustrations from pages 13 through 15 of the book. Then, teacher also had students retell the story to a partner, starting at the beginning. Students checked each other while listening their friends for whether students include the following: main characters, setting, correct events in order, and events in detail.

In the last week, post tests were administered. First of all, the students in the gamified e-book reading group were asked to fill the reading motivation survey and digital attitude scale again. The questionnaires were printed. The teacher requested the students to fill in the survey until the end of the lesson. Additionally, the researcher applied a focus group interview with randomly selected five experiment group students about their understanding of the whole process and whether they would like to use directed reading in their classroom. The researchers aim was to investigate the students opinions about the experiment.

E. Parents' Permission Form

Sevgili Ebeveynler,

Kitap okuma ile ilgili gerçekleştirilen bir çalışmada çocuklarınızın görüşlerine ihtiyaç duyulmaktadır. Öncelikle, Kişisel Bilgi Formu başlığı altında yer alan sorulara cevaplamaları gerekmektedir. İkinci adımda "Okuma Motivasyonu Ölçeği"nde yer alan yirmi üç (23) maddenin karşısında yer alan numaralardan sizin için uygun olan seçeneğe X işareti koymaları beklenmektedir. Bu numaralardan "1: Benden Çok Farklı", "2: Benden Biraz Farklı", "3: Bana Biraz Benziyor", "4: Bana Çok Benziyor" anlamını taşımaktadır. Araştırma süresince ingilizce hikaye kitapları okuyacaklar ve okuduğunu anlama soruları yanıtlayacaklardır. Verilen yanıtlardan not almayacaklardır. Doğru ya da yanlış cevap yoktur. Çocuklarınızın katılımı tamamen anonim kalacak ve veriler bu formun sonunda adı geçen araştırmacılar tarafından analiz edilecektir. Araştırmacı, formu kimin gönderdiğini ve gönderildiği yeri bilmeyecektir. Veriler güvenli bir şekilde saklanacak ve sadece araştırmacı tarafından sürecin anlamlandırılması için kullanılacaktır. Bu daha kapsamlı bir araştırma projesinin bir parçasıdır ekran okumasının etkileri ve öğrencilerin deneyimleri hakkında bilgi sahibi olunmasına yardımcı olacaktır.

Çocuğunuzun anketi tamamlaması sadece 10 - 15 dakika sürecektir. Zaman ayırdığınız için şimdiden teşekkür ediyoruz! Katkılarınızdan dolayı teşekkür ederim.

Yönergeleri okudum ve çocuğumun araştırmaya katılmasın kabul ediyorum.

◯ Evet ◯ Hayır

Araştırmacı:

Ayşegül Liman Kaban

İletişim bilgileri : 05556480886 aysegul.liman@sfl.bau.edu.tr

F. Student Information Message

Sevgili Öğrenci,

Kitap okuma ile ilgili yapilan bir çalışmada görüşlerinize ihtiyaç duyulmaktadır. Öncelikle, Kişisel Bilgi Formu başlığı altında yer alan sorulara cevap vermeniz gerekmektedir. Bu bölümün 1 - 7. maddelerini sizin için uygun olan seçeneğe X işareti koyarak doldurunuz. İkinci adımda "Okuma Motivasyonu Ölçeği'nde yer alan yirmi üç (23) maddenin karşısında yer alan numaralardan sizin için uygun olan seçeneğe X işareti koyunuz. Bu numaralardan "1: Benden Çok Farklı", "2: Benden Biraz Farklı", "3: Bana Biraz Benziyor", "4: Bana Çok Benziyor" anlamını taşımaktadır.

Diğer bir deyişle, doğru ya da yanlış cevap yoktur. Katılımınız tamamen anonim kalacak ve veriler bu formun sonunda adı geçen araştırmacılar tarafından analiz edilecektir. Araştırmacı, formu kimin gönderdiğini ve gönderildiği yeri bilmeyecektir. Veriler güvenli bir şekilde saklanacak ve sadece araştırmacı tarafından sürecin anlamlandırılması için kullanılacaktır. Bu daha kapsamlı bir araştırma projesinin bir parçasıdır ekran okumasının etkileri ve öğrencilerin deneyimleri hakkında bilgi sahibi olunmasına yardımcı olacaktır.

Anketin tamamlanması sadece 10 - 15 dakika sürecektir. Zaman ayırdığınız için şimdiden teşekkür ediyoruz! Katkılarınızdan dolayı teşekkür ederim.

Araştırmacı:

Ayşegül Liman Kaban

İletişim bilgileri : 05556480886 aysegul.liman@sfl.bau.edu.tr

Tez Danışmanı:

Prof. Dr. Şirin Karadeniz sirin.karadeniz@bau.edu.tr

G. Personal Information Form

Kişisel Bilgi Formu

Okul adı:
Cinsiyet:
◯ **Kız** ◯ **Erkek**
Anne eğitim düzeyi:
◯ **İlkokul** ◯ **Ortaokul** ◯ **Lise** ◯ **Üniversite** ◯ **Lisansüstü**
Baba eğitim düzeyi:
◯ **İlkokul** ◯ **Ortaokul** ◯ **Lise** ◯ **Üniversite** ◯ **Lisansüstü**
Evinizde kitaplık var mı?
◯ **Evet** ◯ **Hayır**
Cevabınız evet ise evinizde size ait kaç adet kitap bulunmaktadır?
◯ **0-20** ◯ **21-50** ◯ **51- 100** ◯ **101 ve daha fazla**

H. Gamified Electronic Book Reading Groups Form

Oyunlaştırılmış Okuma grubu için Öğrenci Bilgi formu

1. Daha önce hiç RAZ-Plus ile karşılaştırınız mı ya da kullandınız mı?

◯ Evet ◯ Hayır

2. Daha önce tabletten, telefondan, bilgisayardan hikaye kitabı okudunuz mu?

◯ Evet ise altını çiziniz (tablet, telefon, bilgisayar)

