INONU UNIVERSITY
INSTITUTE OF EDUCATIONAL SCIENCES
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CURRICULUM AND INSTRUCTION PROGRAM

THE EFFECT OF GAMIFIED STUDENT RESPONSE SYSTEMS ON STUDENTS' ACHIEVEMENT, MOTIVATION AND ANXIETY LEVELS IN ENGLISH LANGUAGE TEACHING

DOCTORAL DISSERTATION

Ümit YAKAR

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The Effect of Gamified Student Response Systems on Students' Achievement, Motivation and Anxiety Levels in English Language Teaching

DOKTORA TEZİ

DANIŞMAN	HAZIRLAYAN
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Jürimiz tarafından 12/07/2024 tarihinde yapılan tez savunma sınavı sonucunda bu tez **oybirliği /~~oyçokluğu~~** ile başarılı bulunarak Eğitim Bilimleri AnabilimDalı DoktoraTezi olarak kabul edilmiştir.

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O N A Y

Bu tez, İnönü Üniversitesi Lisansüstü Eğitim-Öğretim Yönetmeliği'nin ilgili maddeleri uyarınca yukarıdaki jüri üyeleri tarafından kabul edilmiş ve Enstitü Yönetim Kurulu'nun …/…./20… tarih ve 20…./……..… sayılı Kararıyla da uygun görülmüştür.

Prof. Dr. Eyüp İZCİ

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HONOR PLEDGE

I hereby declare, on my honor, that the dissertation titled "The Effect of Gamified Student Response Systems On Students' Achievement, Motivation and Anxiety Levels in English Language Teaching" prepared as a doctoral thesis under the supervision of Prof. Dr. Süleyman Nihat ŞAD and Assoc. Prof. Dr. Hanife Gülhan KARSAK has been written entirely by me without any assistance that would violate scientific ethics and values. I confirm that all the sources I have used are properly cited both within the text and in the bibliography.

Ümit YAKAR

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ABSTRACT

THE EFFECT OF GAMIFIED STUDENT RESPONSE SYSTEMS ON STUDENTS' ACHIEVEMENT, MOTIVATION AND ANXIETY LEVELS IN ENGLISH LANGUAGE TEACHING

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One challenge in today's classroom is to create and maintain engagement and motivation amongst the students who spend most of their time in mobile games, apps, or other digital platforms. Therefore, many educators use games and game elements in teaching environment to increase student motivation, engagement, or achievement. Educational games in their non-digital forms have become popular starting with Piaget, in 1952, who defined game as a cognitive development experience for children. Digital forms of educational games are becoming more and more common and are used as teaching tools inside and outside of the classroom. Student response systems, which have recently been widely used in online or face-to-face classrooms, are one of these new gamified digital teaching tools that attract students' attention thanks to the game elements they contain. This study aims to examine the effects of gamified student response systems on students' achievement, motivation, and anxiety levels in teaching English. The research method of the study is embedded explanatory mixed design. The quantitative data of the research was obtained from the experimental process that was carried out with three different groups of EFL learners studying at İnönü University English Preparatory Program. Before and after the experimental procedure, the data on the achievement, motivation and anxiety levels of the groups was obtained and analysed. Students in experimental groups took formative assessment tests prepared with gamified student response systems called Kahoot and Socrative, whereas control group students took paper based formative assessment tests. Quantitative findings indicated that students who took paper-based formative tests achieved the highest average scores, suggesting that traditional assessment methods may provide a more structured and focused environment conducive to higher academic achievement. Qualitative data supported this, revealing that students valued the educational benefits of paper-based tests for reinforcing and

consolidating knowledge, despite challenges and anxiety being common themes. Conversely, gamified student response systems like Kahoot and Socrative were found to enhance engagement and motivation due to their fun and interactive nature, though they also induced anxiety.

Keywords: Student response systems, gamification, formative assessment, EFL

ÖZET

İNGİLİZCE ÖĞRETİMİNDE OYUNLAŞTIRILMIŞ ÖĞRENCİ YANIT SİSTEMLERİNİN ÖĞRENCİLERİN BAŞARI, MOTİVASYON VE KAYGI DÜZEYLERİNE ETKİSİ

Doktora, İnönü Üniversitesi Eğitim Bilimleri Enstitüsü
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Günümüz sınıflarındaki zorluklardan biri, zamanlarının çoğunu mobil oyunlarda, uygulamalarda veya diğer dijital platformlarda geçiren öğrenciler arasında bağlılık ve motivasyon yaratmak ve sürdürmektir. Bu nedenle, birçok eğitimci öğrenci motivasyonunu, katılımını veya başarısını artırmak için öğretim ortamında oyun ve oyun unsurlarını kullanmaktadır. Dijital olmayan formlarıyla eğitsel oyunlar, 1952'de oyunu çocuklar için bilişsel bir gelişim deneyimi olarak tanımlayan Piaget ile başlayarak popüler hale gelmiştir. Eğitsel oyunların dijital formları giderek daha yaygın hale gelmekte ve sınıf içinde ve dışında öğretim aracı olarak kullanılmaktadır. Son zamanlarda çevrimiçi veya yüz yüze sınıflarda yaygın olarak kullanılmaya başlanan öğrenci yanıt sistemleri de içerdikleri oyun öğeleri sayesinde öğrencilerin ilgisini çeken bu yeni oyunlaştırılmış dijital öğretim araçlarından biridir. Bu çalışma, oyunlaştırılmış öğrenci yanıt sistemlerinin İngilizce öğretiminde öğrencilerin başarı, motivasyon ve kaygı düzeyleri üzerindeki etkilerini incelemeyi amaçlamaktadır. Çalışmanın araştırma yöntemi gömülü açıklayıcı karma desendir. Araştırmanın nicel verileri, İnönü Üniversitesi İngilizce Hazırlık Programında öğrenim gören üç farklı İngilizce öğrenen grup ile gerçekleştirilen deneysel süreçten elde edilmiştir. Deneysel işlem öncesinde ve sonrasında grupların başarı, motivasyon ve kaygı düzeylerine ilişkin veriler elde edilmiş ve analiz edilmiştir. Deney gruplarındaki öğrenciler Kahoot ve Socrative adlı oyunlaştırılmış öğrenci yanıt sistemleri ile hazırlanan biçimlendirici değerlendirme testlerini, kontrol grubu öğrencileri ise kâğıt tabanlı biçimlendirici değerlendirme testlerini almışlardır. Nicel bulgular, kâğıt tabanlı biçimlendirici testleri alan öğrencilerin en yüksek ortalama puanları elde ettiğini göstermiş ve geleneksel değerlendirme yöntemlerinin daha yüksek akademik başarıya elverişli daha yapılandırılmış ve odaklanmış bir ortam sağlayabileceğini düşündürmüştür. Nitel veriler de bunu desteklemekte ve öğrencilerin, zorluklar ve kaygı ortak temalar olmasına rağmen, bilgiyi pekiştirmek ve sağlamlaştırmak için kâğıt tabanlı testlerin eğitsel faydalarına değer verdiklerini ortaya koymuştur. Buna karşılık, Kahoot ve Socrative gibi oyunlaştırılmış öğrenci

yanıt sistemlerinin, eğlenceli ve etkileşimli yapıları nedeniyle katılımı ve motivasyonu artırdığı, ancak aynı zamanda kaygıya neden olduğu görülmüştür.

Anahtar Kelimeler: Öğrenci yanıt sistemleri, oyunlaştırma, biçimlendirici değerlendirme, EFL

PART I

INTRODUCTION

This section includes the problem statement, significance of the study, sub-problems, assumptions, limitations, abbreviations, and definitions.

1.1. Statement of the Problem

Maintaining engagement and participation of individuals in a classroom has often been a challenging task for educators. Therefore, teachers try to use engaging instructional strategies to encourage student engagement in activities and to motivate them to be more active in the classroom. Learning through games, which is one of the oldest techniques used to attract students' attention was first used in military training (Bradshaw & Lowenstein, 2011). Csikszentmihalyi & LeFevre (1989) state that people achieve more when pleasure is stimulated during learning. Educational games, used for students to enjoy learning, are one way to motivate students, strengthen skills, and encourage collaboration through their experiential nature (Bradshaw & Lowenstein, 2011). There are extensive studies on game theory and game elements in different disciplines such as marketing, health, business and education (Bradshaw & Lowenstein, 2011; Csikszentmihalyi & LeFevre, 1989; Juul, 2011; Piaget, 1962; Salen & Zimmerman, 2003; Vygotsky & Cole, 1978). The term “game” has a variety of definitions in the literature. A game is a system in which players involve in an artificial conflict defined by rules, resulting in quantitative results” (Salen & Zimmerman, 2003, p. 80). In addition to this definition that highlights the elements of player, conflict, rules and quantitative outcome, Juul (2011) introduces another definition that highlights six aspects of the game. “A game is a rule-based system with a variable and quantitative outcome, different outcomes assigned different

values, the player making an effort to influence the outcome, the player feeling emotionally attached to the outcome, and the outcome of the activity debatable" (Juul, 2011, p. 36). It is known that educational games were used in the development of war games in China 3000 years ago, in Europe in the 18th century, and by the US army in this century (Bradshaw & Lowenstein, 2011). The use of games in education is mostly discussed under the theoretical umbrella of active learning and cooperative learning. The use of games has been brought into the business world to provide training in problem solving and decision making and used as a tool in academic education and in-service training (Bradshaw & Lowenstein, 2011). Avedon and Sutton -Smith (1971) stated that when games are used as an educational tool, they arouse more interest than traditional classroom activities, students acquire more, information can be retained for a longer time, students gain critical thinking and decision-making skills, and more behavior changes are achieved. Also, the element of luck in an educational game gives all students a chance to win, not just the hardworking ones, thus keeping participation higher (Bradshaw & Lowenstein, 2011). There are various reasons why educational games are becoming more and more widespread today. Current technology reduces the attention span of individuals, and innovation, instant gratification and immediate feedback are needed to maintain students' interest in learning content (Oblinger, 2006). One of the main problems in student-centered modern education is the active participation of students in the learning process and the lack of motivation (Kiryakova et al., 2014). Games can meet these needs because they are experiential and can provide frequent feedback. For this reason, educators, and especially curriculum developers, turn to games and offer students learning by doing experiences (Bicen & Kocakoyun, 2017; Squire, 2005). The use of game elements in non-game contexts has become an increasingly common strategy in education, health, marketing and business world to motivate individuals to reach desired behaviors (Dicheva et al., 2015). The presentation of teaching tools and contents together with games and game elements in classroom and out-of-class educational environments has revealed the concept of gamification (Dicheva et al., 2015).

Gamification is using game-based mechanics, visuals, game elements and way of thinking to solve problems, facilitate learning, increase participation and motivation in different areas during non-formal and formal education (Dicheva et al., 2015; Kiryakova et al., 2014; Wang et al., 2017). Games have some distinctive features that play a key role in gamification. Inclusion of all users (employees, customers, students), difficulties and tasks where users progress towards defined goals, having points accumulated as a result of the execution of tasks, dividing users into levels based on points, awarding rewards upon completion of tasks, ranking

users according to their achievements are some of these key features (Kiryakova et al., 2014; O'Donovan, 2012). Game elements used in gamification lead to a higher level of commitment and motivation of users to the activities and processes they are involved in, improving their ability to learn new skills by 40% (Zichermann & Cunningham, 2011a). Yildirim and Demir (2014) state that gamification increases academic success by providing motivation and a positive attitude towards the lesson (Kiryakova et al., 2014). Kapp (2012) lists the elements necessary for gamification in education as follows;

- *being game based,*
- *game mechanics,*
- *aesthetic,*
- *game thinking,*
- *participation,*
- *individuals,*
- *motivation,*
- *supporting learning and*
- *problem solving.*

Game-based refers to a system in which players achieve quantitative results by tackling an abstract challenge within a set of rules. The game mechanics used in many games include levels, badge earning, point systems, points and time restrictions. Engaging graphics or a well-designed user interface demonstrate the importance of aesthetics in the gamification process, as how an experience is perceived as aesthetically by a person greatly influences their willingness to accept gamification. Game thinking, one of the most important elements of gamification, is the idea of transforming ordinary experiences into an activity that includes elements of competition, cooperation, exploration and storytelling. Another important goal of the gamification process is to get someone's attention and get their active participation in the process as you create it. Individuals, another element of gamification, refers to the inclusion of individuals such as students, customers or employees as actors in the gamification process. In order to ensure that individuals participate in activities with high energy, motivation and the right amount of challenge is provided by the motivation element of gamification. Gamification promotes learning by incorporating engaging elements and using elements based on many educational psychologies, such as providing constructive feedback and encouraging collaboration on projects. The competitive nature of games encourages many to do their best to achieve the goal of winning, increasing their potential to help solve problems (Kapp, 2012). Different researchers state that the gamification strategy, which facilitates the work of educators thanks to the opportunities it provides to students, is used effectively in education (Dicheva et al., 2015; Nah et al., 2013; O'Donovan, 2012; Şad & Ozer, 2019; Sezgin et al., 2018; İ. Yıldırım,

2017; İ. Yıldırım & Demir, 2014). Gamification, like many other teaching techniques, has been adapted to digital environments in recent years. Gamification elements are also frequently encountered in mobile applications, software and web pages designed to be used in the field of education. Gamification elements are also used in digital student response systems, which are mostly used as a formative assessment tool, and it is known to increase the active participation and motivation of students (Dix, 2013; Şad & Ozer, 2019; Wang et al., 2017).

Formative assessment is one of the prominent assessment methods of the mastery learning model. Mastery learning model, which is one of the behavioural theory learning models, is a teaching approach that most educators are familiar with, in which students constantly repeat a series of learning activities and take quizzes until they master the pre-determined goals (Block & Burns, 1976; Davis & Sorrell, 1995; Demirel, 1991). In the mastery learning model, the aim is to enable students to master a subject completely or to a large extent before moving on to the next subject. The teacher determines at what mastery level will be achieved, provides students with various teaching strategies and materials, and exposes them to repeated tests. If the students' competencies about the subject is not sufficient, the tests and teaching are repeated until mastery is achieved by giving additional instruction or resources (Bloom, 1968; Davis & Sorrell, 1995; Demirel, 1991; Guskey, 1980). The repeated tests applied in the mastery learning model shape the next teaching content and method. For this reason, this assessment method is called formative assessment. Formative assessment aims to encourage learning by making an assessment based on teaching data and shapes the next teaching by showing the progress of each individual (Demirel, 1991; Glover et al., 2019). Formative assessment collects data about the learning process, unlike results-oriented assessments or standardized tests that determine the point of knowledge or mastery after a lesson or unit. Formative assessment is a way of framing learning activities in a way that produces observable and measurable data for both teachers and students. During formative assessments, students can discover what they have already learned and what areas they need to improve, while teachers can discover which knowledge, skills, and abilities need to be clarified and strengthened. There are multiple ways of doing formative assessment, such as asking for feedback with raise of hands or digital click/voting systems, and in-class observations (Coombe, 2018; Lambert & Lines, 2013). Especially with the widespread use of mobile devices, applications that enable high speed and effective data collection in classroom, more and more formative assessment applications are developed and become widespread. The user-friendly interfaces provided by these applications and the arrangement of various question types in a short time are seen as the

reason for the widespread use of these systems in education (Bolat et al., 2017). These applications, which enable students to answer certain types of questions in a short time, collectively or individually, are referred to by different names such as classroom feedback systems, interactive response systems, electronic voting systems, and personal response systems (Patry, 2009). The literature review shows that the most commonly used term for these applications is student response systems (SRS).

Student response systems instantly collect student responses via wireless mobile devices such as smartphones and tablets, displaying aggregated results in class and collecting instant feedback on questions asked by instructors (Aljaloud et al., 2015; Chaiyo & Nokham, 2017; Kaleta & Joosten, 2007). These digital assessment tools allow students to respond to questions instantly, cheerfully and competitively, providing teachers with instant collective data for individual or group assessment (Şad & Ozer, 2019; Yılmaz, 2017). Student response systems makes classroom assessment and evaluation more interactive and interesting with many different question types such as true-false, multiple choice, matching, sequencing, closed test, etc. (Başol et al., 2017; Şad & Ozer, 2019; Uçar & Kumtepe, 2017). In the classrooms where these applications are used, the instant display of the answers given to the questions of the students and teachers provides the students with the opportunity to see their mistakes immediately, and it creates critical moments for the instructors for correction, feedback and teaching. Student response systems, which are frequently used especially in large classrooms, encourage active learning, create a cheerful and competitive environment (Uçar & Kumtepe, 2017; Yılmaz, 2017), and thus improve learning by developing high-level cognitive skills such as problem solving and critical thinking. Ample evidence is found in literature on student response systems' positive contributions to learning (Adkins-Jablonsky et al., 2021; Dicheva et al., 2015; Gündüz & Akkoyunlu, 2020; Huang & Soman, 2013; Kiryakova et al., 2014; Özkan & Samur, 2017; Tan & Saucerman, 2017; Wang et al., 2017). Due to the fun and competitive nature of these platforms, they are often called gamification tools or gamified response systems (Uçar & Kumtepe, 2017; İ. Yıldırım & Demir, 2014). Today, there are many applications, websites and software that can be described as student response systems. Among these, examples of common applications that include game elements and can be called gamified student response systems are Socrative, Kahoot, FlipQuiz, Quizizz, Plickers (Bicen & Kocakoyun, 2017; Şad & Ozer, 2019). These applications basically convey different questions in different forms determined by the instructor in advance, to the students who answer the questions individually in the classroom at the same time with their mobile devices. The answers

to the questions are instantly presented collectively with the gamification elements such as bonus points, quick answer points, badges, levelling up, getting ahead, provided by the platform. In this research, Kahoot and Socrative, which are the most widely used gamified student response systems, will be used (Bicen & Kocakoyun, 2017; Y. Can, 2018; Çelik, 2015; Gündüz & Akkoyunlu, 2020).

Kahoot is basically a gamified student response system. Kahoot users can take quizzes or answer a survey in an easy and fun way with their smartphones or any device that can connect to the internet (Licorish et al., 2017; Türk, 2019; Uçar & Kumtepe, 2017). Teachers, on the other hand, can create the questions they want using this tool and use them for free on an ongoing basis. While preparing tests on Kahoot, teachers can benefit from basic options such as uploading pictures, videos, setting response times, and giving extra points. In addition, the types of questions vary in the tests prepared on the Kahoot platform (drag and drop, multiple choice, multiple answer, etc.). During the Kahoot game, students can immediately see the score they got after each question. This instant feedback makes students excited and more motivated.

Socrative is a game-based application that can be applied simultaneously with visual questions in the lesson. The Socrative application is a free application that can be used in a class to help students better understand the course topics and engage in collaborative discussions. In this application, students can get instant feedback and answer questions with their tablets and smartphones. Students try to collect points by answering the questions created by the teacher in the classroom with mobile devices. It is an easily usable gamification application, where students can get immediate feedback from the teacher about the wrong answers and gain leadership in group activities (Socrative, 2023).

Engagement (Tan & Saucerman, 2017; Wang et al., 2017; Yılmaz, 2017), motivation (Bicen & Kocakoyun, 2017; Gündüz & Akkoyunlu, 2020; Tan & Saucerman, 2017), academic achievement (Bolat et al., 2017; Dix, 2013; S. F. Jacobs, 2013; Rahmahani et al., 2020) and anxiety (Alsswey et al., 2024; Cárdenas-Moncada et al., 2020; Rahmahani et al., 2020; Shaker et al., 2021; Sun & Hsieh, 2021) has often been subject to research regarding gamified student response systems. In today's education, one of the main problems is to motivate students to the lesson and to reduce their anxiety levels while learning English (Han & Keskin, 2016). For this reason, educators use new techniques and approaches to encourage students to participate in activities and to motivate them to participate in education (Tan & Saucerman, 2017). Motivation refers to the student's willingness, need, desire and obligation to participate in the

learning process and be successful (Bomia et al., 1997). It is these feelings that enable students to participate in academic activities, keep them trying when things get tough, and determine how much they learn (Feng et al., 2013). Chen et al. (2012) argue that learning experiences affect learning motivations and argue that motivation to learn English can be increased with the environment and learning strategies. It is thought that gamified student response systems that excite students, provide a competitive environment and make them feel the sense of success instantly, thanks to the game elements they contain, will also contribute to the motivation of learning English. On the other hand, it is known that students' anxiety levels in English lessons adversely affect learning (Aydin & Zengin, 2008; Han & Keskin, 2016; Horwitz et al., 1986). Anxiety is a feeling of tension, worry, irritability and pressure associated with the stimulation of the nervous system (Horwitz et al., 1986). Adkins-Jablonsky et al., (2021) state that real-time gamified student response systems used to attract students' attention and measure their understanding cause less anxiety in students compared to other teaching tools. Supporting these research data with different studies was considered important in terms of revealing more findings regarding the use of such practices in the classroom.

Numerous studies have shown that learning activities that include games and gamification have positive effects on teaching and academic achievement (Adkins-Jablonsky et al., 2021; Dicheva et al., 2015; Gündüz & Akkoyunlu, 2020; Huang & Soman, 2013; S. F. Jacobs, 2013; Kiryakova et al., 2014; Tan & Saucerman, 2017; Wang et al., 2017). Researchers who argue the potential of games in education (Amr, 2012), include student opinions (Gündüz & Akkoyunlu, 2020) and state that it is one of the current issues of today's education field (Bicen & Kocakoyun, 2017). However, when the literature is examined, it can be said that there are few experimental studies. Supporting the limited number of findings on gamified student response systems with more experimental studies is vital in terms of detecting the deficiencies in the application and determining the effects on different variables. In addition, researchers working on the subject (Dicheva et al., 2015; Dix, 2013; Rahmahani et al., 2020; Şad & Ozer, 2019; Tan & Saucerman, 2017; Wang et al., 2017) suggest that gamified student response systems can be used in different contexts and with different groups. The necessity of experimental examination of more than one application with different groups is frequently emphasized in the literature.

1.2. Purpose and Significance of the Study

The aim of this study is to examine the effects of gamified student response systems on students' achievement, motivation and anxiety levels in teaching English as a foreign language.

Students involved in this experiential research took a series of formative tests through two different pre-determined gamified student response systems, namely Kahoot and Socrative. How each of the gamified student response system affect students' achievement, motivation and anxiety levels was examined. It is expected that the experimental data to be conducted will eliminate the deficiencies pointed out in the literature and will provide information about gamified student response systems to teachers and students. Gamified student response systems have been a method frequently used in marketing, education and training fields, especially to increase participant engagement (Adkins-Jablonsky et al., 2021; Bolat et al., 2017; Dicheva et al., 2015; Gündüz & Akkoyunlu, 2020; Huang & Soman, 2013; S. F. Jacobs, 2013; Kiryakova et al., 2014; Tan & Saucerman, 2017; Wang et al., 2017). With the widespread use of this engagement tool, many digital student response systems with similar and different features are offered to users through various platforms. Since the user interface of each student response system is different, it is very important for both students and instructors to understand the practical use of these applications in detail. Among these tools, Kahoot and Socrative applications, which contain gamification elements, are widely used (Bicen & Kocakoyun, 2017; Y. Can, 2018; Çelik, 2015; Gündüz & Akkoyunlu, 2020). Therefore, the number of scientific studies dealing with these student response systems is increasing every day. Many researchers examine the potential of games in education, include student views and describe the implementation processes (Amr, 2012; Bicen & Kocakoyun, 2017; Gündüz & Akkoyunlu, 2020), however, limited number of experimental studies exists in the literature. When the studies on student response systems are examined, it is seen that the necessity of examining gamified student response systems in different contexts, with different groups and more than one application, is frequently emphasized (Dicheva et al., 2015; Dix, 2013; Rahmahani et al., 2020; Şad & Ozer, 2019; Tan & Saucerman, 2017; Wang et al., 2017). Supporting the limited number of findings on gamified student response systems with more experimental studies was considered important in terms of detecting the deficiencies in the application and determining the effects on different variables. One critical concern is that gamification alone may not be sufficient to achieve the desired learning outcomes. Scholars argue that there is a need for further exploration and empirical evidence regarding the efficacy of different game elements and their implementation (Hanus & Fox, 2015; Jagušt et al., 2018; Kapp, 2012). It is believed that additional research should be conducted to identify efficient ways to implement game elements that can effectively enhance learners' engagement, motivation, and performance. This indicates that a deeper understanding of the underlying mechanisms and contextual factors influencing the impact of gamification is essential. Although the gamified approach appears to

have a significant impact on motivation and engagement, traditional SRSs that do not contain gamification elements and paper-based forms show only slight differences in student motivation and engagement (Wang et al., 2017). Therefore, it is suggested that there is a need to experiment with various types of student response systems, including different features, to determine which gamification elements and features are effective in motivating and achieving students.

The increasing integration of interactive technologies in education has led to significant research on gamified student response systems (SRS) such as Kahoot and Socrative, examining their impact on motivation, engagement, anxiety and academic performance. Studies such as those by Chaiyo & Nokham (2017) and Licorish et al. (2017) show that platforms like Kahoot and Quizizz significantly increase student focus, engagement, enjoyment, motivation, and satisfaction compared to traditional methods. Similarly, Incekar (2023) reports significant improvements in achievement scores and motivation levels through the use of Kahoot. Öden et al (2021) confirmed these findings, noting significant increases in students' attitudes towards English as a foreign language (EFL) courses and their motivation, although the reduction in exam anxiety was not statistically significant. Cognitive benefits have also been observed, with Turk (2019) highlighting positive impacts on students' attitudes and retention, despite minimal contributions to vocabulary achievement. Other studies, such as those by Ayten (2022) and Y. Can (2018), point to significant improvements in grammar skills and academic achievement. In addition, Shaker et al. (2021) found that Kahoot improved learning and engagement in statistics classes, with a slightly smaller effect on anxiety. Research further suggests that gamified SRS can create a more positive and less stressful learning environment and improve student outcomes by reducing classroom anxiety and encouraging active participation, leading to better interaction, concentration and final grades (Adkins-Jablonsky et al., 2021; Altwijri et al., 2022; Karatekin, 2017; Rahmahani et al., 2020; Tuttle, 2021; Wood, 2020). However, while these tools generally improve students' views and motivation, their direct impact on academic achievement can vary depending on implementation and context. Overall, gamified SRS improve engagement and the learning process, although their effect on academic performance is not always consistent, highlighting the need for further research to determine the optimal conditions for their effectiveness.

1.3. Research Questions

This research attempts to explain “How gamified student response systems affect students' achievement, motivation and anxiety levels while learning English as a foreign

language?" Within the framework of this basic research question, the following sub-questions are created.

1.3.1. Sub-Problems Related to the Quantitative Dimension of the Research

- How do gamified SRSs affect students' achievement level in learning English?
- How do gamified SRSs affect students' motivation level in learning English?
- How do gamified SRSs affect students' anxiety level in learning English?

1.3.2. Sub-Problems Related to the Qualitative Dimension of the Research

- What are students' views on Kahoot tests?
- What are students' view on Socrative tests?
- What are students' views on Paper based tests?

1.4. Limitations of the Study

The study is limited to the academic year 2023-2024 and is restricted to 53 students studying in the English Preparatory Programme of the School of Foreign Languages at İnönü University. The study was limited to formative assessments using Kahoot, Socrative and traditional paper-and-pencil methods. Moreover, the experimental period was limited to 8 weeks and 10 formative tests were administered during this period. Formative tests are limited to the content of Wide Angle 3 book of Oxford University Press. A limitation of this study is that the achievement test primarily measures learning outcomes related to vocabulary, grammar, writing strategies, and reading comprehension. One notable limitation of this study is the initial design intention to conduct the experiment with five groups—three experimental and two control groups—to comprehensively assess whether the observed results were attributable to the formative tests themselves or the methods of delivery. However, due to logistical constraints at the School of Foreign Languages, which had only three groups of A2 level students available, this experimental design was conducted with 3 groups. These limitations should be taken into consideration when interpreting the results.

1.5. Assumptions

It is assumed that the students who participated in the study provided honest and accurate responses to the qualitative and quantitative data collection tools, genuinely reflecting their perspectives and experiences related to the researched topic.

1.6. Definitions and Abbreviations

Student Response System (SRS): A Student Response System (SRS) is a technological tool that enables students to respond to questions in real-time using devices such as clickers, smartphones, or tablets, providing immediate feedback for assessment and active learning.

Gamification: Gamification involves the application of game design elements and principles in non-game contexts to enhance user engagement, motivation, and participation, particularly in educational settings.

Formative Assessment: Formative assessment encompasses various evaluative processes conducted during the learning process to provide ongoing feedback, guiding instructional strategies and improving student understanding and performance.

Foreign Language Anxiety (FLA): Foreign Language Anxiety refers to the feeling of nervousness, fear, or apprehension experienced by learners when engaging in activities related to learning a foreign language, often negatively impacting their performance and confidence.

Intrinsic Motivation: Intrinsic motivation is the drive to engage in an activity for its inherent enjoyment and satisfaction, rather than for some separable consequence or external reward.

Extrinsic Motivation: Extrinsic motivation involves performing an activity to achieve an outcome that is distinct from the activity itself, such as earning a reward or avoiding punishment.

EFL (English as a Foreign Language): EFL refers to the study of English by non-native speakers in regions where English is not the dominant language, focusing on the acquisition and use of English for various purposes.

PART II

THEORETICAL FRAMEWORK AND RELEVANT LITERATURE

2.1. Theoretical Framework

This chapter focuses on the theoretical framework of this study. Throughout the chapter, main topics and their subtopics will be explained with references to the basic literature resources in the field. The concepts and expressions will be described as it is employed within the framework of this research.

2.1.1. Game-Based Learning

In today's educational settings, teachers are constantly searching for innovative instructional approaches to tackle the challenges of student motivation and engagement. Traditional methods often fall short in capturing students' attention and fostering deep learning (De Freitas, 2006; Dicheva et al., 2015; Pivec, 2009). GBL, an approach that incorporates game elements and mechanics into educational contexts, has gained significant attention in various fields. Educational games have the unique ability to teach not only knowledge but also vital skills such as problem-solving, collaboration, and communication (Dicheva et al., 2015). They possess remarkable motivational power, allowing learners to engage in activities while learning (Avedon & Sutton-Smith, 1971; Blunt, 2007; Pivec, 2009; Plass et al., 2015). Both Piaget and Vygotsky, renowned developmental psychologists, emphasized the importance of games in children's acquisition of knowledge. Piaget (1962), proposed that cognitive development follows a sequential pattern, like the progression of games, involving practice games, symbolic

games, and games with rules. Vygotsky (1978, p. 94), on the other hand, recognized play as a pivotal factor in a child's development, stating that it involves essential developmental tendencies.

It is known that games have been part of human life for over 3000 years, primarily being used in the field of military training with an expansion of its use to other fields such as business, education and health (Amr, 2012; Bradshaw & Lowenstein, 2011). After first emergence in China, games have spread around the world and towards different fields being used for decision making, problem solving and training in different fields. As the focus of education shifted from the teacher to the student in the late 1950s, game use in teaching became popular among educators who designed their classes around experience-based learning (Bradshaw & Lowenstein, 2011). Ever since, the use of games in education has grown into becoming a separate theory of education called game-based learning (Amr, 2012; Avedon & Sutton-Smith, 1971; Bradshaw & Lowenstein, 2011; Freitas & Maharg, 2011; Gibson et al., 2007; Prensky, 2001).

Game-based learning is a modern way to engage, motivate and help students learn more facts and principles, involve in classroom activities more enthusiastically and retain information for a longer period of time (Avedon & Sutton-Smith, 1971). Educational approaches that use game components may also offer advantages over traditional approaches, such as learner autonomy, individualized learning, engagement, and motivation (Avedon & Sutton-Smith, 1971; Lee & Hammer, 2011; Salen & Zimmerman, 2003). Numerous studies (Bradshaw & Lowenstein, 2011; Cárdenas-Moncada et al., 2020; De Freitas, 2006; Dicheva et al., 2015; Gibson et al., 2007; Huizenga et al., 2009; Lee & Hammer, 2011; Pivec, 2009) have shown the benefits of game-based learning. It has proven successful in formal education, particularly in domains such as military, medical, and physical training. GBL provides learning experiences for learners to develop essential competencies such as critical thinking, communication, and decision-making skills (Coffey, 2009). Moreover, the use of games can help foster soft skills such as effective communication, teamwork, and project management, which are increasingly crucial in the modern job market (Pivec, 2009). Another key aspect of game-based learning is its ability to engage and motivate learners. Games offer an environment where making mistakes and engaging in trial and error are integral to the learning process (Pivec, 2009). Learners are motivated to learn, driven by the desire to improve and succeed within the game's context. Additionally, games provide immediate feedback, allowing learners to monitor their progress and make adjustments accordingly (Coffey, 2009; Nah et al., 2013). The interactive nature of

games also promotes collaboration among students, facilitating peer-to-peer learning and fostering a sense of shared achievement (De Freitas, 2006; Prensky, 2003). While games can be highly engaging, it is vital to align them with clear learning outcomes (Coffey, 2009). Designers face the challenge of balancing delightful play with achieving specified learning objectives. Effective game-based learning requires learners to be engaged, motivated, and supported, with learning experiences that are relevant to real-world contexts (De Freitas, 2006). By integrating well-defined learning outcomes into game design, educators can ensure that the instructional value of games is maximized. When the integration of game into educational setting are not carefully conducted, it is seen that some challenges might emerge.

While game-based learning has been recognized for its ability to enhance motivation and increase students' interest in the subject matter, the extent to which these factors transform into effective learning outcomes remains less clear (Druckman, 1995). One notable limitation of using digital-based games in the classroom is the constant change and upgrading of digital games, making it challenging for educational researchers to evaluate their educational impact (Pivec, 2009). Additionally, critics argue that games can be more distracting than traditional learning tools and may not always align with the specific learning goals of the classroom (Coffey, 2009). Unequal access to technology is also a concern, as insufficient technological resources can hinder some students' participation in game-based learning programs (Blunt, 2007; Gibson et al., 2007). Balancing the engagement and enjoyment of gameplay with the fulfilment of specified learning outcomes poses a key challenge for designers and educators (De Freitas, 2006). Nevertheless, studies indicate that students derive enjoyment from playing games, which can foster their willingness to invest in the game-based learning process and remain motivated even when facing challenges (Blunt, 2007). Game-based learning presents a promising approach to enhance student motivation and engagement in education. By leveraging the engaging and immersive nature of games, educators can create meaningful learning experiences that promote knowledge acquisition and the development of critical skills. However, the design and implementation of game-based learning should be carefully considered taking clear learning outcomes, student engagement, and the relevance into account. Further description on games and digital games is essential for a better understanding of game-based learning.

2.1.1.1. *Games*

Games, particularly game-based learning, have become an increasingly popular approach in education due to their unique characteristics and potential for engaging students in

the learning process. Various definitions of game-based learning highlight key features such as multiple outcomes, rules, and concrete objectives as fundamental characteristics of games. Yet, there is also a diversity in how different scholars define games. Games play a crucial role in fostering cognitive and social development in children (Piaget, 1962). Piaget (2001, p. 8), considered games as a form of play that involves rules and structures. Through games, children learn to understand and internalize rules, engage in social interactions, exercise problem-solving skills, and develop their cognitive abilities. Games provide opportunities for children to explore, experiment, and construct knowledge about the world around them. While Vygotsky did not provide an explicit definition of games, he discussed the role of play, including games, in children's cognitive development. According to Vygotsky, games are a vital tool for learning and development, particularly in the context of social interactions. He saw games as a means for children to engage in cooperative and imaginative play, which allows them to internalize and practice cultural norms, rules, and social roles. Vygotsky believed that through games, children not only develop their cognitive skills but also enhance their social and emotional abilities. Games provide a structured context for children to collaborate, negotiate, communicate, and solve problems together. These social interactions within games facilitate the development of language, reasoning, self-regulation, and social understanding (Bodrova & Leong, 2015).

Avedon and Sutton-Smith (1971, p. 22), define a game as an exercise of voluntary control systems, featuring a competition between powers constrained by rules, aiming to produce a diverse outcome. In this view, games involve deliberate control, competition, and the imposition of rules that shape the game's course, ultimately leading to an outcome that changes the initial balance. According to Huizenga et. al. (2009), play or game is a free and conscious activity that exists outside of ordinary life, characterized by a lack of seriousness but intense acquisition. It is an activity with less material interest or profit, governed by fixed rules and orderly progression within its own time and space. Play fosters the formation of social groups, often emphasizing secrecy and distinguishing itself from the common world through metaphors or other means. It can be both a contest and a representation, with the game either representing a contest or becoming a contest for the best representation. Salen and Zimmerman (2003, p. 80) provide a synthesized definition of a game, drawing from various scholars. They describe a game as a system in which players engage in an artificial conflict defined by rules, resulting in a quantifiable outcome. This definition highlights the presence of conflict, the role of rules, and the measurable results that emerge from the game-playing experience. Another comprehensive

definition suggests that game is an activity characterized by fun, governed by specific rules, involving varying degrees of strategy or chance. Games typically have one or more players who cooperate or compete, utilizing knowledge or skill to reach a specific goal. This definition covers the elements of enjoyment, rule-bound structure, player interaction, and the pursuit of objectives through cognitive abilities or chance factors (Bradshaw & Lowenstein, 2011, p. 175).

According to Prensky (2001), games possess six dimensions that define their nature and characteristics. First dimension is “rules”, which play a crucial role in distinguishing games from other forms of play, as they establish boundaries and pathways that lead players towards their objectives. These rules not only foster fair competition but also generate excitement within the game. Second dimension is “goals or objectives” that serve as the driving force behind a player's motivation. These goals can cover various achievements, such as attaining the highest score, reaching the game's conclusion, or striving for excellence. Third, “outcomes and feedback” provide measures of a player's progress in relation to their goals. Feedback, which is immediate and responsive, evaluates the player's actions, adherence to the rules, and indicates whether their behavior has been positive or negative. “Conflict and challenge” are integral dimensions that present problems to be resolved. Whether in individual or competitive settings against opponents (real or AI), this aspect of the game helps maintain the player's skill level and ensures a balanced progression. Fifth dimension, “interactivity” covers the interactions that occur within games. These interactions can involve the player and the computer through feedback mechanisms or interactions among players themselves, fostering social connections within the game. Lastly, “presentation” is an essential dimension that informs players about the game's subject matter and incorporates elements such as scenarios and storylines to enhance the overall experience. Similarly, (Garris et al., 2002), defined the characteristics of a game in any environment as a six-dimensional structure: fiction, rules/objectives, perceptual stimuli, challenge, mystery, and control (Deterding et al., 2011; Garris et al., 2002; Prensky, 2001).

While games can be an engaging and interactive way to facilitate learning, there are several disadvantages that instructors must consider. One drawback is the issue of timing. Fun activities, such as games and simulations, can sometimes take on a life of their own, making it challenging for instructors to control the timing of the class period. This requires instructors to be comfortable with reduced control or risk disrupting the flow of the lesson. While spontaneity and flexibility are important, there is also a need for planned sequences of activities and strict timekeeping. Another potential pitfall is competition. While competition can motivate some students, it may limit the engagement of those who do not win and potentially lead to decreased

self-esteem (Bruckman & Resnick, 1993). It is crucial for instructors to monitor the degree of competition and cooperation required to achieve educational goals and ensure that all class members feel supported. Additionally, the costs associated with developing and running a game can be high initially. Creating or fleshing out a game, especially simulation games, requires significant time and effort. In some cases, it may involve developing additional test questions or creating complex scenarios with diverse characters. Furthermore, it is important to acknowledge that the needs of all participants may not be fully met within a simulation or game. Therefore, these strategies should not be solely relied upon as teaching approaches. Finally, closure is essential to the learning experience. Instructors should allow adequate time for debriefing and actively listen to students' reflections and insights. By being attentive during this phase, instructors can facilitate a meaningful wrap-up of the game and ensure that the intended learning outcomes are effectively reinforced (Bradshaw & Lowenstein, 2011; Brannigan & Owen, 2006; Dicheva et al., n.d.).