◯ Hayır

3. Okul dışında telefon, tablet ya da bilgisayar kullanıyor musunuz?

◯ Evet ◯ Hayır

4. Haftada kaç gün tablet, telefon ve bilgisayar kullanıyorsunuz?

Okulda (1 2 3 4 5 6 7 Hiç kullanmıyorum)

Evde (1 2 3 4 5 6 7 Hiç kullanmıyorum)

5. Okul dışında tablet/telefon/bilgisayarı ne amaç ile kullanıyorsunuz?

◯ Oyun

◯ Not almak için

◯ Eposta yollamak için

◯ Arkadaşlarımla iletişime geçmek için

◯ İnternette dolaşmak için

◯ Sosyal medya da paylaşım yapmak için

◯ Kitap okumak için

◯ Derslerim için

◯ Diğer (Lütfen belirtiniz) ....

6. Oyunlaştırma kelimesini daha önce duydunuz mu?

◯ Evet ◯ Hayır

7. Oyunlaştırılmış okuma kelimesini daha önce duydunuz mu?

◯ Evet ◯ Hayır

8. Oyunlaştırılmış kitap okumayı sevdiniz mi?

◯ Evet ◯ Hayır

9. Diğer derslerinizde de böyle uygulamalar yapmak ister misiniz?

◯ Evet ◯ Hayır

I. Personalized Electronic Book Reading Groups Form

Kişiselleştirilmiş Okuma grubu için Öğrenci Bilgi formu

1. Daha önce hiç kişiselleştirilmiş okuma ile karşılaştırınız mı ya da kişiselleştirilmiş okuma aracı kullandınız mı?

◯ Evet ◯ Hayır

2. Daha önce tabletten, telefondan, bilgisayardan hikaye kitabı okudunuz mu?

◯ Evet ise altını çiziniz (tablet, telefon, bilgisayar)

◯ Hayır

3. Okul dışında telefon, tablet ya da bilgisayar kullanıyor musunuz?

◯ Evet ◯ Hayır

4. Haftada kaç gün tablet, telefon ve bilgisayar kullanıyorsunuz?

Okulda (1 2 3 4 5 6 7 Hiç kullanmıyorum)

Evde (1 2 3 4 5 6 7 Hiç kullanmıyorum)

5. Okul dışında tablet/telefon/bilgisayarı ne amaç ile kullanıyorsunuz?

◯ Oyun

◯ Not almak için

◯ Eposta yollamak için

◯ Arkadaşlarımla iletişime geçmek için

◯ İnternette dolaşmak için

◯ Sosyal medya da paylaşım yapmak için

◯ Kitap okumak için

◯ Derslerim için

◯ Diğer (Lütfen belirtiniz) ....

6. Kişiselleştirme kelimesini daha önce duydunuz mu?

◯ Evet ◯ Hayır

7. Kişiselleştirilmiş okuma kelimesini daha önce duydunuz mu?

◯ Evet ◯ Hayır

8. Kişiselleştirilmiş kitap okumayı sevdiniz mi?

◯ Evet ◯ Hayır

9. Diğer derslerinizde de böyle uygulamalar yapmak ister misiniz?

◯ Evet ◯ Hayır

J. PDF Electronic Book Reading Groups Form

Ekran Okuma grubu için Öğrenci Bilgi formu

1. Daha önce hiç ekrandan hikaye okudunuz mu ya da ekrandan kitap okuma aracı (kindle gibi) kullandınız mı?

◯ Evet ◯ Hayır

2. Daha önce tabletten, telefondan, bilgisayardan hikaye kitabı okudunuz mu?

◯ Evet ise altını çiziniz (tablet, telefon, bilgisayar)

◯ Hayır

3. Okul dışında telefon, tablet ya da bilgisayar kullanıyor musunuz?

◯ Evet ◯ Hayır

4. Haftada kaç gün tablet, telefon ve bilgisayar kullanıyorsunuz?

Okulda (1 2 3 4 5 6 7 Hiç kullanmıyorum)

Evde (1 2 3 4 5 6 7 Hiç kullanmıyorum)

5. Okul dışında tablet/telefon/bilgisayarı ne amaç ile kullanıyorsunuz?

◯ Oyun

◯ Not almak için

◯ Eposta yollamak için

◯ Arkadaşlarımla iletişime geçmek için

◯ İnternette dolaşmak için

◯ Sosyal medya da paylaşım yapmak için

◯ Kitap okumak için

◯ Derslerim için

◯ Diğer (Lütfen belirtiniz) ....

6. Ekrandan kitap okumayı sevdiniz mi?

◯ Evet ◯ Hayır

9. Diğer derslerinizde de böyle uygulamalar yapmak ister misiniz?

◯ Evet ◯ Hayır

K. Printed Book Reading Groups Form

Basılı Okuma grubu için Öğrenci Bilgi formu

1. Daha önce hiç sınıfta hikaye okudunuz mu?

◯ Evet ◯ Hayır

2. Daha önce okul kütüphanesinde hikaye kitabı okudunuz mu?

◯ Evet

◯ Hayır

3. Okul dışında hikaye kitabı okuyor musunuz?

◯ Evet ◯ Hayır

4. Haftada kaç gün tablet, telefon ve bilgisayar kullanıyorsunuz?

Okulda (1 2 3 4 5 6 7 Hiç kullanmıyorum)

Evde (1 2 3 4 5 6 7 Hiç kullanmıyorum)

5. Okul dışında tablet/telefon/bilgisayarı ne amaç ile kullanıyorsunuz?

◯ Oyun

◯ Not almak için

◯ Eposta yollamak için

◯ Arkadaşlarımla iletişime geçmek için

◯ İnternette dolaşmak için

◯ Sosyal medya da paylaşım yapmak için

◯ Kitap okumak için

◯ Derslerim için

◯ Diğer (Lütfen belirtiniz) ....