2.1.1.2. Digital Games

In the past, people preferred games that involved real events and required physical presence in playgrounds. However, with advancements in technology, digital games played devices such as computers, tablets, and smartphones have become more popular (Freitas & Maharg, 2011; Prensky, 2003). The term “digital” refers to the use of electronic devices, either online or without any connection. This includes desktop computers, laptops, cell phones, game consoles, and mobile game consoles (Coffey, 2009; Pivec, 2009). When we explore the concept of digital gaming, we come across various definitions and classifications in the literature. One definition suggests that digital games are entertainment environments that combine different forms of media, such as visuals, sound effects, speech, and writing. In other words, digital gaming is an umbrella term involving video games, computer games, and nowadays, smartphone and social media games (Anastasiadis et al., 2018; Bal, 2019; De Castell & Jenson, 2007). On the other hand, Vogel et al., (2006) define digital games as virtual entertainment activities that involve interaction, reward, feedback, and specific goals. Crawford, (1984) suggests several qualities to define a digital game, including interaction with other players or the game itself, the presence of a captivating and imaginative reality, a safe environment where player actions have no real-life consequences, and the provision of motivating experiences like struggle and challenge. Other definitions are describing digital games as virtual interfaces to game worlds that are governed by rules, limitations, challenge, exploration, goal setting, and continuous feedback (De Castell & Jenson, 2007; Gros, 2007; Pivec & Pivec, 2011).

Prensky (2001, p. 8), known for the term “digital natives” for children born in the digital age, identifies key elements that attract the intense interest and attention of digital gamers and describes digital games within this framework. These elements include rules, goals, outcomes, feedback, feelings of struggle, competition, challenge, interactivity, and virtual reality. It is important to differentiate between traditional games and digital games when defining the concept of digital games. While they share similarities in terms of structure and purpose, they differ in the platform used for playing, the number of players, the materials involved, and the content of the games. Traditional games prioritize physical activities and allow players to determine the rules, play area, time, number of players, and equipment according to their preferences. On the other hand, digital games can be defined as systems where digital interfaces interact with computer programs and have specific rules and goals (Salen & Zimmerman, 2003). Digital games are considered highly engaging and entertaining technological environments for children, youth, and adults. Playing digital games allows individuals to experience virtual situations that may not be encountered in the real world, providing a safe and cost-effective way to do so (Anastasiadis et al., 2018; Bal, 2019; Brannigan & Owen, 2006; Coffey, 2009; De Castell & Jenson, 2007; Freitas & Maharg, 2011; Gros, 2007; Pivec & Pivec, 2011; Prensky, 2003). When used in classrooms, the abilities and features of digital games allow educators to build lessons with more engagement and excitement.

2.1.1.3. Game Elements

Games are sophisticated systems that involve numerous variables. To create an effective learning experience based on games, multiple elements must come together. It is the interplay and synergy among these elements that truly elevate games to their highest potential. Game elements possess distinct advantages over traditional learning methods, as they offer active engagement, immediate feedback, and experiential learning opportunities. Each game element serves a unique purpose, working both individually and collectively to shape the game-playing experience. Many learning professionals already incorporate some of these elements into their instructional practices, and by incorporating additional elements, they reach the full power of games to achieve impactful learning outcomes. By skilfully blending these elements, educators can create immersive and transformative learning experiences that captivate and motivate learners (Deterding et al., 2011; Gros, 2007; Lee & Hammer, 2011; Zichermann & Cunningham, 2011a).

Zichermann & Cunningham (2011, p. 36), suggests a framework that provides a valuable analysis of the key elements that contribute to the overall gaming experience. The

three main elements of games according to this framework are mechanics, dynamics, and aesthetics (MDA). Mechanics refer to points, levels, leader boards, badges, challenges/quests, on boarding, and engagement loops which are functioning components of the game that allow the designer to have control over the levers and rules of the game. Mechanics determine the specific actions and interactions available to the players, shaping their gameplay experience. These mechanics serve as the foundation for the game, providing structure and guidelines for player engagement. Dynamics, on the other hand, are the player's interactions with the mechanics. They include the various behaviours and actions that players engage in response to the mechanics of the game. Dynamics determine how players navigate and interact with the game system, both individually and in relation to other players. They play a crucial role in shaping the overall gameplay experience and creating emergent gameplay scenarios. While mechanics and dynamics are distinct concepts, they are intricately connected. Mechanics provide the framework, while dynamics bring the game to life through player engagement and interaction. The mechanics, dynamics, and aesthetics of a game shape the gameplay experience. Aesthetics, which result from the interaction between mechanics and dynamics, play a crucial role in influencing players' emotional engagement during gameplay. They include visual and auditory elements, storytelling, immersion, and the overall player experience (Zichermann & Cunningham, 2011). These are essential for fostering emotional connections and enjoyment within the virtual environment. Game designers utilize mechanics, dynamics, and aesthetics to create engaging and immersive experiences for players. The language used within these games is simple and accessible to a broad audience, and the sentence structure is straightforward and logical. Thus, gamification has proven to be a valuable tool or method across various design disciplines (Kapp, 2012; Werbach et al., 2012; Zichermann & Cunningham, 2011). This framework helps designers create engaging game experiences by enabling comprehensive analysis of game components. It enhances the design process and fosters innovation in diverse design fields.

According to Avedon & Sutton-Smith (1971), games consist of a comprehensive set of ten elements that contribute to their structure and experience. *The purpose* of the game establishes its aim or goal which is the first element, providing direction for players. Second, *the procedure* for action outlines the specific operations and required courses of action that players must follow, shaping the method of play. *The rules* governing action are fixed principles that determine conduct and set standards for behavior within the game. *The number of required participants* specifies the minimum number of players necessary for engaging gameplay. *Roles*

of participants define the different functions or responsibilities that players assume during the game. *Results* or *pay-off* assign values to the outcomes of players' actions, reinforcing progress and success. *Abilities and skills* required for action include the cognitive, sensory-motor, and affective domains, including the mental, physical, and emotional aspects needed to succeed in the game. *Interaction* patterns involve the eight types of possible interactions between an individual player and the group, shaping the social dynamics of the game. *The physical setting and environmental requirements* define the man-made or natural setting in which the game takes place, influencing the atmosphere and context of gameplay. Finally, *required equipment* covers the man-made or natural artefacts utilized during the game, serving as tools or resources for players' actions. Together, these ten elements form the foundation of games, shaping the gameplay experience and providing structure for players' engagement (Amr, 2012; Avedon & Sutton-Smith, 1971; Bradshaw & Lowenstein, 2011; Kapp, 2012).

Kapp (2012, p. 88), presents the results of numerous studies that hold significant relevance for those engaged in the game use in learning and instruction. These findings provide valuable insights for individuals seeking to incorporate game elements into educational settings. According to Kapp, there are 12 game elements that play a crucial role in games. These elements include Abstractions of Concepts and Reality, Goals, Rules, Conflict, Competition, or Cooperation, Time, Reward Structures, Feedback, Levels, Storytelling, Curve of Interest, Aesthetics, and Replay or Do Over. Each of these elements contributes to the overall effectiveness and engagement of the game-based experience. *Abstractions of Concepts and Reality* involves representing real-world concepts or ideas in a simplified or abstracted form within the game context. *Goals* refer to the specific objectives or targets that players strive to achieve within the game, providing a sense of purpose and direction. *Rules* establish the framework and guidelines that define how the game is played, outlining the boundaries and limitations within which players must operate. *Conflict, Competition, or Cooperation* element covers the presence of challenges, competitive elements, or cooperative interactions among players, shaping the dynamics of player interactions within the game. *Time* is a critical element that introduces a sense of urgency, deadlines, or time constraints within the game, adding a strategic dimension and driving players' decision-making processes. *Reward structures* include the mechanisms for recognizing and reinforcing desired behaviors or achievements within the game, motivating players to continue their engagement and progress. *Feedback* refers to the information provided to players regarding their performance, progress, or outcomes within the game, facilitating learning, improvement, and decision-making. *Levels* represent distinct stages

or tiers of progression within the game, offering a sense of advancement, unlocking new challenges or content, and providing a measure of skill development. *Storytelling* involves the use of narrative elements, characters, and plotlines to create an immersive and engaging game experience, fostering emotional connections and enhancing player engagement. *The curve of interest* refers to the intentional design of the game to maintain and modulate players' engagement and curiosity over time, ensuring a balance between challenge and enjoyment. *Aesthetics* covers the visual and sensory elements of the game, including graphics, sound, and overall design, contributing to the overall appeal and immersion of the game experience. *Replay or Do Over* element allows players to repeat or redo certain parts of the game, offering opportunities for learning from mistakes, improving performance, and exploring alternative strategies (Kapp, 2012, pp. 25–50).

2.1.1.4. Gamification

Gamification has emerged as a powerful approach to address the challenges faced by learning professionals in engaging learners and achieving effective training outcomes. According to Kapp (2012), incorporating game elements into learning experiences can significantly enhance engagement, relevance, and immersion, eventually facilitating the transfer of knowledge to real-world situations. The increasing popularity of video games among people of all ages, with an average player experience of over twelve years, further underscores the appeal and potential of gamification (Jagušt et al., 2018; Kapp, 2012). This growth in the gaming industry has fuelled the rapid expansion of the gamification sector itself, with more than 50 percent of organizations across different sectors, expected to gamify their processes within the next decade (Kapp, 2012). The diverse application of gamification spans various industries, from business schools to software companies, pharmaceutical companies to government organizations, highlighting its versatility as a learning, problem-solving, and innovation tool (Avedon & Sutton-Smith, 1971; Deterding et al., 2011; Kapp, 2012; Lee & Hammer, 2011; Nah et al., 2013). Even the military has leveraged gamification to enhance training in strategic thinking, war preparedness, and tactical skills (Avedon & Sutton-Smith, 1971). The increase of avatars, multiplayer online role-play games, and gamified collaborative techniques, coupled with their adoption in fields beyond traditional gaming contexts, signifies the growing momentum and acceptance of gamification as a vital component of learning and development (Amr, 2012; Bradshaw & Lowenstein, 2011). To remain relevant and effective in the evolving landscape, learning professionals must embrace gamification to engage learners

and achieve optimal training outcomes, which requires a comprehensive definition of gamification.

Gamification refers to the incorporation of game design elements in non-game contexts. It involves using game-based mechanics, aesthetics, and game-thinking to engage people, motivate action, promote learning, and solve problems (Kapp, 2012). The term gamification was used in 2003 and gained recognition in 2010. Deterding et al. (2011) defined gamification as the use of game elements in non-game contexts and suggests that objective of gamification is to increase user activity and retention by incorporating game elements. Gamification is a new approach that can bridge the generation gap between teachers and students. It is considered one of the emerging technologies that will have a significant impact on technologically advanced schools. It involves using game-based mechanics, aesthetics, and game thinking to engage students and enhance their learning experience (Faiella & Ricciardi, 2015). Another definition of gamification can be the strategic use of game elements, mechanics and game thinking to create an enjoyable, motivating and engaged learning environment in different fields such as social platforms, business competitions or education (Faiella & Ricciardi, 2015; O'Donovan, 2012; Zichermann & Cunningham, 2011a). It aims to improve cognitive, emotional, and social outcomes by integrating game elements into learning activities. However, it should not be limited to the superficial addition of points, rewards, and badges (Faiella & Ricciardi, 2015; Kapp, 2012). The concept of gamification also has historical roots, with the military and video games being early adopters of game-based techniques. It utilizes game elements to increase user engagement, motivation, and retention. However, it is important to avoid devaluing the subjects to be learned and understand that games alone cannot overcome all learning difficulties (Zichermann & Cunningham, 2011a). Gamification should be approached with careful attention to the environment and constant design adjustments to maximize its impact on learning. It can produce positive effects on cognitive, emotional, and social areas, leading to improved performance and scores. Additionally, providing frequent, meaningful, and rapid feedback can further enhance student achievement (Faiella & Ricciardi, 2015). Thus, gamification is not directly associated with knowledge and skills but influences students' behavior, commitment, and motivation, which can ultimately lead to improvements in their knowledge and skills. These definitions provide various perspectives on gamification, emphasizing its use of game elements in non-game contexts, its potential to enhance engagement and motivation, and the importance of considering the specific objectives and limitations of its implementation. It can be a powerful tool to engage and motivate students, but

its long-term effectiveness requires a comprehensive understanding of its limitations and the need for ongoing evaluation and adaptation (Kiryakova et al., 2014).

While gamification is gaining popularity in educational contexts, it is still subject to several limitations as highlighted by different researchers. One critical concern is that gamification alone may not be sufficient to achieve the desired learning outcomes. Scholars argue that there is a need for further exploration and empirical evidence regarding the efficacy of different game elements and their implementation (Hanus & Fox, 2015; Jagušt et al., 2018; Kapp, 2012). Moreover, it is widely acknowledged in the field of gamification that a one-size-fits-all approach is not suitable. A game element that proves successful for some students may produce contrasting results for others, even within the same class (Werbach et al., 2012). This emphasizes the importance of considering individual differences and tailoring gamification strategies to meet the unique needs and preferences of learners. Customization and personalization play a significant role in enhancing intrinsic motivation and ensuring optimal engagement in gamified educational experiences. Hanus & Fox (2015), found decreased motivation and satisfaction over time in students enrolled in a gamified university course compared to non-gamified courses. They attributed these results to a lack of personalization, which diminished intrinsic motivation, particularly among students who were already motivated. In addition to design and personalization challenges, technological limitations can impact the effectiveness of gamification. Communication difficulties that can lead to process loss may be due to the constraints of available technology (Kapp, 2012). In conclusion, the potential negative effects, such as decreased motivation, should be carefully considered. Technological constraints and communication difficulties can pose challenges in gamified experiences (Deterding et al., 2011; Kapp, 2012).

2.1.2. English Language

English language has achieved a global significance, emerging as a linguistic force recognized across borders and cultures. As Crystal (2003) notes, a language gains global status when it has a distinctive role acknowledged universally. The widespread use of English is not only a consequence of its number of speakers but is attributed to the identity of those speakers (Crystal, 2003). Among the thousands of living languages, English stands out as the most extensively utilized (Broughton et al., 2002). The relationship between language dominance and economic, technological, and cultural power is a crucial factor in understanding the global significance of English. The influence of English extends beyond linguistic boundaries and covers technology, commerce, science, and diplomacy. The technological and scientific

advancements in English-speaking countries have facilitated the popularity of English-language content worldwide, including television programs, films, and scientific literature (Broughton et al., 2002; Crystal, 2003). The language has become the primary medium for international business, commerce, and professional interactions, with estimates suggesting that English serves as an official second language for approximately 1.4 billion people (Larsen-Freeman & Long, 2014, p. 36). The mass media landscape, including newspapers, radio, and television, predominantly operates in English, especially in the film industry, with Hollywood productions playing a central role (Broughton et al., 2002; Crystal, 2003). Since English serves as the medium for a significant portion of the world's knowledge, particularly in fields such as science and technology, strategic choices are made by nations to adopt English as an official language or a primary foreign language in schools (Crystal, 2003). As Vonkova et al. (2021) emphasize, the growing interest in English as a foreign language requires learning opportunities that engage and sustain students' motivation. The global importance of English is thus closely linked to its diverse roles in communication, commerce, education, and culture, which shape the dynamics of the contemporary global landscape. Therefore, there has been a growing interest and in the field of teaching and learning English as a second or foreign language. In the context of this study, we will be focused on English as a Foreign Language (EFL).

2.1.2.1. English as a Foreign Language

English as a Foreign Language (EFL) plays an important role in today's globally connected world, enabling individuals to communicate, collaborate, and participate in global discourse. The categorization of languages into 'first,' 'second,' and 'foreign' statuses provides a framework while teaching English, but a careful description is essential to avoid oversimplification. English as a Foreign Language (EFL) refers to the teaching and learning of English in regions where English is not the primary language and does not hold essential social or national significance (Broughton et al., 2002; Setiyadi, 2020). The distinction between 'second' and 'foreign' language use in EFL settings is not solely based on fluency or ability, as exposure and official status do not always correlate with competence (Crystal, 2003). EFL scenarios often involve instrumental motivations, with learners seeking practical benefits such as communication with English speakers, reading English literature, or navigating English-speaking environments. In EFL contexts, the distinction between 'acquisition' and 'learning,' as put forward by Krashen (1985), points out the difference between the subconscious, natural process of language acquisition and the conscious understanding of language rules (Setiyadi, 2020). EFL instruction primarily occurs in classrooms, where learners may 'pick up' the

language with explicit guidance, emphasizing the dynamic interplay between language acquisition, instruction, and societal contexts (Larsen-Freeman & Long, 2014). This understanding of EFL incorporates linguistic, sociocultural, and educational dimensions, reflecting the diverse and complex nature of English language learning worldwide. In EFL, instrumental motivations often drive learners, such as the desire to visit English-speaking countries or communicate effectively with English speakers (Broughton et al., 2002). The role of English as a foreign language, taught in schools without significant national or social implications, has brought in several language learning and teaching approaches into the field (Broughton et al., 2002; Ellis, 1994; Larsen-Freeman & Long, 2014; Richards & Rodgers, 2014; Setiyadi, 2020).

2.1.2.2. Approaches in EFL

Various language teaching approaches and methods have evolved based on distinct language learning theories, influencing the selection of teaching materials and methods (Krashen, 1982; Richards & Rodgers, 2014; Setiyadi, 2020). The Grammar Translation Method (GTM) remains a standard approach for some educators, despite the introduction of new methods. Grammar-translation classes are usually designed for foreign language instruction and are taught in the student's first language (Krashen, 1982, p. 134). The Direct Method, associated with Gouin and Berlitz, emerged as an alternative to GTM, emphasizing association of ideas, visualization, and learning through senses in familiar situations. The Audio-Lingual Method (ALM), introduced in the USA in the 1940s, was based on structural linguistics and supported by technological advancements like tape recorders. The Silent Way emphasizes learner autonomy and active participation in language production, drawing inspiration from general educational principles. Community Language Learning (CLL) integrates counselling psychology into language teaching, requiring teachers to adapt principles to diverse learning situations. Suggestopedia, developed by Lozanov (Bancroft, 1976; Lozanov, 2004), claims accelerated memorization through its methods and has been applied in various subjects, including foreign language teaching. Total Physical Response (TPR) links language learning to motor activity, emphasizing a parallel process to acquiring the first language. Communicative Language Teaching (CLT), viewed more as an approach, centres on communicative competence and interdependence of language and communication. The Natural Approach, proposed by Terrel, prioritizes exposure to the target language, de-emphasizing grammar instruction in the classroom and focusing on natural, communicative situations for language acquisition. This diversity in approaches showcases the complexity of language teaching

philosophies, highlighting the need for educators to adapt methods to the specific contexts and needs of their learners (Krashen, 1982; Larsen-Freeman, 2000; Larsen-Freeman & Long, 2014; Richards & Rodgers, 2014; Setiyadi, 2020).

2.1.2.3. Digital Trends in EFL

Current trends in English language teaching reflect a significant integration of digital technologies to increase student motivation and engagement. Mobile Assisted Language Learning (MALL) on smartphones has been identified as a powerful tool to increase motivation and positive attitudes towards EFL learning, especially for everyday users of mobile technologies (Vonkova et al., 2021). The use of various digital tools, such as podcasts, blogs, augmented reality, and robot-assisted learning, has become widespread in EFL classrooms, contributing to motivational effects and improving learners' visualization of the L2 self (Bradshaw & Lowenstein, 2011; Riddell, 2012; Şad & Ozer, 2019; Ur, 2012). Integrating learning into leisure activities, such as blogging, has also been found to increase student motivation, and the use of social media and online collaborative learning provides platforms for creativity and peer interaction. Innovations such as augmented reality and digital storytelling further immerse students in real-world language experiences and facilitate multimodal language use (Vonkova et al., 2021). Furthermore, the rise of artificial intelligence (AI) and the Internet of Things (IoT) is transforming language teaching and learning in various EFL contexts (Klímová & Ibna Seraj, 2023; Li & Wong, 2023). Despite the continued use of traditional methods, there is evidence of innovative approaches and creative adaptations in the era of digital transformation in language teaching (Vonkova et al., 2021, p. 9). Another recent trend is use of chatbots in language practice, which have been shown to have a positive impact on learners' English language skills, emphasizing multiple features and fluency in both in-class and out-of-class practice (Klímová & Ibna Seraj, 2023).

Challenges and opportunities have emerged in the field of English as a Foreign Language (EFL), particularly in the context of rapidly evolving educational technologies. A key opportunity arises from the implementation of gamified interactive student response systems (SRS) using clickers, which have demonstrated improvements in intrinsic motivation and engagement among secondary school students (Vonkova et al., 2021). However, the potential of such technological interventions is restricted by technical challenges, including issues such as poor image quality, inconsistent sound quality and system crashes, which were found to have a negative impact on motivation in the studies (Vonkova et al., 2021). Additionally, the distinction between foreign language and second language situations

introduces inherent challenges. In foreign language classrooms, where conscious grammar often takes priority, learners may develop extensive formal knowledge but struggle with acquisition, leading to a potential overuse of their first language as a conversation starter (Krashen, 1985). The limitations of the classroom environment in exposing students to a diverse range of language discourse further pose challenges, as the variety within the classroom cannot match that of the outside world (Krashen, 1982). The measurement of individual difference variables in interaction studies remains a persistent challenge due to the primitive nature of assessment technology for learners (Larsen-Freeman & Long, 2014). Thus, innovative digital assessment tools might be seen as an opportunity in navigating these challenges. The field of EFL education stands at the intersection of technological advancements, linguistic diversity and evolving motivations, demanding ongoing exploration and adaptation.

2.1.2.4. Mobile Assisted Language Learning

Computers, tablets, and other devices are being used in the field of education to keep up with the rapid advancement of technology. Mobile learning with smartphones is now a common practice in almost every educational institution. Educators and students can use wireless devices for educational activities both inside and outside the classroom, given the widespread use of these devices. The opportunities provided by these portable devices in educational settings, including as access to a large amount of high-quality information (Cui & Wang, 2008), have led to a growth in mobile learning applications and mobile instructional design. It is required to describe mobile devices and mobile technologies to comprehend mobile learning fully and accurately. Mobile learning is not just an educational environment enhanced by mobile phones (Simonova & Poulova, 2016). The term “mobile devices” includes a variety of portable, internet-connected devices utilized in both virtual and real-world learning settings, including laptop computers, mobile phones, tablet computers, e-book readers, portable game consoles, multimedia players, MP3 players, handheld computers (PDAs), and digital cameras (Simonova & Poulova, 2016). The diverse functions of mobile devices offer opportunities for the learning process to be spontaneous, informal, contextual, portable, continuous, effective, and personalized (Hashemi et al., 2011). It is important to note that the term 'mobile' does not only refer to the device but can also refer to the mobility of the student or the content itself (Hashemi et al., 2011), allowing individuals to engage in educational activities in real-life contexts. This diverse nature of mobile learning expands its potential for a variety of educational activities (Simonova & Poulova, 2016). This includes providing access to documents and document resources, offering question and self-assessment tests, enabling participation in lectures and

special training sessions, granting access to both live and archived lectures, and facilitating accessibility to audio and video sources. Additionally, mobile learning supports the availability of asynchronous content, the display of student assignments, and the accessibility of virtual learning communities (Hashemi et al., 2011). The widespread use of mobile devices in education has given rise to new concepts in mobile learning (Churches, 2009). Bloom's Digital Taxonomy, established in 2009, was a response to the increasing popularity of mobile learning, applying the concept to the technology available at the time based on Bloom's ordered taxonomy (Churches, 2009). This approach acknowledges diverse learning styles and preferences, aligning with information and communication technology. Mobile learning is described as an ongoing process where educational activities are not confined to a specific location or time, utilizing portable educational content and enabling real-life learning through mobile technologies.

Mobile devices are extensively used in various industries, including education, with a rising trend among students learning English as a foreign language (Chung et al., 2015). The concept of “mobile-assisted language learning” (MALL) has emerged, utilizing mobile phones or other portable devices with internet connectivity for language education (Alemi et al., 2012; Baleghizadeh & Oladrostam, 2010; Chinnery, 2006). Studies emphasize that smartphones are particularly effective in language learning (Cui & Wang, 2008). These devices provide students with free access to rich foreign language content, making mobile-assisted language instruction valuable (I.-J. Chen et al., 2012). Mobile devices address four basic language learning skills and sub-skills, including vocabulary learning, pronunciation, reading, writing, speaking, and grammar (Gromik, 2012; Han & Keskin, 2016; Milutinović et al., 2015; Moskovsky & Alrabai, 2009). Alzahrani (2015) notes that gaining essential academic skills is crucial for effective use of mobile devices in language education. Social engagement facilitated by mobile devices is emphasized by researchers (Lan & Lin, 2019), indirectly contributing to language education. Mobile-assisted language teaching is found to reduce students' anxiety about speaking in a foreign language, aligning with Krashen's “Affective Filter” hypothesis (Han & Keskin, 2016; Krashen, 1982). Despite challenges in traditional language teaching, mobile devices with internet connectivity enable continuous exposure to a foreign language, enhancing the effectiveness of language learning experiences (Taj et al., 2017).

2.1.2.5. Gamification in Language Learning

Gamification has emerged as a promising approach to language learning and teaching. Yolageldili and Arikan (2011) emphasize the significance of games in encouraging students to

use language communicatively and effectively, fostering relaxation and enjoyment in the learning process. They suggest that, similar to acquiring one's mother tongue, EFL learners unconsciously acquire language skills while immersed in gameplay. Furthermore, Gunn and McCallum (2005) emphasize that students prefer alternative methods of learning grammar, which traditional approaches often lack. Krashen (1982) highlights the significant impact of learner motivation on language acquisition success, stressing the importance of emotional, physical, and mental engagement in the learning process. Gamified learning offers ESL students an enjoyable and immersive learning experience, thereby enhancing motivation and participation (Hashim et al., 2019). Another study (Zarzycka-Piskorz, 2016) revealed increased motivation among students after using gamified platforms like Kahoot, a gamified student response system. Zarzycka-Piskorz (2016) found that gamification effectively motivates English language learners in grammar acquisition. Therefore, gamification holds promise in language learning and teaching by fostering engagement, motivation, and effective skill acquisition. By using game elements, educators can create engaging and interactive learning environments that cater to learners' preferences and improve language learning outcomes.

2.1.2.6. Motivation in Language Learning

Motivation in foreign language learning is the combination of students' positive attitudes towards language acquisition, along with their desire and effort to achieve their goals (Gardner & Lambert, 1959). Motivation is widely acknowledged as a critical variable in second-language acquisition (Gardner & Lambert, 1959). However, its impact on learning outcomes remains a complex issue. Understanding how motivation influences language learning effectiveness requires exploring different motivational theories. There are numerous motivational theories that are relevant in the context of language acquisition. Self-Determination Theory (Deci & Ryan, 2013) emphasizes intrinsic and extrinsic motivation along with autonomy. Expectancy-Value Theory (Brophy, 1999) focuses on individuals' beliefs about their competence and the perceived value of the task. Achievement Motivation Theory by Atkinson and Raynor, (Dörnyei, 2001; Maehr, 1974) examines learners' objectives and the strategies they use to achieve them. Attribution Theory (Weiner, 1972) analyzes learners' attributions of success and failure to internal or external factors. There are other motivational theories that provide valuable insights into motivation within language learning field; however, this study will focus on few of these theories.

According to Gardner, motivation primarily affects second-language achievement when it is absent rather than being a determinant of maximum performance. He suggests that an

individual's aptitude limits their learning, but insufficient motivation may result in learning less. However, the exact nature of motivation remains an empirical question. Various motivational factors have been identified, including integrative orientation, which refers to a learner's desire to identify with the target language community, and instrumental orientation, which reflects a learner's focus on practical uses of the language. Motivation is believed to contribute to second-language achievement indirectly, by preventing underperformance rather than directly causing higher levels of proficiency. Essentially, learners with high aptitude but low motivation may not reach their language learning goals. Conversely, even those with lower aptitude can make significant progress if they are highly motivated (Gardner & Lambert, 1959). In language learning, motivation can be classified into two types: integrative and instrumental orientations (Bernaus & Gardner, 2008). Integrative orientation refers to a learner's desire to identify with the target language community and its culture, while instrumental motivation emphasizes the practical applications of the language, such as career advancement or travel. Educators can adjust their approach to accommodate diverse learner motivations by understanding these distinct orientations.

The contrast between intrinsic and extrinsic motivation introduces an additional layer of complexity of motivation in language learning. Intrinsic motivation stems from internal desires and the inherent satisfaction of learning itself, whereas extrinsic motivation arises from external rewards or pressures, such as grades or praise (Deci & Ryan, 2013; Dörnyei, 2001; Świątek et al., 2023). Self-Determination theory plays a significant role in language learning. Intrinsic motivation refers to engaging in an activity for its inherent satisfaction or enjoyment, while extrinsic motivation involves engaging in an activity for external rewards or to avoid punishment. In language learning, intrinsic motivation can be fuelled by factors such as personal interest in the language, enjoyment of the learning process, and a sense of accomplishment. Intrinsic motivation is linked to factors like interest, effort, and ability (Bomia et al., 1997; Deci & Ryan, 2013; Dörnyei, 2001). For example, a learner may be intrinsically motivated to learn English due to a genuine interest in the language or culture. Extrinsic motivation, on the other hand, can stem from external factors such as grades, rewards, or social approval. Extrinsic motivation can be influenced by factors like corporate culture, encounters with foreign professionals or peer learners, and ability. For instance, a learner may be extrinsically motivated to learn English to fulfill a job requirement or receive a promotion. A study on feedback engagement in English learning (Honda et al., 2006) found that intrinsic motivation significantly predicted action on teacher feedback, while extrinsic motivation and

self-efficacy predicted feedback seeking. Understanding both intrinsic and extrinsic motivations is crucial for effective language learning strategies. Intrinsic motivation can enhance engagement and enjoyment in the learning process, while extrinsic motivation can provide external incentives for learners (Bomia et al., 1997; Deci & Ryan, 2013; Dörnyei, 2001; Honda et al., 2006; Lepper et al., 2005).

Vygotsky (1978), emphasized that play has a purpose for children, aligning with Salen and Zimmerman's (2003) assertion that pleasure is a key intrinsic experience in games. Amr (2012), further highlighted the puzzling nature of the pleasure that individuals seek to experience. Intrinsic motivation, includes characteristics such as a sense of competence, curiosity, autonomy, volition, and goal orientation (Deci & Ryan, 2013; Dörnyei, 2001). These elements increase an individual's engagement and satisfaction with tasks and foster a desire for challenge, exploration, empowerment, and goal attainment in the learning process. The characteristics of intrinsic motivation demonstrate remarkable similarities with elements commonly found in gamification strategies. Competence aligns with tasks designed to allow users to demonstrate their skills and abilities, while curiosity corresponds to the element of surprise often integrated into gamified experiences, leading users to explore further and engage with the content. Autonomy is a crucial factor in intrinsic motivation, and it parallels the freedom and control that users have within gamified environments, enabling them to navigate their experiences autonomously. Volition reflects the internal drive to engage willingly, mirroring the intrinsic motivation inherent in users' active participation in gamified tasks. Furthermore, goal-orientation, whether towards performance or learning objectives, shares common ground with the goal-setting mechanisms prevalent in gamification. This motivates users to strive for achievement and progress within the system. These parallels underscore the potential for gamification to leverage intrinsic motivational factors, enhancing user engagement and satisfaction across various contexts.

2.1.2.7. Anxiety in Language Learning

Anxiety is a complex emotional state characterized by unease, worry, and a sense of dread, often accompanied by physical symptoms like chest tightness, rapid heartbeat, and shortness of breath (Stein & Hollander, 2002). Researchers (Gardner & Lambert, 1959; Horwitz et al., 1986) conceptualized language anxiety as a situation-specific anxiety. Ji et al. (2022) identify common forms of situation-specific anxiety, such as test anxiety, communication anxiety, and anxiety related to learning a specific subject, such as foreign language anxiety. Foreign Language Anxiety (FLA) is defined as the feeling of nervousness and unease,

especially in situations involving the use of a second language, including speaking, listening, and other learning activities. (Bailey et al., 1999; Horwitz et al., 2010; MacIntyre & Gardner, 1991). Foreign language anxiety has been extensively studied in relation to language skills such as reading, writing, speaking, and listening. Research has shown that anxiety can have both positive and negative effects on oral performance. Higher levels of anxiety can lead to more objective responses, while there is a negative correlation between oral proficiency and anxiety. Anxiety in language learning is often associated with threats to self-concept, particularly in oral aspects of language use (Horwitz et al., 2010). Research on reading anxiety indicates that anxiety levels tend to rise with perceived difficulty in reading tasks, particularly in unfamiliar cultural contexts (T. Chen & Chang, 2004). However, there is ongoing debate regarding the nature and measurement of foreign language reading anxiety, with some studies questioning its significance. Listening comprehension anxiety is a common issue among language learners. Factors such as task difficulty and lack of confidence can contribute to anxiety levels (Ji et al., 2022). Studies have shown a relationship between general foreign language anxiety and listening anxiety, with listening anxiety being independent yet related to overall anxiety levels (Ji et al., 2022). Writing anxiety, which is characterized by low self-confidence, is considered a distinct form of anxiety in language learning(T. Chen & Chang, 2004; Gkonou et al., 2017). It is associated with negative perceptions of writing tasks and is influenced by factors such as proficiency and previous experiences (Horwitz et al., 1986). Speaking anxiety, which is attributed to personality traits and gender, can affect oral performance in language learning contexts (Dewaele, 2010; Han & Keskin, 2016; Horwitz et al., 1986; Liu & Huang, 2011).

Similar to motivation theories, anxiety theories in language learning provide valuable insights into the psychological processes underlying learners' experiences. These theories explore the nature of anxiety and its impact on language learning. Horwitz's (1986) foreign language anxiety theory and Krashen’s (1982) affective filter hypothesis are the well-known theories that will help explain the role of anxiety within this study. Foreign language anxiety (FLA) is characterized by tension, apprehension, and nervousness that affect students' performance in foreign language classes (Horwitz et al., 2010). This anxiety can lead to avoidance behaviours such as not participating in class or struggling with speaking and listening tasks. Research indicates that foreign language anxiety can affect students' ability to communicate effectively, especially in spontaneous interactions, due to the fear and stress associated with language learning (Bailey et al., 1999; Han & Keskin, 2016; Ji et al., 2022; MacIntyre & Gardner, 1991). Anxiety in language learning is not limited to the classroom; it

also extends to testing situations where students may experience fear of failure and increased stress, affecting their performance in assessments and oral tasks (Adkins-Jablonsky et al., 2021). Furthermore, foreign language anxiety is a common issue in language learning, particularly in foreign language settings, where students are frequently evaluated by teachers and peers. This might impact students' confidence and communication skills while learning a language.

The affective filter hypothesis by Krashen (1982) examines how affective factors, such as motivation, self-confidence, and anxiety, affect the process of second language acquisition. It suggests that individuals differ in the strength of their affective filters, which can either help or hinder language acquisition. Better language acquisition outcomes are associated with high motivation and self-confidence, while low anxiety is beneficial to learning. The hypothesis proposes that individuals who possess positive attitudes towards language learning are more likely to actively seek and acquire language input, have a lower affective filter, and be more receptive to language input, resulting in a more profound language acquisition. Conversely, individuals with less favourable attitudes such as high anxiety may have a higher affective filter, which could prevent the acquisition or learning process even when comprehensible input is available. The hypothesis of the affective filter highlights the significance of establishing a low-anxiety environment in language learning settings to facilitate successful language acquisition by maintaining a low affective filter and promoting openness to language input (Al-Hoorie & MacIntyre, 2019; Krashen, 1982, 1985).

Language learning anxiety is a complex emotional phenomenon that has a significant impact on learners' experiences and performance (MacIntyre & Gardner, 1991). The concept of Foreign Language Anxiety (FLA) has been extensively studied (Horwitz et al., 1986) and can take various forms, such as test anxiety, communication anxiety, and anxiety specific to learning a particular language (Bailey et al., 1999). According to research, it has been suggested that Foreign Language Anxiety (FLA) could lead to avoidance behaviours, which may hinder the development of effective communication skills in both classroom interactions and testing situations (Bailey et al., 1999; Dewaele, 2010; Horwitz et al., 1986; MacIntyre & Gardner, 1991). Horwitz's Foreign Language Anxiety model has been identified as a useful framework for identifying and addressing FLA in learners while Krashen's Affective Filter Hypothesis (Krashen, 1985) highlights the significance of establishing a low-stress learning environment. Educators can accomplish this by promoting positive attitudes towards language learning and

employing anxiety-reducing strategies (Dewaele, 2010; Gkonou et al., 2017), thus optimizing learners' potential for successful language acquisition.

2.1.3. Mastery Learning Model

Mastery learning, as conceptualized by Benjamin S. Bloom in his seminal 1968 paper "Learning for Mastery," points out the necessity for students to attain a high level of mastery in their learning before advancing to new content (Bloom, 1968). Bloom suggests that effective instruction should cover the different learning paces and styles of students, requiring attention to five key variables: aptitude for learning, quality of instruction, ability to understand instruction, perseverance, and time allowed for learning (Bloom, 1968; M. C. Wang & Lindvall, 1970). Bloom's framework proposes dividing courses into smaller units, allowing for formative evaluation to provide detailed feedback and tailored supplementary resources. This approach is based on the idea that with appropriate instruction and time, most students can achieve mastery, and represents an individualized learning approach. By addressing learners' unique needs and using formative evaluation, teachers can identify areas of difficulty and provide targeted support. Mastery learning model supports personalized instruction and comprehensive support mechanisms to facilitate optimal learning experiences (Block & Burns, 1976; Bloom, 1968; Cronbach, 1972; M. C. Wang & Lindvall, 1970). An important component of mastery learning, formative assessment plays an important role in this study. Formative assessment is particularly significant as gamified student response systems (SRS) are used to administer formative tests. SRS platforms, such as Kahoot and Socrative, offer interactive and engaging ways to assess student understanding in real-time. In the following chapter, formative assessment will be described.

2.1.3.1. Formative Assessment

Formative assessment is a critical component of mastery learning, a teaching approach that requires students to demonstrate mastery of a concept before moving on to the next (Block & Burns, 1976; Bloom, 1968; Cronbach, 1972). Research indicates that well-designed formative assessment practices have a significant positive impact on student achievement, engagement, and motivation, leading to deeper learning outcomes and improved overall academic performance (Andrade & Cizek, 2010; Black & Wiliam, 2009). The mastery learning employs formative tests to assess student understanding after a set of instructional strategies. If students do not demonstrate mastery, they are provided with additional instruction or resources and allowed to retake the test. This process can be teacher-paced, student-paced, or a blend of both. The formative assessment involves four essential elements: identifying the learning gap,

feedback, student involvement, and learning progression (Andrade & Cizek, 2010; Pinchok & Brandt, 2009). Identifying the learning gap requires understanding the difference between students' current knowledge and the learning goals they need to achieve. This enables teachers to provide customized instructional support. Feedback, crucial for student progress, must be clear and descriptive, aiming to close instructional gaps. It plays a crucial role in guiding students towards improvement by allowing them to understand their mistakes and develop strategies for overcoming them. Active student involvement fosters collaboration and higher cognitive skills by encouraging students to engage in self-assessment practices, reflecting on their understanding and identifying areas for improvement. Learning progressions breaks down larger goals into smaller objectives, helping teachers in tracking students' current status and setting short-term learning objectives for success (Andrade & Cizek, 2010; Pinchok & Brandt, 2009). Formative assessment has been shown to have moderate to large positive effects on student performance (Black & Wiliam, 2009). Formative assessment is a critical component of mastery learning, providing teachers with the tools and strategies necessary to determine what students know, identify gaps in understanding, and plan future instruction to improve learning. By focusing on the learning process and providing tailored instructional support, formative assessment can contribute to academic gains and improved student learning attributes, such as improved confidence and attitudes toward learning.