6. Kitap okumayı sevdiniz mi?

◯ Evet ◯ Hayır

9. Diğer derslerinizde de böyle uygulamalar yapmak ister misiniz?

◯ Evet ◯ Hayır

L. Reading Motivation Questionnaire

Okuma Motivasyonu Ölçeği

Wigfield, A. & Guthrie, J.T. (1997). Relations of children's motivation for reading to the amount and breadth of their reading. Journal of Educational Psychology, 89, 420-432.

Bakılacak Alt faktörler :

Özyeterlilik, Rekabet, Merak , Uyum , Sosyal , Tanınma

Madde	Okuma Motivasyonu Ölçeği	Benden çok farklı	Benden biraz farklı	Bana biraz benziyor	Bana çok benziyor
1	Gelecek yıl okumada daha iyi olacağımı biliyorum. (özyeterlilik)	1	2	3	4
2	İyi bir okuyucuyum. (özyeterlilik)	1	2	3	4
3	Okuyarak sınıf arkadaşlarımın çoğundan daha çok şey öğrenirim. (özyeterlilik)	1	2	3	4
4	Diğer derslerimle karşılaştırıldığında en iyi olduğum ders okumadır. (özyeterlilik)	1	2	3	4
5	Okuduğumuz bir şey hakkında sorulan sorunun cevabını tek bilen kişi olmaktan hoşlanırım. (rekabet)	1	2	3	4
6	Okuma ile ilgili verilen bütün ödevleri tamamlamak benim için önemlidir. (rekabet)	1	2	3	4
7	Okuma ile ilgili listelerde adımı görmek benim için önemlidir. (rekabet)	1	2	3	4
8	Okuma ödevlerimi diğer arkadaşlarımdan önce bitirmeyi severim. (rekabet)	1	2	3	4
9	Arkadaşlarımdan daha iyi okumak için çok çalışmaya razıyım. (rekabet)	1	2	3	4
10	Ailemle sık sık kütüphaneye giderim. (sosyal)	1	2	3	4
11	Kardeşime, arkadaşıma ya da yakınlarıma sık sık kitap okurum. (sosyal)	1	2	3	4

12	Öğretmenim ilgi çekici bir şeyden bahsettiğinde onunla ilgili daha çok şey okurum. (merak)	1	2	3	4
13	Hobilerim hakkında daha çok şey öğrenmek için okurum. (merak)	1	2	3	4
14	İlgimi çeken konularda bilgi edinmek için okurum. (merak)	1	2	3	4
15	Öğretmenimin iyi bir okuyucu olduğumu söylemesinden hoşlanırım. (tanınma)	1	2	3	4
16	Okuma ödevlerimi hep öğretmenimin tam istediği şekilde yaparım. (uyum)	1	2	3	4
17	Birisinin beni okuduğum için övmesi hoşuma gider. (tanınma)	1	2	3	4
18	Okumalarımın takdir edilmesinden hoşlanırım. (tanınma)	1	2	3	4
19	Okuma konusunda olabildiğince az ödev yaparım. (uyum)	1	2	3	4
20	Mecbur olduğum için okurum. (uyum)	1	2	3	4
21	Okuma ile ilgili ödevlerimi hep zamanında bitirmeye çalışırım. (uyum)	1	2	3	4
22	Yeni şeyler hakkında okumayı severim. (merak)	1	2	3	4
23	Arkadaşlarım zaman zaman bana iyi bir okuyucu olduğumu söyler. (tanınma)	1	2	3	4

M. Electronic Book Reading Attitude Questionnaire

Dijital Okuma Tutum Ölçeği

McKenna, M.C., Kear, D.J., & Ellsworth, R.A. (1995). Children's attitudes toward reading: A national survey. Reading Research Quarterly, 30(4), 934–956. doi:10.2307/748205

Maddelerde bakılan faktörler

Akademik Dijital , Serbest Dijital, Akademik Kağıt, Serbest Kağıt

		Çok iyi 6	**5**	**4**	**3**	**2**	**Çok kötü 1**
1	Bir dersin içeriğine yönelik, sınıfınızda internet üzerinden haber okuma fikrini nasıl bulursunuz? (Akademik Dijital)						
2	Boş zamanlarınızda arkadaşlarınıza kısa mesaj atma veya eposta yazma fikrini nasıl buluyorsunuz? (Serbest Dijital)						
3	Bir derse yönelik internet üzerinden okuma yapılmasını nasıl karşılarsınız? (Akademik Dijital)						
4	Boş zamanlarınızda arkadaşlarınızla cep telefonundan mesajlaşma düşüncesini nasıl buluyorsunuz? (Serbest Dijital)						
5	Boş zamanlarınızda sosyal medyaya yönelik internet sitelerine (instagram, twitter gibi) gezinme düşüncesini nasıl buluyorsunuz? (Serbest Dijital)						
6	Derse yönelik sınıfta internet üzerinden araştırma yapılmasını nasıl karşılarsınız? (Akademik Dijital)						
7	Sınıfta internet üzerinden bir kitabın okunması düşüncesini nasıl karşılarsınız? (Akademik Kağıt)						
8	Boş zamanlarınızda kitap okuma fikri sizce nasıldır? (Serbest Kağıt)						
9	Ders kitapları üzerinde yapılan okumayla ilgili düşünceyi nasıl buluyorsunuz? (Akademik Kağıt)						