Formative assessment strategies involve a wide range of techniques and tools, including classroom questioning, peer and self-assessment, observation, and the use of technology-enabled assessment, all aimed at providing timely and targeted feedback to students. One particularly popular formative assessment method is using student response systems or platforms recently (Beatty et al., 2006; Şahin, 2020). The use of SRSs enables instructors to gain insights into students' comprehension by observing the distribution of answers provided. This facilitates an understanding of their classmates' perspectives(Beatty et al., 2006). When instructors and students actively utilize the feedback to make future learning decisions, SRS use can be transformed into formative assessment, aimed at enhancing learning rather than simply evaluating it (Beatty et al., 2006; Şahin, 2020). SRSs are recognized for their positive attributes in providing feedback, further emphasizing their utility in facilitating formative assessment practices. The feedback loop offered by SRSs provides valuable insights and guidance for effective formative assessment strategies (Şahin, 2020).

2.1.3.2. Assessment of & for learning

Based on their intended use, instructional assessments are categorized as formative or summative (Berry, 2008; Black & Wiliam, 2009; Hume & Coll, 2009). *Assessment of learning* seeks to determine or record the degree of learning. Evaluating the degree of learning attained by students and tracking their development are both components of assessment of learning. Summative evaluations, which offer an overview of students' knowledge and abilities at the conclusion of a learning session, are commonly used to do this (Hume & Coll, 2009). It serves as a tool for evaluating, classifying, or certifying students' knowledge and abilities, which helps to guide choices about advancement, certification, and academic achievement. Standardized tests, final exams, or final assignments are frequently used in education assessment to determine how well students have understood the material covered in the course or the learning objectives (Hume & Coll, 2009). While learning assessment is important for assessing students' accomplishments and credentials, its emphasis on results may make it less able to promote continuous learning processes or offer timely feedback. Because of this, educators frequently combine formative assessment techniques with summative evaluations to guarantee a more thorough and flexible approach to student evaluation and assistance (Harlen, 2009; Hume & Coll, 2009; Lile & Bran, 2014; Nusche, 2008).

On the other hand, formative assessment, also known as *assessment for learning*, focuses on the design of teaching and learning processes. It involves continuous assessment and feedback systems to identify learning gaps and promote progress (Pinchok & Brandt, 2009). The aim is to detect learning gaps and promote growth through continuous evaluation and feedback methods (Andrade & Cizek, 2010; Pinchok & Brandt, 2009). Black and William (2009), emphasize that to improve teaching and learning activities, teachers and students must actively participate in the evaluation process. Constructivist concepts align with the move towards student-centered assessments, which emphasize the value of learner autonomy in the assessment process and include peer and self-assessments (Pryor & Crossouard, 2008). Assessment for learning emphasises the interactive and participatory nature of formative assessment. Assessment for learning changes the approach towards more student-centred and holistic assessment practices and enhances active engagement and continuous improvement in teaching and learning processes (Andrade & Cizek, 2010; Black & Wiliam, 2009; I. Clark, 2012; Elwood, 2006; Hume & Coll, 2009; Pinchok & Brandt, 2009).

2.1.4. Gamified Student Response Systems

Student response system is a tool used for collecting student responses by utilizing wireless mobile devices like clickers, smartphones or tablets (Aljaloud et al., 2015; Kaleta &

Joosten, 2007; Patry, 2009). These systems, as highlighted by (Aljaloud et al., 2015), enable the instant collection of student feedback, and gather the results in real-time. These digital assessment tools foster a cheerful and competitive environment, allowing students to respond promptly to questions while providing teachers with immediate collective data for individual or group evaluation (Şad & Ozer, 2019; Sezgin et al., 2018; Yılmaz, 2017). The use of student response systems enhances classroom assessment and evaluation by introducing various question types, such as true-false, multiple-choice, matching, sequencing, and closed tests, as emphasized by researchers (Başol et al., 2017; Şad & Ozer, 2019; Uçar & Kumtepe, 2017). The implementation of these tools in classrooms offers students the opportunity to promptly review their answers and identify mistakes, promoting critical moments for instructors to provide correction, feedback, and teaching (Aljaloud et al., 2015; Kaleta & Joosten, 2007; Patry, 2009). Student response systems, commonly employed in large classrooms, encourage active learning, cultivate a cheerful and competitive environment (Adkins-Jablonsky et al., 2021; Uçar & Kumtepe, 2017; Yılmaz, 2017), and enhance learning outcomes by developing high-level cognitive skills like problem-solving and critical thinking. A significant body of literature supports the positive impact of student response systems on learning (Adkins-Jablonsky et al., 2021; Dicheva et al., 2015; Gündüz, 2020; Gündüz & Akkoyunlu, 2020; Huang & Soman, 2013, 2013; Jacobs et al., 2013; Kiryakova et al., 2014; Özkan & Samur, 2017; Tan & Saucerman, 2017; Uçar & Kumtepe, 2017; Wang et al., 2017).

Due to their engaging and competitive nature, these platforms are often referred to as gamification tools or gamified student response systems (Uçar & Kumtepe, 2017; İ. Yıldırım & Demir, 2014). Nowadays, numerous applications, websites, and software can be classified as student response systems. Notably, popular examples of gamified student response systems that incorporate game elements are Socrative, Kahoot, FlipQuiz, Quizizz, and Plickers (Bicen & Kocakoyun, 2017; Şad & Ozer, 2019). These applications enable instructors to present pre-determined questions to students, who respond individually using their mobile devices in real-time. The platforms instantly display the collective answers, incorporating gamification elements such as bonus points, quick answer points, badges, leveling up, and progression, as provided by the platform.

The introduction of a digital student response system (SRS) may not automatically enhance student motivation and engagement compared to a paper-based quiz, as indicated by Wang et al. (2017). However, studies reveal that Kahoot can be less anxiety-inducing than more than 20 other common classroom activities (Adkins-Jablonsky et al., 2021). The combination

of an interactive whiteboard with an SRS is found to increase student achievement (Dix, 2013), and positive correlations between SRS and student achievement are consistent with other studies (Dix, 2013; Tan & Saucerman, 2017; Uçar & Kumtepe, 2017). Immediate feedback from SRS software aids educators in efficiently understanding students' educational needs and adapting instructional strategies accordingly (Jacobs et al., 2013; Şad & Ozer, 2019). Tan and Saucerman (2017) observe that gamified SRSs lead to significantly higher student motivation, enjoyment, and encouragement to collaborate compared to non-gamified versions. While the gamified approach shows notable improvement in motivation and engagement, traditional SRSs and paper-based forms exhibit only slight differences in student motivation and engagement, with higher variation observed in gender and gaming habits for paper forms (Wang et al., 2017). This suggests that there is a need to use and experiment with different types of student response systems, with different features, to see exactly which gamification elements and features are effective in motivating and achieving students. Various Student Response System (SRS) platforms exhibit distinct gamification elements, necessitating a comprehensive mapping of the diverse features and game components inherent in these SRS. Below the student response systems, which are employed in this study, are described.

2.1.4.1. Kahoot

Kahoot is a gamified student response system that combines academic usefulness with fun engagement. It uses game mechanics and a user-friendly interface to encourage interactive and dynamic classroom participation. Kahoot uses game elements such as points, leaderboards, and quizzes to create competition and a sense of achievement in learning. The platform has a vibrant aesthetic appeal that creates an immersive environment aligned with learners' cognitive and affective dimensions. Kahoot goes beyond only assessment by using storytelling as an educational tool to make content more relevant. Educators can use the system's game mechanics to create challenges, quizzes, and surveys that align with pedagogical objectives, seamlessly integrating gamification into various academic areas. Kahoot is more than just an assessment tool. It embodies a pedagogical ethos that not only measures understanding but also cultivates a gamified approach to learning. This approach combines the joy of learning with educational effectiveness (Cárdenas-Moncada et al., 2020; Kahoot!, 2023; 2019).

Creating tests on the Kahoot platform involves several straightforward steps aimed at making learning fun and engaging. Educators begin by logging into their Kahoot account and selecting the 'Create' button to start a new kahoot. They provide a title and description for the kahoot, and optionally, a cover image. Questions are then added, with options for multiple

choice, true/false, and short answer formats. Each question allows for the inclusion of media, such as images or videos, to enhance engagement. Educators specify the correct answers and can set time limits for each question. Once all questions are added and customized, the kahoot is saved and can be previewed to ensure accuracy. Finally, the kahoot is launched by selecting 'Play' and choosing between different modes, such as 'Classic' for individual play or 'Team' mode for group play. Kahoot provides real-time feedback and detailed reports on student performance, facilitating interactive and data-driven learning experiences.

2.1.4.2. Socrative

Socrative is a student response system that incorporates game elements into the learning process. The platform is designed to be academically challenging and to enhance interactive pedagogy. Socrative is a student response system that incorporates game elements into the learning process. It includes quizzes, assessments, and interactive activities to make classroom learning more engaging. The platform incorporates game design principles by using real-time feedback and leader board functionalities. This fosters a collaborative yet competitive atmosphere that encourages student participation. Socrative goes beyond conventional formative assessment by using storytelling techniques to contextualize educational content and enhance comprehension (Pryke, 2020). The system has a strong technological foundation, which allows educators to customize assessments that match various academic goals. Socrative is visually appealing and has an intuitive design, creating an immersive and engaging learning environment. Socrative is more than just a basic student response system. It can be a helpful tool for teachers, integrating gamification elements to enhance the learning experience. By combining academic rigor with interactive play, Socrative promotes the integration of scholarly inquiry and gamified engagement in modern education (Awedh et al., 2015; Dakka, 2015; Kaya & Balta, 2016; Socrative, 2023). Socrative's basic membership includes features such as on-the-fly questioning, a single public room for classes, a 50-student capacity per session, Space Race assessment, formative assessments, real-time results visualization, device accessibility, reporting, SOC code sharing and access to the Help Center (El Shaban, 2017).

Creating tests on the Socrative platform involves logging into the account and navigating to the 'Quizzes' section to add a new quiz. Educators name the quiz and add various question types, such as multiple choice, true/false, and short answer, customizing details like answer choices, correct answers, and feedback. Questions can be reordered to align with instructional goals. After saving and previewing the quiz for accuracy, it is launched in different modes, such as instant feedback, open navigation, or teacher-paced. Real-time monitoring and

detailed analytics provided by Socrative help educators assess student performance and make informed instructional decisions.

2.1.4.3. Comparison of the SRS Platforms

This research examines two of the commonly utilized SRS platforms, namely, Kahoot and Socrative. Each platform has unique features, modes, and functionalities that enhance classroom participation, assess learning outcomes, and foster a dynamic educational environment. The table below compares Kahoot and Socrative highlighting their unique features and suitability for different educational settings (El Shaban, 2017; Kahoot, 2023; Şad & Ozer, 2019; Socrative, 2023; Türk, 2019; Uçar & Kumtepe, 2017; Zuhriyah & Pratolo, 2020).

Table 1. *Comparison of gamified student response systems*

Features (*paid membership)	**Kahoot**	**Socrative**
Delivery Modes	Classic Mode (T paced) Team Mode Assign (A sync)	Instant Feedback Open Navigation (A sync) Teacher Paced
Question Types	Multiple Choice True/False Puzzle* Image Reveal* Poll* Scale* Drag & Drop* Short Answer* Word Cloud* Image Answers* Slider* Open ended* Drop pin* Brainstorm*	Multiple Choice True/False Short Answer
Leader boards	Yes	Yes
Timers	Countdown Time limit	-
Music and Sounds	Background Music	-

Accessibility	Desktop site Mobile site App	Desktop site Mobile site App
Theme	Custom Themes	No
Reports and Analytics	Session Reports Item Analysis Student Analysis	Session Reports
Synchronous Player Limit	10	30
Creating Private Quizzes	No	Yes
AI Assistance	Yes*	No
Import Sheet	Yes	Yes
Slides	Yes*	No
Quiz Library	Yes	No
Nickname Generator	Yes	No

The SRSs used in this research, Kahoot and Socrative include different game elements to enhance the quiz experience. The following table presents a detailed comparison of the game elements integrated into each SRS. The gamification elements included in this table covers points, badges, levels, leader boards, challenges, rewards, avatars, social interaction, storytelling, feedback, competition and customization (Kapp, 2012; Salen & Zimmerman, 2003; Zichermann & Cunningham, 2011).

***Table 2**. Game elements for each gamified SRS*

Game Elements	Kahoot	Socrative
Points	✓	✓
Badges	✓	-
Levels	✓	-
Leader boards	✓	✓
Challenges or Quests	✓	✓
Rewards or Prizes	-	-
Avatars	-	-
Social Interaction	✓	✓
Storytelling	-	-
Feedback	✓	✓
Competition	✓	✓
Customization	-	-

2.2. Relevant Literature

In this part, studies that are closely related to current research are examined and summarized. This study aims to show the effect of gamified student response systems on students' achievement, motivation and anxiety in English language teaching. A detailed database scanning has showed that there is plenty of research that reveals how student response systems are integrated in teaching and how it effects different factors such as achievement, motivation anxiety, collaboration, engagement or peer competition. Below are the summaries of such studies that are directly relevant to the topic of this dissertation thesis with same or similar goals but some differences in variables, settings, tools or research approaches. In selecting relevant literature, we prioritized recent and frequently cited studies on Student Response Systems (SRS). Studies involving earlier versions of SRS, such as clickers and remote controllers, were excluded. We specifically included research on gamified SRS that focused on achievement, motivation, and anxiety. The studies considered were conducted globally but were limited to those published in English and Turkish.

2.2.1. SRS Studies about Achievement

One study carried out by Turk (2019) aimed to see how Kahoot, a student response system, affects university students' English vocabulary learning achievement and attitudes toward studying English, as well as to get their feedback on Kahoot The study, which was conducted in a university included 61 students divided into two groups: a control group of 25, and an experimental group of 36 individuals. An achievement test, which was piloted with a similar sample of students, was used to determine all students' vocabulary learning levels as a pre-test. The test revealed that both groups were equally successful in learning the target vocabulary. Türk (2019) also used an attitude scale for English courses, which was also applied as a pre-test. In the experimental operation, Kahoot vocabulary quizzes were used with the experimental group for six weeks in addition to the standard course procedure, while the courses in the control group were conducted as usual using the course book. Following the application procedure, the students in both groups were given an achievement test and the same attitude scale were applied as a post-test. Following the experimental procedure, twelve students from the experimental group consented to participate in semi-structured interviews with open-ended questions to learn about their experiences with the process. The results of the study showed that the use of Kahoot in English vocabulary teaching contributed little to the achievement of the students, according to the findings of the data analysis. However, the findings of the interviews

suggested that the students had good attitudes toward Kahoot and supported its usage in English classes. They also reported that they experienced memory issues when learning English terms and that the app assisted them in remembering the words, which suggests that Kahoot helps with the retention. The study concludes that it is possible that Kahoot might be used to teach vocabulary items in the target language, and further research in this area could be conducted.

Another study (Rahmahani et al., 2020), examines the effect of gamified student response system (Kahoot) in the Indonesian schools. The main purpose of the study is to investigate how students feel about Kahoot and reveal the impact of it on cognitive aspects such as achievement. A total of 153 students were engaged in the study, with 127 students in the experiment group and 26 in the control group. In the experiment group, in which students learn chemistry the researchers used Kahoot for three months before surveying them for their opinions. They also compared the academic performance of a chemistry lesson students before and after the experimental procedure. More than 90% of students said Kahoot was simple, entertaining, and engaging, and 83.75 percent thought the lessons were more interesting with Kahoot. The findings reveal that while Kahoot had a positive influence on student views, it has no direct impact on the achievement.

Another experimental study (Y. Can, 2018) aims to compare achievement levels of two groups of 9th graders over the course of eight weeks' experiment in terms of the influence of student response systems. The study is designed as an experimental model and had one experimental group, where SRS was used and two control groups, first of which took a paper-based test and the second did not take the test at all. The researcher creates multiple choice questions in line with the 9th grade English teaching curriculum and applies the tests using "Socrative" software selected as SRS. In control group, the questions utilized in the SRS program were asked on paper. In the first group, lessons were done as usual, but students were not tested. Following the experiment, the variations in success and achievement emotions between these three groups were investigated. The Achievement Emotions Scale's class and test-related sub-dimensions were translated from English to Turkish during the study. Before and after the experiment, the experiment and control groups were given an English achievement test and the Achievement Emotions Scale. Mixed ANOVA test was used to assess the differences between these measures. In addition, qualitative techniques were used to obtain students' views on the usage of SRS. The findings of the study suggest that the SRS has a favourable impact on students' English academic achievement. The experimental group's achievement level was significantly greater than the control groups'. SRS has been shown to

have major beneficial impacts on pleasure and boredom in the classroom. However, although not statistically significant, the experimental group showed a higher degree of improvement in class-related despondency, pride, anger, anxiety, and humiliation when compared to the control groups. In terms of exam-related emotions, the SRS has been found to be beneficial for students in reducing test anxiety. There was a favourable rise in overall test emotions in the experimental group that the SRS was administered, yet it was not at a significant level, as there was in class related emotions. Students believe that classes using SRS are more productive, entertaining, and contribute to improved learning, according to the interviews, which are supported by the quantitative findings. The SRS also appears to contribute to the students' perceptions of their performance and hence to supplement their missing components, according to the results of the interviews. Concerning the disadvantages of utilizing the SRS, students mostly focus on the SRS's delay owing to technical issues such as the internet and infrastructure failures, as well as the time lost as a result of these issues.

Ayten (2022) compares the two groups' learning outcomes in her study to determine whether there is a substantial difference between the experimental group studying grammar on a gamified learning platform and the control group studying grammar using conventional techniques. The study's second goal is to investigate how the students in the experimental group feel about the gamified application that was utilized during the English session. 47 fourth graders from a private elementary school in Istanbul, Turkey, participated in this study. Six applications in all, lasting a total of three weeks, were made to the experimental group of students as part of this study. In this study, a mixed research design was adopted. The experimental group's pre-post test results as well as those of the control group participants were included in the data. Six experimental group members participated in a focus group interview at the end of the application that was used to gather qualitative data. The results of the quantitative data showed that the experimental group's EFL learners' grammar proficiency had increased as a result of using gamified student response systems. In other words, there was a noticeable difference in grammar proficiency between the experimental and control groups in favor of the experimental group. Additionally, the quantitative data were supported by the interview data, which demonstrated that the experimental group students enjoyed the implementation process and that it helped their learning.

The study conducted by Altwijri et al. (2022) investigates the impact of Student Response Systems (SRS) on faculty performance and student interaction in the context of King Saud University. With a substantial sample size involving 371 faculty members and 19,746

students over a period from Fall 2016 to Fall 2019, the research evaluates perceptions through faculty and student satisfaction surveys. The response rates, representing diverse disciplines and colleges within the university, revealed positive outcomes. Notably, the use of SRSs increased student interaction, focus, and participation in lectures, fostering a heightened desire to attend and prepare for classes. Faculty members reported improvements in teaching strategies and gained insights into student strengths and weaknesses, contributing to the overall enhancement of the educational process. The findings, consistently positive across seven semesters, underline the potential of SRSs as a valuable tool for improving faculty teaching practices, boosting student engagement, and facilitating sustainable learning development across diverse disciplines.

Karatekin (2017) has aimed to report the effective gamification in English Language vocabulary teaching. This experimental study was conducted with ninth grade students in a public school. Paper-based pre-tests, a paper-based and a Kahoot-assisted post-test and a paper-based questionnaire were used for the control group and an experimental group. The pre-tests and post-tests were used to measure the difference of students' knowledge about the topics, which were determined by the researcher, before and after the education. The study shows that gamification has no significant difference on students' recall of factual knowledge. However, it has positive effects on motivating students to tasks, students' engagement to the classroom activities and it adds fun to the learning process.

Tuttle (2021) conducted a study to expand current research and perform a quantitative analysis on the use of student response systems (SRS) in classrooms, focusing on participation and attendance and their impact on learners' performance. The study controlled for variables such as age, gender, state residency, and admission index. Student academic performance, as measured by final course grades, was compared between experimental and control groups. The findings revealed a significant difference in final grades between students who used the SRS and those who did not. Through a series of regression analyses employing six models, the study found statistically significant differences in final grades when controlling for SRS usage, admission index, gender, residency, and participation. Gender was the highest predictor in four regression models, favouring female students, while a 1 unit increase in a student's participation score boosted their final grades by 1.3 percent. The study underscores the positive impact of SRS on student performance and highlights the importance of participation in improving academic outcomes (Tuttle, 2021).

2.2.2. SRS Studies about Motivation

Chaiyo & Nokham, (2017) examined the effects of integrating Kahoot, Quizizz, and Google Forms into the classroom environment. The focus of the research is on students' perceptions of concentration, engagement, enjoyment, perceived learning, motivation, and satisfaction. The research explores how these learning technologies contribute to improved teacher-student interaction, motivation, and engagement. Teachers' laptops are connected to projectors, and students use their smartphones, tablets, or laptops. The findings indicate that students exhibited learning outcomes from the quizzes administered on Kahoot, Quizizz, and Google Forms. However, there were significant differences in concentration, engagement, enjoyment, motivation, and satisfaction. Kahoot and Quizizz demonstrated several advantages over Google Forms in classroom settings, highlighting the potential benefits of these interactive platforms for active learning and classroom response systems (Chaiyo & Nokham, 2017).

Licorish et. al., (2017) carried out a study at a research-intensive teaching university in New Zealand, where an information systems strategy and governance course used the game-based student response system, Kahoot. Researchers attempted to assess the efficacy of Kahoot in raising student involvement and improving the lecture experience through semi-structured interviews. They also looked at how students saw Kahoot's influence on classroom dynamics, student motivation, and the learning process. According to the findings, integrating Kahoot improves student learning quality considerably. It especially affects classroom dynamics, student involvement, motivation, and the overall learning experience. Furthermore, the application of gamified strategies seems to reduce distracting behaviours and activities in the classroom, enhancing instruction above and beyond conventional techniques like PowerPoint presentations and lectures (Licorish et al., 2017).

Another study (Incekar, 2023) employed an experimental design comprising a control group and an experimental group, aiming to gather both quantitative and qualitative data through various assessment methods, including achievement tests, motivation scales, and student opinion forms. Conducted with 10th-grade students from a Multi-Program High School inTurkey, the experimental group engaged in weekly word reviews using the Kahoot application following lessons. Meanwhile, the control group received traditional teaching methods, covering textbook content as usual. The research was conducted over a five-week period as planned. The results revealed a significant improvement in achievement scores, motivation levels, and student perceptions favoring the experimental group instructed with the web 2.0 tool Kahoot

Another study (Şahin, 2020) explores the perceived usefulness and behavioral intention of students towards different Classroom Response Systems in facilitating formative assessments for effective learning. The research was conducted over a period of four weeks with first-year students at a state university. It compared traditional paper-based tests with digital alternatives, including Kahoot, Quizizz, and Plickers. The findings revealed that statistically, students considered the applications of Kahoot, Quizizz, and Plickers to be more useful than traditional paper-based tests, which indicates that students are more motivated while using such gamified tools. There is a clear preference among students for technology-supported Classroom Response Systems, indicating a shift towards embracing digital tools for enhanced learning experiences.

A study by Barrio et al. (2016) examined how gamification affects how well Student Response Systems (SRSs) work in classroom settings. When compared to using SRSs alone, the study investigates if incorporating gaming strategies with SRSs can improve student motivation, focus, engagement, and learning outcomes. The study used an experimental methodology to evaluate the results of gamified SRS with non-gamified SRS using a novel technology called the Interactive Gamification Classroom (IGC). The study involved students from various academic levels and subjects, employing a randomized post-test-only control group design. Results indicated that students who participated in lectures using a gamified SRS reported more positive perceptions regarding motivation, attention, and learning performance than those who attended lectures with a non-gamified SRS. Furthermore, the study highlighted significant influences based on the type of academic discipline and gender. Telecommunication engineering students, familiar with technology, had a more positive perception of SRSs, and male students responded more positively to the use of SRSs compared to female students.

Palos-Sanchez et al. (2024) conducted a study to understand the adoption model of a game-focused student response system (SRS) and its impact on teacher methodologies and student engagement. Utilizing the theoretical framework of the hedonic-motivation system adoption model, the study focused on Kahoot, a tool that transforms the classroom into an interactive game show. The research involved a survey and questionnaire administered to 214 students, using a non-probabilistic convenience sampling method. This approach was combined with traditional paper tests and electronic tests on an e-learning platform. The results indicated that the hedonic-motivation system adoption model is appropriate for adopting a game-based SRS, with significant relationships found for all variables except Temporal Dissociation. The study's findings suggest that game-based SRS tools like Kahoot can significantly enhance the

acceptance and functionality of interactive methodologies in education, thus contributing valuable insights to the literature on educational technology and its role in modern teaching practices (Palos-Sanchez et al., 2024).

2.2.3. SRS Studies about Anxiety

In another research (Shaker et al., 2021) the impact of the game-based learning platform Kahoot in enhancing undergraduate students' statistical learning was investigated. Despite the typical difficulties students have understanding statistical ideas and overcoming fear, engagement problems, and low confidence, the results are encouraging. Students' attitudes of learning statistics greatly improved, according to pre- and post-surveys that included the Statistical Anxiety Measure (SAM). Furthermore, it was discovered that Kahoot improved student learning and engagement, but with a marginally smaller effect on anxiety than on confidence. The significance of help-seeking anxiety in academic accomplishment was highlighted by the discovery that it was a strong predictor of final exam performance. The findings demonstrate Kahoot's potential as a useful tool for fostering student confidence, engagement, and learning in statistics classes. This study adds to the expanding corpus of research on the application of SRS as a learning strategy to solve issues in statistics education.

Wood (2020) examines the potential of using the student response system Socrative to address learner anxiety, enhance motivation, and encourage participation in second language learning contexts. Recognizing the significance of affective factors such as anxiety and communication apprehension in language classrooms, the paper explores how motivation can mitigate learner anxiety. Drawing on theoretical frameworks of foreign language anxiety and motivational factors in language learning, the study presents qualitative evaluations of Socrative's implementation in third-level language classrooms. Initial findings indicate that Socrative promotes student engagement, interaction, and language production, leading to more effective learning outcomes and improved knowledge retention. Moreover, the system demonstrates promise in fostering a supportive classroom environment with reduced anxiety levels among learners. The research (Wood, 2020) reports that the implementation of Socrative in language teaching has led to notable improvements in student engagement and interaction, as observed through qualitative evaluations. Students displayed increased enthusiasm for using the tool, engaging in lively interactions both verbally and via the PRS interface, fostering a collaborative learning environment. This student-led interaction promoted a supportive group identity, contributing to a reduction in classroom anxiety and the encouragement of gamification. Feedback from students indicated enjoyment of the classes, improved self-

confidence, and motivation to continue language studies. The integration of Socrative into teaching practices was complemented by strategies to address foreign language anxiety (FLA), such as using the Beliefs About Language Learning Inventory (BALLI) to initiate discussions and workshops focused on FLA mitigation. Students expressed appreciation for the opportunity to share concerns and engage actively in lessons without self-exposure, noting the motivational impact of interactive learning activities facilitated by Socrative. Additionally, the instructor review function provided valuable insights into student understanding and knowledge retention, enabling targeted instruction and enhancing the overall effectiveness of language acquisition processes. Overall, Socrative's implementation has positively influenced student engagement, confidence, and language learning outcomes while contributing to a supportive and effective classroom environment (Wood, 2020).

Adkins-Jablonsky et al. (2021) examined the impact of gamified Student Response Systems (SRS) like Kahoot on student anxiety in introductory biology courses at two different universities. The research found that non-graded Kahoot play caused less anxiety compared to other pedagogical practices. Additionally, lower-performing students showed greater engagement and reduced anxiety levels after playing Kahoot. These findings suggest that Kahoot may be an effective active-learning strategy that maintains the benefits of engagement without increasing anxiety, particularly for lower-performing students. The researchers propose that Kahoot could be an attractive classroom practice for biology educators, as it helps to raise interest and capabilities in science among lower-performing student groups.

The impact of gamification on Student Response Systems (SRSs) in educational contexts was investigated in the study (Turan & Meral, 2018). Through an experimental methodology, students from a range of academic backgrounds and subjects participated in the comparison of gamified and non-gamified SRSs. The experimental design employed a randomized post-test-only control group method. The key findings revealed that gamified SRSs positively influenced student motivation, attention, and learning performance. The study concluded that integrating gamification with SRSs holds promise for enhancing educational outcomes. Additionally, the influence of factors such as academic discipline and gender was significant, with telecommunication engineering students, who are more familiar with technology, and male students having a more positive perception of SRS usage compared to their counterparts. Overall, the study highlights the potential of gamification in improving learning outcomes when integrated with Student Response Systems.

Another research highlights the significant role of Kahoot in addressing common challenges associated with traditional learning methods, such as student motivation, anxiety, concentration, and engagement. This research examines Kahoot's influence on students' experiences. Utilizing a qualitative method with semi-structured interviews, the study explored the impact of Kahoot on learning anxiety, motivation, engagement, learning experience, and classroom dynamics. The findings indicated that Kahoot positively impacts classroom dynamics, fostering student initiation, engagement, and interaction. Implementing Kahoot also plays a crucial role in reducing students' anxiety during lectures and exams. Furthermore, the study found that Kahoot decreases learning anxiety, enhances the overall learning experience, improves the quality of student learning in the classroom, and encourages engagement. It also offers teachers opportunities to adapt their tutoring based on student knowledge. Students reported that Kahoot made learning enjoyable, reduced distractions, and improved focus, thus being well-received as a valuable educational tool (Alsswey et al., 2024).

A study by Öden et. al., (2021) explores the effect of the gamified response system, Kahoot, on students' attitudes towards an English as a Foreign Language (EFL) course, their motivation, and their exam anxiety. The research employed an embedded mixed design, integrating both quantitative and qualitative methods, involving 88 ninth grade vocational high school students. Pre-tests measuring attitude, motivation, and exam anxiety were administered to both the experimental and control groups before the experiment. Post-tests were conducted at the end of the experiment process, along with an examination of the views of randomly selected students from the experimental group on the Kahoot application. The results revealed that Kahoot significantly increased students' attitudes towards the EFL course. Although Kahoot also increased EFL learning motivation and decreased exam anxiety, these changes were not statistically significant. Additionally, students reported that they found the Kahoot application to be enjoyable and funny. This study underscores the potential of Kahoot as a valuable tool in vocational education, contributing to more positive attitudes, increased motivation, and reduced anxiety in EFL learning (Öden et al., 2021).

The increasing integration of interactive technology in education has led to a considerable increase in research on gamified student response systems (SRS) such as Kahoot or Socrative. Examining how gamified SRSs impact many aspects of student learning, including as motivation, engagement, anxiety, and academic achievement, is a recurring theme in these studies. Numerous research demonstrates how gamified SRS increases student motivation and engagement. For example, Chaiyo & Nokham (2017) and Licorish et al. (2017) found that

platforms such as Kahoot and Quizizz significantly improved students' concentration, engagement, enjoyment, motivation, and satisfaction compared to traditional methods. Similarly, Incekar (2023), reported significant improvements in achievement scores and motivation levels when Kahoot was used. These findings are rediscovered by Öden et al. (2021) who found that Kahoot significantly increased students' attitudes towards English as a foreign language (EFL) courses and their motivation, although the reduction in exam anxiety was not statistically significant. Research has also explored the cognitive benefits of gamified SRS. Turk (2019) found that while Kahoot contributed little to vocabulary achievement, it had a positive impact on students' attitudes and helped with retention. Other studies reported that gamified SRS significantly improved grammar proficiency and academic achievement, respectively (Ayten, 2022; Y. Can, 2018). These studies suggest that gamified SRS can be an effective tool for improving language learning and other academic subjects by making learning more engaging and enjoyable. Moreover, the impact of gamified SRS on classroom dynamics and anxiety has been extensively studied. Shaker et al. (2021) found that Kahoot improved student learning and engagement in statistics classes, with a marginally smaller effect on anxiety. Research on gamified student response systems (SRS) shows that these tools can create a more positive and less stressful learning environment, improving student outcomes. For instance, the use of Socrative and non-graded Kahoot game has been found to reduce classroom anxiety and increase engagement, especially for lower-performing students. Gamified SRS also promotes active participation and reduces disruptive behaviour, leading to improved interaction, focus, and participation in lectures, as well as better final grades. However, while these tools positively influence student views and motivation, their direct impact on academic achievement can vary depending on implementation and context. Overall, gamified SRS can enhance engagement and the learning process, though their effect on academic performance may differ (Adkins-Jablonsky et al., 2021; Altwijri et al., 2022; Karatekin, 2017; Rahmahani et al., 2020; Tuttle, 2021; Wood, 2020).

In conclusion, research on gamified SRS shows that these tools are generally appreciated by students and have the potential to improve a number of components of the learning process, such as engagement, motivation, and classroom dynamics. But the effect on academic performance is not always consistent, which emphasizes the need for more study to determine the ideal circumstances for gamified SRS to work.

PART III

METHOD

In this section, the research design, study group, data collection instruments, data collection process, data analysis and interpretation are explained.

3.1. Design of the Research

In this study, a mixed method research design was used. Mixed method research is a method that includes both quantitative and qualitative data and provides a better understanding of the research problem than a method used alone (Clark & Creswell, 2008). In this study, an embedded research design, which is one of the mixed research methods, was used. Embedded designs are one of the mixed method approaches in which qualitative and quantitative data are analyzed together within the framework of traditional qualitative and quantitative research designs. In an embedded mixed design, researchers can add a qualitative phase to a quantitative phase, such as an experimental study, or include a quantitative phase within a qualitative phase, such as a case study, to better understand the problem (Clark & Creswell, 2008; Yıldırım & Simsek, 1999). Based on this theoretical information a mixed method research model is adopted for current study.

In the quantitative part of this study, a quasi-experimental design with pretest-posttest control group was used. Experimental studies examine the effects of the differences created by the researcher on the dependent variable (Büyüköztürk et al., 2008). In quasi-experimental designs, experimental and control groups are selected from ready-made groups by looking at certain variables (Büyüköztürk et al., 2008). The study groups included in this study was selected according to the course level they were placed at İnönü University English Preparatory Program. The pretest-posttest data in this part of the study were obtained through the English Achievement Test, the Attitude and Motivation Test Battery (AMTB), which was developed by Gardner (2004) and Foreign Language Classroom Anxiety Scale by Horwitz (1986). The experimental research design is shown in Figure 1.

Figure 1. *The experimental research design*

Groups	Pre-test	Gamified SRS Tests	Post-test	Interviews
E1	Achievement Test	Kahoot	Achievement Test	Focus Group Interview and Questionnaire
E2	Motivation Scale	Socrative	Motivation Scale	
C1	Anxiety Scale	Paper Based	Anxiety Scale	

The qualitative data of the study were obtained through focus group interviews and individual questionnaires. First, researcher organized a focus group session to generate ideas and conducted after the experiment. In focus group interviews, unlike individual interviews, the interaction of individuals with each other affects the answers given. Sharing responses in a group context can promote a dynamic interaction where people react to and build upon each other's ideas (Yıldırım & Simsek, 1999). This cooperative method fosters a deeper investigation of the subject and improves the depth of the interview data. Participants in this cooperative discussion were able to share their views, provide a variety of viewpoints, and produce a wealth of information. Students were then asked to complete a questionnaire individually to express their opinions about the formative testing methods used in the classroom. This allowed students to voice any negative opinions they may have been reluctant to express during the focus group interviews.

3.2. Context of the Study

3.2.1. Setting

This study was conducted with a study group consisting of students studying in the English Preparatory Program of the School of Foreign Languages at İnönü University. The aim of the English Preparatory Program is to teach students the basic rules of English, to improve their English vocabulary, to enable them to understand what they read and hear in English, and to enable them to express themselves in spoken and written settings. Students enrolled in the program as optional, or compulsory are subjected to the Foreign Language Placement and Proficiency exam conducted by the Assessment and Evaluation Unit of the School of Foreign Languages. The Foreign Language Placement and Proficiency exam consists of two phases: a written exam that measures vocabulary, grammar and reading comprehension skills and an oral exam that measures listening and speaking skills in a foreign language. After students are placed in classes appropriate to their level, they receive English language education focused on 4 basic language skills for 1 academic year. Students take General English, Listening-Speaking and Reading-Writing courses taught by different instructors during the program and the total weekly

class hours are 24 hours. Students studying in the Compulsory and Optional Preparatory Program are required to attend at least 80% of the classes. Students who fail to meet the attendance requirement cannot take the Preparatory General Examination held at the end of the academic year and are considered unsuccessful (Compulsory and Optional Foreign Language Preparatory Program Regulations, 2016).

The aim of the English Preparatory Program is to reach the level of proficiency expressed in the Turkish Higher Education Qualifications Framework (TQF). According to the TQF, at the end of the preparatory education, students should be able to follow the information in their field and communicate with their colleagues by using a foreign language at least at the European Language Portfolio B1 Level. The European Language Portfolio creates a common framework for foreign language education in all European countries and defines which skills are needed to communicate effectively in a foreign language (Ada et al., 2010). The European Language Portfolio consists of A1, A2, B1, B2, C1, C2 levels (Ada et al., 2010; Council of Europe, 2024). In the English Preparatory Education offered at İnönü University, English is taught at A1, A2 and B1 levels (Compulsory and Optional Foreign Language Preparatory Program Regulations, 2016). The Council of Europe (Council of Europe, 2024) defined language proficiency levels, outlining the abilities of foreign language learners at different stages. At the A1 level, learners can understand and respond to simple sentences, engage in basic conversations about personal topics, and produce short essays. Upon progressing to the A2 level, learners demonstrate an understanding of simple texts, answer related questions accurately, and navigate activities such as shopping and obtaining travel information. At the B1 level, learners can communicate effectively in a foreign language within the country of use. They can engage in conversations, provide detailed descriptions, recount past experiences, outline future projects, and describe their surroundings, including animals and objects (Ada et al., 2010; Compulsory and Optional Foreign Language Preparatory Program Regulations, 2016; Council of Europe, 2024).

3.2.2. Participants

The study group of the research consists of students studying in the English Preparatory Program at İnönü University School of Foreign Languages in the 2023-2024 academic year. Two experimental and one control group was selected from the equivalent three groups consisting of students who were placed in the same level classes according to the placement and proficiency exam results at the beginning of the academic year. The following criteria were taken into consideration in determining these groups as study groups in the research:

- The groups are equivalent in level according to the placement test,
- The researcher who conducted the research and designed the activities is responsible for reading and writing activities of all groups.

Using convenience sampling method, the groups were determined to be equivalent in level based on their performance on a placement test, which comprised 80 questions aligned with the CEFR language framework learning outcomes. Students who scored between 55 and 70 on this test were classified as A2 level. As all students in the study fell within this score range, they were placed into A2 level classes, ensuring that each class consisted of students with similar language proficiency. This equivalence in level provides a consistent baseline for comparing the effects of the interventions across the different groups. The students come from different departments, including molecular biology and genetics, medicine, engineering, and international relations and politics, and they were scattered across the different groups. In line with the above-mentioned criteria, 3 groups of students with similar language level and taught by the researcher were randomly selected as the experimental and control groups. Information about the study group of the research is given in Table 3 below.

Table 3. *Study groups of the research*

Groups	**N of Students**	**Tests**
Experiment Group 1	19	Kahoot
Experiment Group 2	17	Socrative
Control Group	17	Paper based
Total	53	

3.3. Data Collection Instruments

3.3.1. Achievement Test

In this study, a 30-item achievement test is used to measure students' English achievement before and after the experimental implementations. An achievement test is a measurement tool that aims to determine the extent to which students acquire certain knowledge or skills within a certain period of education (Coombe, 2018). The scope of the achievement test developed by the researcher who conducted the study consisted of the relevant units (specified in Figure 1) of the course book (Oxford University Press, Wide Angle 3) included in this study. Since the student response systems used in this study can only have multiple choice questions, this achievement test is created to measure skills that can be assessed through multiple choice questions only. Thus, learning outcomes concerning vocabulary, grammar, writing strategies and reading comprehension can be measured through this achievement test.