10	Dersinizde kullanılmak üzere sınıfınızda bir gazete ya da dergi okunması fikrini nasıl buluyorsunuz? (Akademik Kağıt)

N. Book names and question types

Week 1 Book name: Brainstorm bear

A problem and solution

B Story Elements

C Analyze Character

D Main Idea and Details

E Vocabulary

Week 2 Book name: Different

A problem and solution

B Story Elements

C Analyze Character

D Main Idea and Details

E Vocabulary

Week 3 Book name: My Bones

A problem and solution

B Story Elements

C Analyze Character

D Main Idea and Details

E Vocabulary

Week 4 Book name: If I were in charge

A problem and solution

B Story Elements

C Analyze Character

D Main Idea and Details

E Vocabulary

Week 5 Book name: Joe's Stop Sign

A problem and solution

B Story Elements

C Analyze Character

D Main Idea and Details

E Vocabulary

O. Sample questions from the 'Different' book

1. What is one of the author's purposes for writing this story? (author's purpose)

to inform readers about the game keep-away

to persuade readers to tease other kids

to entertain readers with a realistic fiction story *

to enterteain readers with a nonfiction story

2. What is the main setting of this story? (Story Elements)

Kevin's backyard

School cafeteria

Classroom

Playground *

3. What makes Joey different? (Main idea and Details)

He is blind

He is deaf *

He is short

He is sick

4. What does the word 'insult' mean? (Vocabulary)

an angry comment

a funny comment

a scary comment

a rude comment *

5. Why does Joey have tears on his face?(Cause and Effect)

The boys are playing keep away with his hat. *

The boys kicked him.

He fell down and hurt himself.

He did poorly on a test.

6. What does the word 'sense' mean? (Vocabulary)

to use money for something

to be able to smell something

to become aware of something *

to think about something

7. What is the problem in this story? (Problem and Solution)

Kevin wants to play basketball with his friends.

Joey is being picked on needs help. *

Joey lost his hat.

Kevin gives Joey his hat back.

8. What happens after one of the boys tosses the hat to Kevin?(Sequence Events)

Kevin tosses it to another boy.

Kevin runs away with it.

Kevin hands it to Joey. *

Kevin puts it on his head and laughs.

9. What does the author want the reader to learn? (Author’s purpose)

It is okey to pick on someone your own size.

Don’t pick on deaf people.

Don’t tease someone just because he or she is different. *

If someone is being teased, just walk away.

10. What event concludes the story? (Sequence Events)

Kevin plays basketball with the guys.

Kevin gives Joey his hat back.

Kevin runs off to find Joey. *

Kevin tells the guys not to pick on Joey.

P. Sample personalized questions from the 'Different' book

1. What is one of the author's purposes for writing this story? (author's purpose)

to inform readers about the game keep-away

to persuade readers to tease other kids

to entertain readers with a realistic fiction story *

to enterteain readers with a nonfiction story

2. What is the main setting of this story? (Story Elements)

Your backyard

School cafeteria

Classroom

Playground *

3. What makes ____(name of the friend who is disadvantaged) different? (Main idea and Details)

He / She is blind

He / She is deaf *

He / She is short

He / She is sick

4. What does the word 'insult' mean? (Vocabulary)

an angry comment

a funny comment

a scary comment

a rude comment *

5. Why does ____(name of the friend who is disadvantaged) have tears on his face?(Cause and Effect)

The boys are playing keep away with his hat. *

The boys kicked him.

He / She fell down and hurt himself.

He / She did poorly on a test.

6. What does the word 'sense' mean? (Vocabulary)

to use money for something

to be able to smell something

to become aware of something *

to think about something

7. What is the problem in this story? (Problem and Solution)

You want to play basketball with your friends.

____(name of the friend who is disadvantaged) is being picked on needs help. *

____(name of the friend who is disadvantaged) lost **his / her** hat.

____(name of the reader) gives **____(name of the friend who is disadvantaged) his / her** hat back.

8. What happens after one of the boys tosses the hat to ____(name of the reader)?(Sequence Events)

You toss it to another boy.

You run away with it.

You hand it to **____(name of the friend who is disadvantaged)**. *

You put it on his head and laughs.

9. What does the author want the reader to learn? (Author's purpose)

It is okey to pick on someone your own size.

Don't pick on deaf people.

Don't tease someone just because he or she is different. *

If someone is being teased, just walk away.

10. What event concludes the story? (Sequence Events)

You play basketball with the guys.

You give **____(name of the friend who is disadvantaged) his / her** hat back.

You run off to find **____(name of the friend who is disadvantaged)**. *

You tell the guys not to pick on **____(name of the friend who is disadvantaged)**.

Q. Focus Group Interview Questions

This appendix shows the questions used in the semi-structure interview for the students.

About the course:

1. What do you think about this gamified e-book reading / personalized e-book reading/ PDF e-book reading program?

Ekran okumasının sınıfınızda uygulanması konusunda neler düşünüyorsunuz?

2. Do you think screen reading is a tool that can be used to increase the student's motivation to learn a foreign language?

Sizce ekran okuması öğrencinin yabancı dil öğrenme konusundaki motivasyonunu arttırmak için kullanılabilecek bir araç mıdır?

3. What are the factors that increase or decrease motivation in the English learning environment?

İngilizce öğrenme ortamında motivasyonu arttıran ya da azaltan unsurlar nelerdir?

4. What was the most interesting thing you observed in lessons where electronic reading was applied?

Ekran okumasının uygulandığı derslerde gözlemlediğiniz en ilginç şey neydi?

5. How was your performance comparing the first weeks and the last weeks of the course?

İlk ve son haftayı karşılaştırdığınızda ekrandan okuma performansınız hakkında ne düşünüyorsunuz?

6. When do you prefer to read e-books/ printed books?

Electronik kaynaktan okumayı/ Basılı kaynaktan okumayı ne zaman tercih edersiniz?

R. Questions for Reflective Journals to be Written by Participant Teachers

1- Reflect on your observations regarding the effects of electronic book reading lessons on your students' overall reading skills.

Öğrencilerinizin okuduğunu anlama becerileri hakkındaki gözlemlerinizi paylaşınız.

2- Reflect on your observations regarding the effects of electronic book reading lessons on your students' learning digital attitude and motivation.

Öğrencilerinizin dijital tutumları ve motivasyonları hakkındaki gözlemlerinizi paylaşınız.

3- Reflect on what you have observed while your students are reading their electronic story books.