As student response systems and other multiple-choice tests cannot measure certain set of skills such as speaking, writing skills, creative writing etc., which requires open ended or audio recording question types, those skills are left out from the scope of this achievement test. The researcher, who examined the course book learning outcomes, first developed a multiple-choice, 4-option, 45-question test. To check the comprehensibility and linguistic appropriateness of the test items, the evaluation of subject area experts was necessary. An achievement test evaluation form was created and sent to 5 English Language instructors to ensure the content validity of the items. Achievement test content validity form is given in Appendix 1. Following the data collection from experts, Lawshe technique was used to analyse the data. Lawshe is an expert evaluation technique that was used to evaluate items rated as appropriate, partially appropriate, and not appropriate by experts. To apply Lawshe's technique, a minimum of 5 and a maximum of 40 expert opinions are required (Lawshe, 1975). Content validity ratios (CVR) are then calculated by combining the experts' views on the items. The results of the Lawshe test are presented in Table 4 below.

Table 4. *Content validity ratios (CVR) for achievement test*

Item No	N_E	CVR	CVI
Item 1	5	1	
Item 2	5	1	
Item 3	5	1	
Item 4	5	1	
Item 5	5	1	
Item 6	4	0.6	
Item 7	3	0.2	
Item 8	5	1	
Item 9	4	0.6	
Item 10	4	0.6	0,849
Item 11	4	0.6	
Item 12	5	1	
Item 13	5	1	
Item 14	5	1	
Item 15	5	1	
Item 16	5	1	
Item 17	5	1	
Item 18	3	0.2	
Item 19	5	1	

Item 20	5	1
Item 21	4	0.6
Item 22	4	0.6
Item 23	5	1
Item 24	4	0.6
Item 25	5	1
Item 26	5	1
Item 27	5	1
Item 28	5	1
Item 29	4	0.6
Item 30	5	1
Item 31	5	1
Item 32	4	0.6
Item 33	5	1
Item 34	5	1
Item 35	5	1
Item 36	5	1
Item 37	5	1
Item 38	5	1
Item 39	5	1
Item 40	4	0.6
Item 41	4	0,6
Item 42	5	1
Item 43	4	0,6
Item 44	4	0,6
Item 45	5	1

As seen in the table, the content validity index (CVI) of the items was calculated as 0.849. CVR and CVI values obtained from the evaluation form indicate that the content validity of the achievement test items is statistically significant. As content validity of the test was ensured, a pilot study was conducted to ensure the validity and reliability of the achievement test. Piloting is the process of evaluating whether a test fulfils its intended purpose, including assessing its level of difficulty. It involves identifying the items that function well and those that do not, as well as determining the appropriate test duration (Yıldırım, 1999). In this study, a pilot implementation of the English achievement test was conducted with 214 students enrolled in English Programs of different universities across the country. These students are also EFL students. Multiple choice item and test analyses were conducted on the data from the

selected achievement test. The difficulty and discrimination levels of each item were calculated. According to Büyüköztürk et al. (2008), the item difficulty value, which indicates the rate of correct answers for the items, is used to determine the final version of the test. It is important to note that the item difficulty value should be around .50. The data collected was analysed in accordance with the provided information. Items with an item difficulty index lower than .30 and an index higher than .80 were removed as they were deemed too easy or too difficult. Items with discrimination index values above 0.30 are generally considered sufficient in distinguishing between high and low performers and the items with a value of 0.20-0.29 can be used after being revised (Hasancebi et al., 2020, Lane et al., 2016). Based on these statistics, items with a discrimination index lower than 0.20 were also removed and the items with a discrimination index between 0.20-0.29 were revised and improved before used. The remaining items, whose difficulty and discrimination values are listed in Table 5, were used to create a final 30-item multiple-choice achievement test.

Table 5. *Item Difficulty and Discrimination Index*

Item	Difficulty Value	Item Difficulty	Discrimination Index	Item Discrimination
1*	0,862	Easy	0,276	Average
2	0,767	Average	0,328	Average
3	0,724	Average	0,448	Discriminating
4	0,741	Average	0,345	Average
5	0,603	Average	0,517	Discriminating
6*	0,948	Easy	0,103	Average
7	0,552	Average	0,241 (revised)	Average
8*	0,491	Average	0,155	Average
9	0,724	Average	0,414	Discriminating
10	0,655	Average	0,241 (revised)	Average
11	0,483	Average	0,483	Discriminating
12	0,647	Average	0,362	Average
13	0,491	Average	0,397	Average
14	0,767	Average	0,362	Average
15*	0,853	Easy	0,121	Average
16	0,388	Average	0,224 (revised)	Average
17	0,612	Average	0,534	Discriminating
18	0,517	Average	0,517	Discriminating
19	0,500	Average	0,379	Average
20*	0,845	Easy	0,241	Average

21	0,716	Average	0,569	Discriminating
22	0,793	Average	0,310	Average
23*	0,897	Easy	0,207	Average
24*	0,888	Easy	0,155	Average
25	0,491	Average	0,603	Discriminating
26*	0,940	Easy	0,121	Average
27	0,466	Average	0,517	Discriminating
28	0,716	Average	0,328	Average
29*	0,948	Easy	0,103	Average
30	0,595	Average	0,672	Discriminating
31*	0,853	Easy	0,259	Average
32*	0,905	Easy	0,190	Average
33	0,681	Average	0,431	Discriminating
34	0,707	Average	0,448	Discriminating
35	0,767	Average	0,224 (revised)	Average
36*	0,009	Hard	-0,017	Not Discriminating
37*	0,034	Hard	-0,069	Not Discriminating
38	0,509	Average	0,534	Discriminating
39*	0,043	Hard	-0,086	Not Discriminating
40	0,784	Average	0,397	Average
41	0,698	Average	0,362	Average
42*	0,414	Average	0,103	Average
43	0,448	Average	0,276 (revised)	Average
44	0,707	Average	0,517	Discriminating
45	0,466	Average	0,483	Discriminating

*Items excluded from the test at the end of item analysis.

After the specified items were removed, the remaining items were analysed. For 30 items, the average difficulty level was 0.621, the average discrimination level was 0.428, KR-20 (Kuder-Richardson) internal consistency coefficient was found to be .804. These values indicate that the test has a high level of validity and reliability (Tezci, 2016). The specifications table for English achievement test is given in Appendix 2.

3.3.2. The Motivation and Attitude Scale

The Motivation and Attitude Scale, adapted from Gardner's (2004) Attitude/Motivation test battery, is widely recognized for assessing students' motivation levels and attitudes toward language learning. Gardner's original battery, validated through numerous studies, is considered

highly reliable (Doğan, 2009; Dörnyei, 2003; Karakiş, 2020). The scale consists of 104 items and 11 dimensions, including motivation, attitudes and interest towards foreign languages. Specifically, the motivation measuring section comprises 34 Likert-type items focusing on motivation intensity, desire to learn English, attitude toward learning English, and instrumental orientation factors. These dimensions are crucial for understanding individuals' intrinsic motivation and attitudes towards English classes, which significantly impact their language learning success (Doğan, 2009; Gardner & Gliksman, 1982; Gardner & Smyihe, 1981).

The scale demonstrates a high reliability rate, with a Cronbach's alpha coefficient value of 0.70 according to Gardner's original analysis and 0.91 based on Doğan's (2009) Turkish adaptation. Each of the scale's sub-dimensions was subjected to an Alpha reliability test, yielding the following reliability coefficients:

- *Motivational Intensity: 0,70 (This factor measures the effort and persistence a student is willing to put into learning English.)*
- *Desire to Learn English: 0,79 (This factor represents the level of enthusiasm and aspiration a student has for learning English.)*
- *Attitudes towards Learning English: 0,87 (This factor assesses a student's feelings and predispositions towards learning English.)*
- *Instrumental Orientation: 0,74 (This factor evaluates the practical reasons and goals a student has for learning English, such as career advancement or academic requirements.) (Doğan, 2009; Gardner, 2004)*

The scale's dimensions are measured through specific items, with some items being reverse-coded to account for varying perspectives. For example, motivational intensity is assessed through items such as desire to learn and attitudes toward learning English, while instrumental orientation evaluates the perception of the foreign language as a tool for achieving desired outcomes. Overall, the Motivation and Attitude Scale offers a comprehensive assessment of students' motivation and attitudes, providing valuable insights for language learning research and practice (Doğan, 2009; Dörnyei, 2003; Gardner & Gliksman, 1982; Gardner & Smyihe, 1981). The following are the scale's dimensions and the items on each sub-dimension.

- *Motivational intensity: 7, 19, 21, 23, 28, 8, 14, 24, 29, 31*
- *Desire to Learn English: 5, 6, 11, 17, 18, 13, 15, 22, 25, 33*
- *Attitude Towards Learning English: 2, 10, 27, 30, 32, 3, 4, 12, 20, 34*
- *Instrumental Orientation: 1, 9, 16, 26 (Doğan, 2009; Gardner, 2004)*

Although Gardner first developed this scale to measure the motivation levels and attitudes of native speakers of English and learners of French in Canada, the majority of the questions in the scale are used to measure the same variables towards learning any foreign

language. Later, some modifications were made to the items in the scale to examine English language learning of French-speaking students in Canada (Clément et al., 1977; Gardner & Lambert, 1959). Furthermore, the same scale was used to measure the motivation of English learners at different institutions in Philippines, Finland, Central America and the United States (Gardner & Lambert, 1959; Muchnick & Wolfe, 1982). Dörnyei (2003, p. 35) suggested that the Motivation and Attitude Scale is a standardized test with well-supported psychometric properties and is frequently used in the literature, as well as providing comprehensive findings on motivational factors that have been found to significantly affect achievement in previous studies (Dörnyei, 2003). In addition, Gardner and Gliksman (1982), in response to some researchers' concern on the validity of this scale, provided detailed explanations about its predictive validity, content validity and construct validity. They stated that in most of the studies in which AMTB was used, it was concluded that there was a strong relationship between motivation and attitude measures and achievement, which supported the predictive validity of the scale. Regarding content validity, they also stated that there are studies conducted during the scale development process that provide important evidence that the scale shows a high level of internal consistency (Clément et al., 1977; Gardner & Gliksman, 1982; Gardner & Smyihe, 1981). Finally, with regard to the construct validity of the scale, it was stated that the results confirmed Gardner's thesis that motivation affects success and attitude affects motivation in foreign language learning (Al-Hoorie & MacIntyre, 2019; Clément et al., 1977; Gardner & Gliksman, 1982). Descriptive statistics regarding the post test data obtained from The Motivation Scale is given in table 6 below.

Table 6. *Descriptive Statistics for Motivation and Attitude Scale*

	Groups	Motivation
N	d1_kahoot	19
	d2_socrative	17
	k1_paper	17
Mean	d1_kahoot	136
	d2_socrative	126
	k1_paper	143
Sd	d1_kahoot	18.2
	d2_socrative	20.6
	k1_paper	20.4
Minimum	d1_kahoot	105
	d2_socrative	84.0
	k1_paper	102
Maximum	d1_kahoot	170
	d2_socrative	162
	k1_paper	169

Based on the given information, it can be seen that the main reason for choosing the scale used in the current study is that the development process of the scale started in 1960 and it was used in many studies over a period of more than twenty years and finalized in 1985. The scale has been widely used in the literature since its completion, in other words, for more than thirty years, due to the fact that it has proven to have acceptable levels of validity and reliability. Motivation and Attitude Scale is given in Appendix 3.

3.3.3. Foreign Language Classroom Anxiety Scale

The Foreign Language Classroom Anxiety Scale (FLCAS) is a significant tool in language education research, particularly in understanding the psychological dimensions of language learning. It was developed by Horwitz, Horwitz, and Cope (Horwitz et al., 1986). The scale provides researchers and educators with a reliable tool for exploring the complex relationship between anxiety and language learning. It has been extensively used in academic research to evaluate anxiety levels among language learners. FLCAS consists of 33 items divided into following three sub-dimensions;

> *Speaking Anxiety in Language Class: 1, 2, 3, 4, 7, 8, 9, 15, 16, 18, 22, 23, 24, 26, 27, 28, 29, 31, 33*
> *Interest Towards Language Class: 6, 11, 17*
> *Anxiety of Talking with Native Speakers: 14, 19, 32(Gürsu, 2011, p. 52)*

The FLCAS has shown high reliability and validity in Horwitz et al.'s (1986) first study with an alpha coefficient of .93. Its Cronbach's alpha coefficients consistently exceed .90 in various studies, indicating high internal consistency. Additionally, its test-retest reliability coefficients, typically around .83, highlight its stability over time. In various studies it has been observed that FLCAS is reliable (Aida, 1994; Gürsu, 2011; Horwitz et al., 1986). The versatility and effectiveness of FLCAS and its implications for language learning and classroom dynamics are highlighted by its widespread usage across diverse cultural and linguistic contexts (Aida, 1994; Aydin & Zengin, 2008; Dörnyei, 2003; Gürsu, 2011; Horwitz et al., 1986).

The Foreign Language Classroom Anxiety Scale (FLCAS) Turkish version was shown to be valid and reliable for assessing students' anxiety when learning English as a second language by Gürsu (2011). Test-retest correlation, correlation with general anxiety measures, and exploratory and confirmatory factor analyses were used to verify the validity and reliability. With factor loadings ranging from.34 to.95 and a test-retest correlation value of.85, the FLCAS revealed a substantial factor structure. Convergent validity was indicated by significant correlations (r=.35, p=.011) with general anxiety measures. The dependability coefficient for

internal consistency was.82. All sub-dimensions have factor loadings that fall between.34 and.95, which is an acceptable range. These dimensions cover several aspects of anxiety related to language learning. In Gürsu's (Gürsu, 2011) study, it was demonstrated that the outcomes validate and substantiate the reliability of the Foreign Language Classroom Anxiety Scale in assessing Turkish students' anxiety related to learning English as a foreign language. (Gürsu, 2011). Foreign Language Classroom Anxiety Scale is given in Appendix 4. A combined version of both scales in Turkish language is given in Appendix 5. Descriptive statistics regarding the post test data obtained from The Foreign Language Classroom Anxiety Scale is given in table 7 below.

Table 7. *Descriptive statistics of foreign language classroom anxiety scale*

	Groups	**Anxiety**
N	d1_kahoot	19
	d2_socrative	17
	k1_paper	17
Mean	d1_kahoot	88.3
	d2_socrative	106
	k1_paper	79.0
Sd	d1_kahoot	16.6
	d2_socrative	27.0
	k1_paper	12.9
Minimum	d1_kahoot	47.0
	d2_socrative	55.0
	k1_paper	43.0
Maximum	d1_kahoot	112
	d2_socrative	149
	k1_paper	99.0

3.3.4. Focus Group Interview Form

The qualitative data in this study were obtained through questionnaires following focus group interviews conducted after the experiment. This method was preferred because it allows participants to interact with each other. Yıldırım and Şimşek (1999) suggest that the interactive nature of interviews, in which one individual's response can influence others' responses, enhances the richness of data collected during the interview process. As a result, a “focus group interview form” was used with students in each of the experimental groups. The aim of the interviews was to gain a better understanding of the quantitative data results. When creating the questions for the focus group interview, Yıldırım and Şimşek (1999) recommend employing everyday language in a conversational manner. This involves utilizing familiar words and keeping sentences simple, short, and easily understandable. Additionally, questions should be

open-ended and focused on a single target to encourage participants' engagement and provide ample opportunity for diverse responses (Yıldırım & Simsek, 1999). To facilitate a comprehensive understanding of quantitative data analysis results, the researcher prepared 10 open-ended questions to gather students' views on the SRS tool employed for their group. Refer to Appendix 6 for the focus group interview questions.

In order to complement and validate the data collected from the focus group discussions, the same questions were asked to students in an anonymous format on google forms. These questions were asked in response to the fact that some students might be reluctant to express their viewpoints openly during focus group interviews, particularly if they had negative views. The questions asked during the focus group sessions, ensuring consistency between the two data collection methods. Thus, the questionnaire also consisted of 10 main questions for each experiment group that has taken formative tests on Kahoot, Socrative or Paper-based. The questionnaire was designed to allow participants the option of anonymous feedback, with the intention of encouraging free expression and eliminating any potential reluctant responses. This approach not only broadened the range of participant engagement but also enabled a more comprehensive understanding of student opinions on the way they were exposed to the formative tests (Yıldırım & Simsek, 1999). Refer to Appendix 6 for questionnaire items.

3.4. Data Collection Process

To guarantee accuracy and ethical compliance, a strict process was followed during the data collection process. All data collection instruments, including motivation and anxiety scales and achievement tests, were submitted to İnönü University's Ethical Board along with detailed description of research and its method. All permissions were granted prior to the data collection process. As part of the data collection process, permission was sought and obtained from Kahoot and Socrative to use their platforms for the research. Detailed correspondence and agreements with these platforms, along with Ethical Board Report are provided in the appendix 7. Participants were kept informed about the nature and goal of the study during the data collection procedure, and their voluntary participation was assured with a participant consent form given in Appendix 8. Data collection process was carefully conducted ensuring the confidentiality and anonymity of the data that was gathered, keeping ethical integrity throughout the whole research project.

3.4.1. Quantitative Data Collection

Quantitative data collection began by combining the Turkish versions of the Motivation and Attitude Scale and the Foreign Language Classroom Anxiety Scale (FLCAS) into a single 5-option Likert-type scale (Appendix 5). Students were informed about the research and asked if they wanted to participate voluntarily. After obtaining consent, students received paper-based scales and optical forms. The data collection process involved each group spending approximately 25 minutes completing the scales. The students were grouped and given clear instructions on how to fill out the forms accurately. Pre-test data was collected one week before the experimental process commenced, ensuring that students had enough time to understand and respond to the scales without feeling rushed. In addition to the scales, an achievement test was also administered to assess the students' learning outcomes. Most students completed this test in about 30 minutes, though some required additional time to finish. This achievement test was crucial in providing a comprehensive understanding of the students' progress and the effectiveness of the instructional interventions. Post-test data was obtained two weeks after the formative tests interventions, following a similar procedure. This timing allowed for a thorough assessment of any changes in students' motivation, attitudes, and anxiety levels after the interventions. The data spreadsheets from the optical forms were then meticulously transferred to SPSS for analysis, ensuring accuracy and reliability in the subsequent statistical evaluations.

3.4.2. Qualitative Data Collection

Based on the quantitative data analysis, a set of questions were created to collect qualitative data of this research. Focus group interviews were conducted first to generate ideas and create interactions between student responses. During the focus group session, participants were invited into a discussion guided by 10 item focus group interview form. All key words and implications were recorded and carefully noted down throughout the session which lasted around 25 minutes. After the focus group interview, the researcher instructed students to fill in a form answering similar questions with key words. Students were reminded that the form did not collect their names or email addresses so they could freely write their opinions. All qualitative data was then coded into excel sheets under different titles and themes for further analysis.

3.5. Implementation

3.5.1. Pre-Experiment Pilot Study

A pilot study was conducted to identify possible problems and to effectively conduct the experimental process. The purpose of this initial pilot application was to set up the classroom, preview the on boarding process, diagnose possible problems, see different

gamification elements and different user modes of the tools. The pilot study was applied at Inonu University, School of Foreign Languages in 2022-2023 academic year. Two classes with the same English level were randomly chosen. Each of the classes had around 18 students that regularly attended classes. The lesson that hosted the pilot program was listening and speaking and the book for this lesson was Q Skills for Success Listening and Speaking Level 1. Each of the groups took an English test of 20 questions through one of the student response systems, Kahoot and Socrative. The questions were prepared according to the course book used for this class.

The first group took the test through Kahoot. Most of the students were already familiar with the platform, yet some of them needed some instructions before they were able to get on board and answer the questions. Five minute was enough to get all the student ready for the test. Two of the students did not have internet connection, so the researcher provided hotspot internet connection. The classic mode of Kahoot was chosen, which means students competed individually and not in a team. The test was conducted with 18 students and took 21 minutes. All students were able to answer all of the questions. Students showed excitement and cheering reactions during the test which was mostly due to the time limit and thriller music in the background.