Öğrencileriniz okuma yaparken ki gözlemlerinizi paylaşınız.

S. Levelled Books Detailed Information

Book name	Fountas & Pinnel	Reading Recovery	DRA	Lexile
Brainstorm Bear	I	14	15	430 L -540 L
Different	I	14	15	430 L -540 L
My Bones	I	14	15	430 L – 540 L
If I were in charge	J	15	15	430 L -540 L
Joe's Stop Sign	J	15	15	430 L -540 L

T. Students' Cambridge Movers Sample Test Results and the Relevant Book Levels

Listening Scores	Reading and Writing Scores	Speaking Scores	Total Scores	Book Levels	Class	N=96
8	10	15	33	I, J	6A	Student 1
12	10	14	36	I, J	6A	Student 2
11	15	12	38	I, J	6A	Student 3
6	14	18	38	I, J	6A	Student 4
16	10	15	41	I, J	6A	Student 5
11	17	14	42	I, J	6A	Student 6
7	19	17	43	I, J	6A	Student 7
8	20	15	43	I, J	6A	Student 8
6	14	18	38	I, J	6A	Student 9
13	15	15	43	I, J	6A	Student 10
15	14	14	43	I, J	6A	Student 11
11	13	12	36	I, J	6A	Student 12
11	17	18	46	I, J	6A	Student 13
14	15	15	44	I, J	6A	Student 14
15	18	14	47	I, J	6A	Student 15
14	18	17	49	I, J	6A	Student 16
10	17	15	42	I, J	6A	Student 17
15	17	18	50	I, J	6A	Student 18
11	20	15	46	I, J	6A	Student 19
15	20	14	49	I, J	6A	Student 20
14	13	12	39	I, J	6A	Student 21
6	13	18	37	I, J	6A	Student 22
5	12	15	32	I, J	6A	Student 23
10	21	14	45	I, J	6A	Student 24
12	18	17	47	I, J	6B	Student 25
8	15	15	38	I, J	6B	Student 26
12	16	18	46	I, J	6B	Student 27
11	10	15	36	I, J	6B	Student 28
6	10	14	30	I, J	6B	Student 29
16	15	12	43	I, J	6B	Student 30
11	14	18	43	I, J	6B	Student 31
7	10	15	32	I, J	6B	Student 32
8	17	14	39	I, J	6B	Student 33
6	19	17	42	I, J	6B	Student 34
13	20	15	48	I, J	6B	Student 35
15	20	18	53	I, J	6B	Student 36

11	15	15	41	I, J	6B	Student 37
11	14	14	39	I, J	6B	Student 38
8	13	12	33	I, J	6B	Student 39
12	17	18	47	I, J	6B	Student 40
11	15	15	41	I, J	6B	Student 41
6	14	14	34	I, J	6B	Student 42
16	18	17	51	I, J	6B	Student 43
11	17	15	43	I, J	6B	Student 44
7	13	18	38	I, J	6B	Student 45
12	20	15	47	I, J	6B	Student 46
6	16	14	36	I, J	6B	Student 47
13	13	12	38	I, J	6B	Student 48
15	13	18	46	I, J	6C	Student 49
11	12	15	38	I, J	6C	Student 50
11	17	14	42	I, J	6C	Student 51
8	14	17	39	I, J	6C	Student 52
12	15	15	42	I, J	6C	Student 53
11	16	18	45	I, J	6C	Student 54
6	10	15	31	I, J	6C	Student 55
16	20	14	50	I, J	6C	Student 56
11	15	12	38	I, J	6C	Student 57
7	14	18	39	I, J	6C	Student 58
8	10	15	33	I, J	6C	Student 59
10	17	14	41	I, J	6C	Student 60
13	19	17	49	I, J	6C	Student 61
15	20	15	50	I, J	6C	Student 62
11	20	18	49	I, J	6C	Student 63
11	15	15	41	I, J	6C	Student 64
8	14	14	36	I, J	6C	Student 65
12	13	12	37	I, J	6C	Student 66
11	17	18	46	I, J	6C	Student 67
6	15	15	36	I, J	6C	Student 68
16	18	14	48	I, J	6C	Student 69
11	18	17	46	I, J	6C	Student 70
7	17	15	39	I, J	6C	Student 71
15	17	18	50	I, J	6C	Student 72
12	20	15	47	I, J	6D	Student 73
13	20	14	47	I, J	6D	Student 74
12	13	12	37	I, J	6D	Student 75
16	13	18	47	I, J	6D	Student 76
10	12	15	37	I, J	6D	Student 77
11	21	14	46	I, J	6D	Student 78
6	18	17	41	I, J	6D	Student 79

16	15	15	46	I, J	6D	Student 70
11	16	18	45	I, J	6D	Student 71
7	10	15	32	I, J	6D	Student 72
8	10	14	32	I, J	6D	Student 73
6	15	12	33	I, J	6D	Student 74
13	14	18	45	I, J	6D	Student 75
15	10	15	40	I, J	6D	Student 76
11	17	14	42	I, J	6D	Student 77
11	19	17	47	I, J	6D	Student 78
8	20	15	43	I, J	6D	Student 79
12	20	18	50	I, J	6D	Student 80
11	15	15	41	I, J	6D	Student 81
6	14	14	34	I, J	6D	Student 82
16	13	12	41	I, J	6D	Student 83
11	17	18	46	I, J	6D	Student 84
7	15	15	37	I, J	6D	Student 85
8	18	14	40	I, J	6D	Student 86
6	18	17	41	I, J	6D	Student 87
13	17	15	45	I, J	6D	Student 88
15	17	18	50	I, J	6D	Student 89
11	20	15	46	I, J	6D	Student 90
11	20	14	45	I, J	6D	Student 91
8	13	12	33	I, J	6D	Student 92
12	13	18	43	I, J	6D	Student 93
11	12	15	38	I, J	6D	Student 94
6	21	14	41	I, J	6D	Student 95
16	18	17	51	I, J	6D	Student 96

U. Request for Permission to Conduct Research at a State School

To the directorate of the Istanbul Ministery of Education,

My name is Ayşegül Liman Kaban, and I am instructor at Bahcesehir University in İstanbul. The research I wish to conduct for my doctoral dissertation involves the exploration of the students' experiences from learning in class taught using the various e-reading environments. This project will be conducted under the supervision of Prof. Dr. Şirin Karadeniz, Rector of Bahcesehir University. I am hereby seeking your consent to spend time observing and offering 6 week course for 6th graders, interviewing between six and twelve students from each class, and collecting and reading personal journals they will keep as part of the research during the course of the 2019 fall semester. I have provided you with a copy of my dissertation proposal which includes a copy of the informed consent form to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Review Board.

If you require any further information, please do not hesitate to contact me at aysegul.liman@sfl.bau.edu.tr or 05556480885.

Thank you for your time and consideration in this matter.

Yours sincerely,
Ayşegül Liman Kaban
Bahcesehir University

V. Sample Personalized Story

Zeynep was setting up tables in Ö zgürlük . Zeynep noticed a brown bear up a tree nearby.
“Teacher, there’s a bear over there!” Zeynep called.

“What if it comes down and attacks us?” asked Zeynep.
Miss Miller took Sarah’s hand.
“We’ll keep a safe distance away,” Miss Miller replied.

"We need to get the bear down before our Ö zgürlük yard sale starts," Zeynep said.
"We could always cancel the Özgürlük yard sale," Miss Miller said.
"I put up so many signs," Zeynep groaned. "I know we can get the bear to come down if we just brainstorm the right idea."

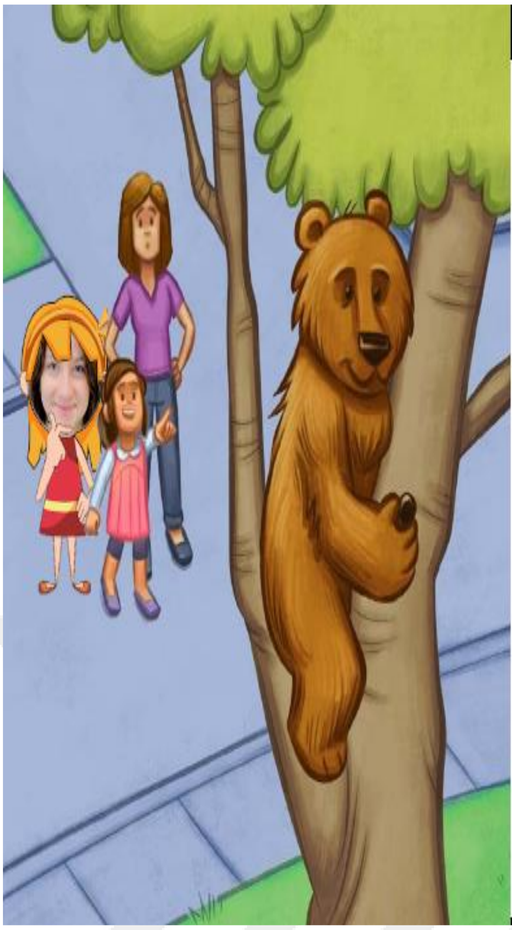
"Like the idea you had for the squirrel?" her teacher asked.
Two weeks before, Zeynep tried to stop the squirrels from eating all the birdseed. She dug a pit around the bird feeder and ruined her mother's tulips.

"This is different," Zeynep said. "I promised you I'd draw all my ideas first before I actually do anything.""We could move our trampoline under the tree so the bear could jump onto it," Sarah suggested.

Zeynep drew the idea on her notepad. Zeynep pictured the bear bouncing high into the air.
"I think the trampoline's too bouncy, Sarah," she said.

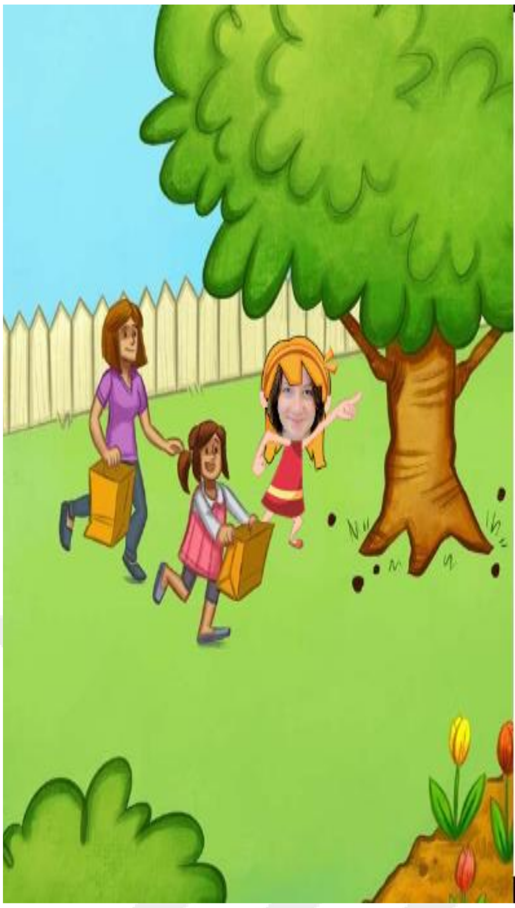
"Mom, what would you do to get the bear out of the tree?" Sarah asked.
"I'd play a really bad song from the radio," Sarah laughed.

Zeynep drew the idea on her notepad. Zeynep imagined the bear climbing even higher in the tree to get away from the noise.
"If you play a bad song the bear will never come down," Zeynep sighed.



"Look, the bear's eating something up there," Sarah said.
"It probably found some nuts that were stashed away by squirrels," Miss Miller said.

"I've got it!" Zeynep shouted. She scribbled her plan in the notepad and showed Miss Miller.
"We can make a trail of nuts leading back to the forest," Zeynep said.
"Let's get nuts!" teacher yelled.

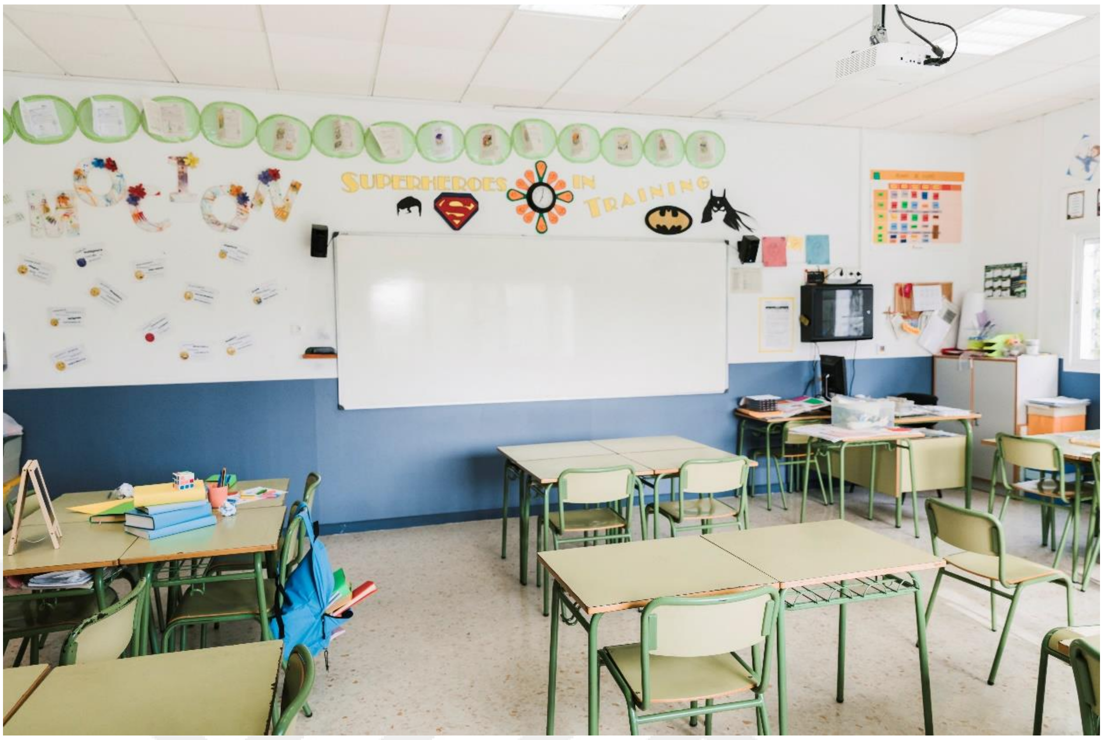


"All right, let's try it," Sarah said.
Everyone raced to the chestnut tree in the backyard.
"We're going to get that bear out of the tree!" Zeynep shouted.

While they were gathering the chestnuts, the bear climbed down from the tree. Zeynep returned just in time to see the bear disappear into the woods behind the neighbors' house.

“Aw, the bear is gone!” Zeynep said.
“Look on the bright side,” Sarah said. “At least you can have the Ö zgürlük yard sale now,” Sarah smiled.

W. Reading Environment in the Control Group



X. Reading Environment in the Experiment Group

CURRICULUM VITAE

PERSONAL INFORMATION

Surname, Name: Liman Kaban, Ayşegül

Nationality: Turkish (T.C.)

Date and Place of Birth: October 1985, İstanbul

Marital Status: Married

Email: aysegul.iman@gmail.com

EDUCATION

Degree	Institution	Year of Graduation
MA	Marmara University	2014
BS	Marmara University	2019

WORK EXPERIENCE

Year	Place	Enrollment
2014 – Present	Bahçeşehir University	Instructor
2012 -2014	Gedik University	Instructor
2009 – 2011	Marmara University	Instructor

FOREIGN LANGUAGES

Advanced English

CERTIFICATES

Pearson Master Trainer – 21.st cc skills, 25-26, June 2015, Istanbul/Turkey.

Pilgrims Teacher Training, Train the Trainer Course, January-February 2019, Istanbul/Turkey.

PROJECTS

May 2012, "Student Perceptions of Technology Use at Marmara University Preparation School". Researcher. Marmara University, BABKO.

September 2018, Teknoloji Entegrasyonu Planlama Modeli Kapsamında Yenilikçi Öğretmen Eğitimi, TÜBİTAK 4005 Bilim ve Toplum Yenilikçi Eğitim Uygulamaları Project Teacher Educator.

SCHOLARSHIPS

4 March 2011, British Council Elt Blogathon Winner, Turkey.

2013, IELTS Morgan Terry Scholarship 2013, UK.

2013, Germany National Agency, Train the Trainer, Germany

RESPONSIBILITIES

2013- Present Education Technologies Summit Managing Board Member

2012-Present TESOL Reviewer

2014–2016 IATEFL Testing Evaluation and Assessment SIG Newsletter Editor

2017- Present IATEFL Learning Technologies Special Interest Group Newsletter Editor

BOOK REVIEWS

Review of IELTS Foundation & Introduction books, IATEFL TEASIG Newsletter, 2014.

Review of Target Cambridge English First Student's Book (Richmond Publishing), IATEFL TEASIG Newsletter, 2014.

Review of Richmond Practice Tests for Cambridge English, IATEFL TEASIG Newsletter, 2014.

Review of Richmond Practice Tests for IELTS Student's Book, IATEFL TEASIG Newsletter, 2014.

PUBLICATIONS

Liman-Kaban, A., & Boy Ergul, I. (2020). "Teachers' Attitudes towards the Use of Tablets in Six EFL Classrooms". In E. Podovšovnik (Ed.), *Examining the Roles of Teachers and Students in Mastering New Technologies* (pp. 284-298). Hershey, PA: IGI Global. Doi:10.4018/978-1-7998-2104-5.ch015.

Liman-Kaban, A., Adiguzel, T., & Özaydın, M. N. (2019). "Responsive Open Learning Environment in a Higher Education Institution: A Case Study". In M. van Wyk (Ed.), *Student Support toward Self-Directed Learning in Open and Distributed Environments* (pp. 237-255). Hershey, PA: IGI Global. Doi:10.4018/978-1-5225-9316-4.ch011.

Liman-Kaban, A . (2019). Kişilerarası iletişimde duygusal bulaşmanın rolü: öğretmen öğrenci iletişimi üzerine bir araştırma / The role of emotional contagion in interpersonal communication: a research on teacher-student communication. *Maltepe Üniversitesi İletişim Fakültesi Dergisi*, 6 (1), 87-108. Retrieved from http://dergipark.org.tr/iled/issue/47108/592539

Liman-Kaban, A. (2019). *Oyun Canavarı*. İdeal Kültür Yayınevi.

Liman-Kaban, A. (2019). *Defne'nin Dijital Kimliği*. İdeal Kültür Yayınevi.

CONFERENCE PRESENTATIONS

September 2018, US Embassy Ankara, Gamify your English Classes, Ankara, Turkey.

March 2017, "ELT Ladies versus Math Gentlemen Panel", Panel Speaker, Education Technologies Summit, Istanbul, Turkey.

March 2016, "ELT Ladies in Education Technologies Panel", Panel Speaker, Education Technologies Summit, Istanbul, Turkey.

April 2016, "Gamify your classes", 50th Annual International IATEFL Conference and Exhibition, Birmingham International Conference Centre, Birmingham, UK.

June 2016, "Gamification in Education", The Telegraph Festival of Education, Berkshire, UK.

February 2015, "Mobile Collaborative Learning Tasks", Pleanary Speaker, TELT Conference, Istanbul, Turkey.

March 2015, "ELT Ladies in Education Technologies Panel", Panel Speaker, Education Technologies Summit, Istanbul, Turkey.

March 2015, "Technology at School: If you can't beat 'em, join 'hem!", Guest speaker, Fatih University Foreign Language Education Club, Istanbul, Turkey.

May 2015, "Teacher Tech Tool Box", Concurrent Speaker, Bilgi University ELT Conference, Istanbul, Turkey.

March 2014, "Emotions in Action: Say Hi to Happy Classes!", TELT Conference, Istanbul, Turkey.

April 2014, "Homemade Projects for Social Science Students", 48th Annual International IATEFL Conference and Exhibition, Harrogate International Conference Centre, Harrogate, UK.

April 2014, “Creating Digital Projects for ESP Classes”, 7th Virtual Roundtable Web Conference, Online Conference.

July 2014, “Creating Digital Projects for Language Classes” , RSCON5, Online Conference.

August 2014, “Add some spice to your writing classes”, BELTA TESL TORONTO Reading Writing Web Conference.

August 2014, “Topsy Turvy Teaching Experiences”, FLY HIGH WITH ITDI: Online Summer School MOOC for English Teachers.

March 2013, “The attitudes of EFL students on the use of video in prep classes”, 34th International TESOL Greece Conference, Athens, Greece.

May 2013, “The Amazing Portable Circus- How can we help our students to stay motivated, take responsibility and succeed in their language learning?”, Empowering Pre-service/Novice English Language Teachers in Turkey, Marmara University, Istanbul, Turkey.

May 2013, “Speaking Assessment fit for the future “, 10th Annual EALTA Conference 4th SIG Meeting: Classroom-Based Language Assessment, Istanbul, Turkey.

May 2013, “Mourning Online”, III. Media Studies Conference, Bilgi University, Istanbul, Turkey.

July 2013, "Using English Central strategy to increase students’ confidence in speaking", The European Conference on Language Learning Conference, Brighton, UK.

May 2012, "Add some spice to your reading and writing classes”, IATEFL Teacher Development Sig & Learning Technologies Sig Joint Conference, Yeditepe University, Istanbul, Turkey.

October 2012, "Perception of EFL Teachers and Students on Pronunciation Teaching / Learning Process”, International Symposium Foreign Language Education and Its Applications in Prep Classes I, Marmara University, Istanbul, Turkey.

April 2011, “Repeat after Johnny Depp”, Second International English Language Teaching Conference, Anadolu University, Eskisehir, Turkey.

May 2011, “Teach Profunciation”, 4.International English Language Teaching Convention, Fatih University, Istanbul, Turkey.

November 2011, “Digital Projects in EFL Classes”, 2. International English Language Teaching Conference, Duzce University, Duzce, Turkey.

November 2011, “The Impact of Digital Projects in EFL Classes”, Iowa International Language and Culture Convention, Iowa, USA.

November 2011, “Let’s glog on!”, 1. International English Language Teaching Convention, Dogus University, Istanbul, Turkey.

May 2010, "How to use English Central in our Classes", Marmara University, Istanbul, Turkey.

November 2010, “Profunciation”, 2. International English Language Teaching Conference, Aydın University, Istanbul, Turkey.

COURSES TAUGHT

Bahçeşehir University,Istanbul, Turkey (2014-Present)

2019 - 2020 Spring EDS1104 Instructional Technologies (BA) (2+0)

2019 - 2020 Spring ENG1004 Communication Skills and Academic Reporting II(2+0)

2019 - 2020 Fall EDS1104 Instructional Technologies (BA) (2+0)

2019 - 2020 Fall ENG1003 Communication Skills and Academic Reporting I (2+0)

2019 - 2020 Fall CET1203 Information Technologies Course (BA) (3+0)

2018 - 2019 Spring CET2020 Instructional Teachnologies and Material Design (BA) (3+0)