The second group took the test with Socrative, which was not known by most of the students. Only one student was familiar with this student response system. Unlike Kahoot, Socrative has 3 different individual testing modes called Instant Feedback, Open Navigation and Teacher Paced. In the first two modes, students have to do the test by themselves without any interaction with the classmates and the teacher. So, the third mode, which was more similar to the classic mode of Kahoot, was used. One major difference was that Socrative do not have a countdown time limit function for each question. Therefore, students waited until everyone answered the question. Another difference was that students were not able to see the ranking after each question. The feedback they receive only shows whether their answer was correct or not. There were no technical issues during this activity and all students were able to connect to SRS around 6 minutes. The instructor explained how they would see and answer questions. All the 19 students were able to answer the questions in 27 minutes.

3.5.2. Implementing Formative Tests

The implementation of the research study involved a structured approach to data collection and assessment throughout the duration of the study. Firstly, pre-test data were

gathered utilising achievement tests, motivation and anxiety scales to assess participants' English proficiency level along with their motivation, and anxiety levels towards learning English. Following this, students were informed about the schedule for end-of-unit formative tests, which were conducted weekly through one of the gamified student response systems (Kahoot or Socrative) or paper based tests. The formative tests were based on the course book, Wide Angle 3, which is B1 level. The formative tests were conducted according to the schedule given below.

Figure 2. *Course Map and Formative Tests Schedule*

Course book: Wide Angle 3 (B1)			
W	**Date**	**Units**	**Formative Tests**
1	27 NOV-01 DEC	Unit 1-2	**Test 1**
2	04 – 08 DEC	Unit 2-3	**Test 2**
3	11-15 DEC	Unit 4-5	**Test 3**
4	18 - 22 DEC	Unit 5-6	**Test 4**
5	25-29 DEC	Unit 7-8	**Test 5, 6**
6	01-05 JAN	Unit 8-9	**Test 7**
7	08-12 JAN	Unit 10-11	**Test 8, 9**
8	15-19 JAN	Unit 11-12	**Test 10**

The formative tests were administered in accordance with this calendar, enabling regular assessment and feedback sessions. Each formative test session began with a brief on boarding period of approximately five minutes, followed by a testing session of 20 to 25 minutes. During this session, participants completed a series of 12 to 15 multiple-choice and true/false questions. Sample formative tests are given in Appendix 9. The formative tests were prepared based on the learning outcomes and skills given in table of specifications for the achievement test (Appendix 2). Following the completion of all 10 formative tests, post-test data were collected two weeks later to measure any changes or improvements in participants' performance and levels of motivation and anxiety. This structured approach to implementation ensured systematic data collection and assessment, facilitating a comprehensive analysis of the impact of the intervention on participants' achievement, motivation and anxiety.

3.6. Data Analysis

This research followed a systematic approach to ensure the accuracy and reliability of the findings. All steps involved in data analysis process for quantitative and qualitative data is described in the following sections.

3.6.1. Quantitative Data Analysis

Data were collected before and after the experimental implementation phase. The collected data were then transferred into SPSS (Statistical Package for the Social Sciences), a widely used software for statistical analysis. To maintain consistency in the analysis process, certain items within the motivation and anxiety scales were reverse coded. Then missing values were identified and corrected. Additionally, students who did not complete the pre-test or those who provided identical responses across all items were excluded from the dataset to decrease potential distortion.

The ANCOVA analysis was performed to evaluate the impact of the experimental intervention on the dependent variables while controlling for pre-existing differences among groups. ANCOVA was preferred in this study to control for initial differences in student motivation, thereby ensuring a precise measurement of the effects of different formative assessment methods on students' achievement, motivation, and anxiety levels. ANCOVA is a statistical test used to estimate the effect of a treatment given to one group but not to the other group or groups by mathematically removing differences between groups that are not equivalent (Can, 2013; Field, 2013). ANCOVA adjusts the dependent variable based on the influence of one or more covariates to reduce error variance and increase the precision of the treatment effect estimation (Field, 2013). This method is useful when pre-existing differences between groups could affect the results, allowing researchers to control for these differences and obtain more reliable conclusions from their data analysis. ANCOVA analysis requires several critical assumptions to ensure the validity of results. One important assumption is to confirm the independence of groups to ensure that observations in one group are not influenced by others. Normality tests should be conducted to assess whether the data follows a normal distribution, which is essential for statistical analyses. Homogeneity of group variances should be ensured to guarantee consistent variability among compared groups. Similarly, the homogeneity of the regression slope verifies the consistency of the relationship between the independent variable and covariate across groups. Linearity examines whether the relationship between variables is linear, while independence of the independent variable and covariate confirms that the covariate is not influenced by the independent variable. These assumptions collectively prevent bias and ensure the reliability of ANCOVA results (Can, 2013; Field, 2013). The assumptions required for analysis of covariance (ANCOVA) were carefully examined to ensure that they were met prior to conducting the primary analyses and reported in the findings section.

The findings of this research are interpreted on the p-value of 0.01, which is often suggested by statisticians and researchers who advocate a more sensitive significance threshold in hypothesis testing. Fisher (1936), suggests that the significance level may vary depending on factors such as the field of study, the research question, and the consequences of committing Type I and Type II errors. The aim of this approach is to decrease the chances of obtaining false positive results in statistical analyses. After conducting statistical analyses, the results were carefully examined and reported in the findings section of this study.

3.6.1. Qualitative Data Analysis

The qualitative data of this study were obtained through focus group interview form and formative tests questionnaire. Focus group interview recordings were first carefully listened to and significant keywords and insights were extracted and coded into a spreadsheet. The questionnaire responses were reviewed, and the relevant data was also coded into the spreadsheets. Following coding, these data points were organized and classified based on the three main research variables: motivation, anxiety, and achievement. Content analysis approach was used to analyse the qualitative data and the similar expressions were combined, arranged and interpreted within the framework of 3 main variables of this research. In the content analysis method, the researcher looks for concepts and relationships that can explain the data (Yıldırım & Simsek, 1999).

A number of techniques were employed in the analysis of the qualitative data for this study in order to ensure the reliability and validity of the findings. A key strategy was triangulation, which involved the use of two different data collection tools, focus group interviews and questionnaires to collect data from participants and produce a comprehensive understanding of the research issues, while making sure that participants freely expressed their view about the formative tests. As a measure to ensure the validity and reliability of the coding process, another researcher independently classified the data. Any inconsistencies or disparities in the coding were thoroughly investigated and settled by consensus and debate. Given the nature of qualitative research, ensuring high intercoder reliability is crucial (Miles & Huberman, 1994, p. 64; Yıldırım & Simsek, 1999). According to Miles and Huberman (1994), while a consistency rate of 70% and above is acceptable, a rate above 80% is considered preferred. The reliability rate for the coded items is approximately 87.39%, which indicates a high level of agreement between the coders, reflecting a strong consistency in the coding process. This procedure enhanced the objectivity of the analysis and reduced the impact of individual bias. In addition, member checking technique was carried out to verify the accuracy and reliability

of the results. The initial findings and explanations were presented to the participants, allowing them to confirm that their views and experiences had been accurately captured. The involvement of the participants in the validation process increased the credibility of the study and at the same time validated the results. In conclusion, the use of methodological procedures resulted in a reliable and valid qualitative data analysis, ensuring that the conclusions are soundly based. Following the categorization and coding of all the data, the results were finally evaluated in light of the research problems and reported in the findings section.

In the qualitative findings part, participant responses were categorized based on the type of formative assessment they participated in. Responses from the Kahoot questionnaire were labelled as KQ_S1, where "KQ" stands for Kahoot Questionnaire and "S1" indicates the student number. Similarly, answers from the Kahoot group focus interviews were labelled as KFG_Code Name, with "KFG" representing Kahoot Focus Group. For the Socrative group, the questionnaire responses were coded as SQ_S1, and focus group responses were coded as SFG_Code Name. For the paper-based test group, responses from the questionnaire were labelled as PQ_S1, and those from the focus group interviews were labelled as PFG_Code Name. This coding scheme was employed to ensure that the source of each response was clearly identified, facilitating a structured and organized presentation of the qualitative data.

PART 4

FINDINGS

The findings section of this research presents analysis results for quantitative and qualitative data. The quantitative results concerning achievement, motivation, and anxiety obtained from analysis are presented consequently. Then, results regarding qualitative findings are presented offering deeper insights into the implications of quantitative data.

4.1. Findings for the First Sub-Problem

To explore how gamified student response systems, affect students' achievement level while learning English as a foreign language, an ANCOVA test was used to compare the adjusted achievement scores for each group that used different gamified student responses systems as a formative assessment tool. Pre-test results of each group is considered as a covariate or control variable, removing the effect of any pre-existing differences between groups. Table 2 presents the achievement scores of the students in different groups for the dependent variable and the adjusted achievement scores according to the control variable.

Table 8. *Mean achievement scores of the groups before and after adjustment according to the control variable*

Groups	N	$\overline{X}$	Adjusted $\overline{X}$
Kahoot	19	51.4	53.3
Socrative	17	56.1	57.1
Paper Based	17	72.4	69.2

Upon analysis of the adjusted achievement scores of the groups based on their pre-test levels, it was found that the students who received formative assessment with the paper and pencil method had the highest average achievement score ($\overline{X}$ =69.2), followed by the group that conducted formative tests through Socrative ($\overline{X}$ =57.1), and finally, the group with the lowest average score took formative tests with Kahoot ($\overline{X}$ = 53.3).

Before the ANCOVA test was conducted all the assumptions required for this test was checked. The normality assumption was tested using the Kolmogorov-Smirnov test, which

indicated that the distribution meets the normality assumption (p > .01). The homogeneity of the group variances was tested with Levene's test and since there was no significant difference between the variances ($F_{(2; 50)}$= 3.51; p> .01), the assumption of homogeneity of variance is not violated. In order to examine the linearity and homogeneity of the regression slopes, the scatter diagrams of the relationship between the dependent variable and the covariate for each subgroup were examined and it was seen that the relationships were linear and the curves were aligned similarly. In addition, since the joint effect of the independent variable (achievement) and the control variable (achievement before the formative tests) on the dependent variable was not significant ($F_{(2; 278)}$= 0.877; p> .01), it was concluded that the assumption of homogeneity of regression slopes was also met. An ANOVA test was conducted to reveal that students' pre-test achievement scores did not significantly differ across groups ($F_{(2; 30.4)}$=3.05; p> .01). Thus, the independence of independent variable and covariate assumption is also not violated. After all assumptions were checked ANCOVA test was conducted for achievement variable and the results are presented in Table 3.

Table 9. *ANCOVA results regarding the effect of gamified student response systems on students' achievement corrected according to their pre-test scores*

	Sum of Squares	**df**	**Mean Square**	**F**	**P**	**Partial η^2**	**Tukey Post hoc**
Achievement Pre-Test (regression)	3201	1	3201	20.33	< .001*	0.293	Paper based > Kahoot
Group	2222	2	1111	7.06	0.002*	0.224	
Residual	7717	49	157				

The analysis show that the effect of different formative test methods on learners' achievement scores was significant, with a large effect size, after controlling for the effect of their initial achievement levels, $F_{(2; 49)} = 7.06$, $p < .01$, *partial* $\eta_2 = .224$. Post hoc comparisons revealed that corrected achievement mean scores of students who took paper based formative tests ($\overline{X} = 69.2$) are significantly higher than students that took formative tests on gamified student response system named Kahoot ($\overline{X} = 53.3$) (p<.01). The results of the analysis also show that the control variable (students' initial achievement scores) is significantly related to students' final achievement scores with a large effect size, ($F_{(1; 49)} = 20.33$, $p < .01$, partial η^2=0.293).

4.2. Findings for the Second Sub-Problem

Another ANCOVA test was conducted to examine the effect of gamified student response systems as formative assessment tools on students' motivation in learning English as a foreign language. The pre-test scores of each group were used as a covariate, accounting for any initial differences between the groups. Table 4 shows the motivation levels of students in different groups for the dependent variable, as well as the adjusted motivation scores based on the control variable.

Table 10. *Mean motivation scores of the groups before and after adjustment according to the control variable*

Groups	N	$\overline{X}$	Adjusted $\overline{X}$
Kahoot	19	136	135
Socrative	17	126	132
Paper Based	17	143	138

Upon analysis of the adjusted motivation scores of the groups based on their pre-test levels, it was found that the students who received formative assessment with the paper and pencil method had the highest average motivation score ($\overline{X}$ =138), followed by the group that conducted formative tests through Kahoot ($\overline{X}$ =135), and finally, the group with the lowest average score took formative tests with Socrative ($\overline{X}$ = 132).

Before the ANCOVA test was conducted all the assumptions required for this test was checked. The normality assumption was tested using the Kolmogorov-Smirnov test, which indicated that the distribution meets the normality assumption ($p > .01$). The homogeneity of the group variances was tested with Levene's test and since there was no significant difference between the variances ($F_{(2; 50)}= 0.399$; $p> .01$), the assumption of homogeneity of variance is not violated. In order to examine the linearity and homogeneity of the regression slopes, the scatter diagrams of the relationship between the dependent variable and the covariate for each subgroup were examined and it was seen that the relationships were linear and the curves were aligned similarly. In addition, since the joint effect of the independent variable (motivation) and the control variable (motivation before the formative tests) on the dependent variable was not significant ($F_{(2; 47)}= 1.53$; $p> .01$), it was concluded that the assumption of homogeneity of regression slopes was also met. An ANOVA test was conducted to reveal that students' pre-test motivation scores did not significantly differ across groups ($F_{(2; 32.1)}=3.06$; $p> .01$). Thus, the independence of independent variable and covariate assumption is also not violated. After all assumptions were checked ANCOVA test was conducted for motivation variable and the results are presented in Table 5.

Table 11. *ANCOVA results regarding the effect of gamified student response systems on students' motivation corrected according to their pre-test scores*

	Sum of Squares	**df**	**Mean Square**	**F**	**p**	**Partial η^2**
Motivation Pre-Test (regression)	7919	1	7919	33.81	< .001*	0.408
Group	220	2	110	0.471	0.627	
Residual	11474	49	234			

The results of the analysis show that the control variable (students' initial motivation level) is significantly related to students' post-experiment motivation with a large effect size, $F_{(1;\,49)} = 33.81$, $p < .01$, *partial* $\eta_2 = .408$. However, the analysis show that the effect of different formative test methods on learners' motivation scores was not significant after controlling for the effect of their initial motivation levels, $F_{(2;\,49)} = 0.471$, $p > .01$. This indicates that mean scores of corrected motivation for each group are not significantly different from each other.

4.3. Findings for the Third Sub-Problem

Another ANCOVA test was conducted to examine the effect of gamified student response systems as formative assessment tools on students' anxiety in learning English as a foreign language. The pre-test scores of each group were used as a covariate, accounting for any initial differences between the groups. Table 6 shows the anxiety levels of students in different groups for the dependent variable, as well as the adjusted anxiety scores based on the control variable.

Table 12. *Mean anxiety scores of the groups before and after adjustment according to the control variable*

Groups	**N**	$\overline{X}$	**Adjusted** $\overline{X}$
Kahoot	19	88.3	88.1
Socrative	17	106	105.9
Paper Based	17	79	79.8

The analysis of the adjusted anxiety scores of each group based on their pre-test levels, shows that the students who received formative assessments with Socrative had the highest average anxiety value ($\overline{X}$=105.9), followed by the group that conducted formative tests through Kahoot ($\overline{X}$=88.1), and finally, the group with the lowest average score of anxiety took formative tests on paper ($\overline{X}$=79.8).

Before the ANCOVA test was conducted for anxiety variable, all the assumptions required for this test was checked. The normality assumption was tested using the Kolmogorov-Smirnov test, which indicated that the distribution meets the normality assumption ($p > .01$). The homogeneity of the group variances was tested with Levene's test and since there was no significant difference between the variances ($F_{(2;\ 50)}= 4.41$; $p> .01$), the assumption of homogeneity of variance is not violated. In order to examine the linearity and homogeneity of the regression slopes, the scatter diagrams of the relationship between the dependent variable and the covariate for each subgroup were examined and it was seen that the relationships were linear and the curves were aligned similarly. In addition, since the joint effect of the independent variable (anxiety) and the control variable (anxiety before the formative tests) on the dependent variable was not significant ($F_{(2;\ 47)}= 2.25$; $p> .01$), it was concluded that the assumption of homogeneity of regression slopes was also met. Finally, a one way ANOVA test was conducted to reveal that students' pre-test anxiety scores did not significantly differ across groups ($F_{(2;\ 32.5)}=0.483$; $p> .01$). Thus, the independence of independent variable and covariate assumption is also not violated. After all assumptions were checked ANCOVA test was conducted for anxiety variable and the results are presented in Table 7.

Table 13. *ANCOVA results regarding the effect of gamified student response systems on students' anxiety corrected according to their pre-test scores*

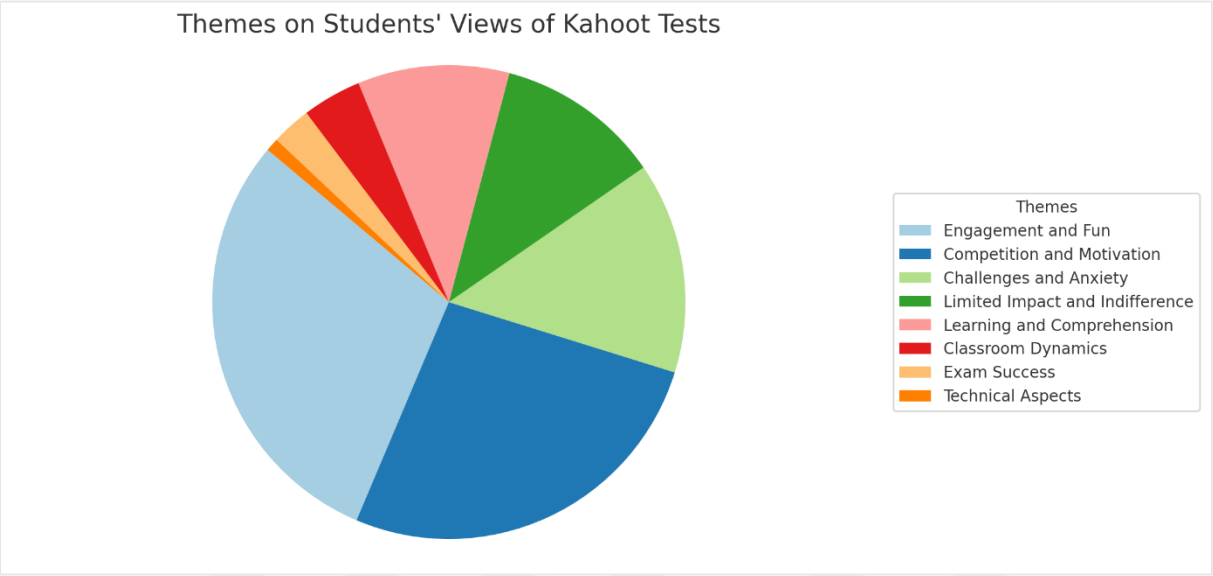
	Sum of Squares	**df**	**Mean Square**	**F**	**p**	**Partial η^2**	**Tukey Post hoc**
Anxiety Pre-Test (regression)	1000	1	1000	2.67	0.108		Socrative > Paper based
Group	6032	2	3016	8.07	<.001	0.248	
Residual	18319	49	374				

The analysis show that the effect of different formative test methods on learners' anxiety levels was significant after controlling for the effect of their initial anxiety scores with a large effect size, $F_{(2;\ 49)} = 8.07$, $p < .01$, *partial* $\eta_2 = .248$. Post hoc comparisons revealed that corrected anxiety mean scores of students who took formative tests on Socrative ($\overline{X} = 105.9$) are significantly higher than students that took paper based formative tests ($\overline{X} = 79.8$) ($p<.01$). The results of the analysis also show that the control variable (students' initial anxiety scores) is not significantly related to students' final anxiety levels, $F_{(1;\ 49)} = 2.67$, $p > .01$.

4.4. Findings for the Fourth Sub-Problem

This chapter presents the qualitative findings on students' views of Kahoot tests. These findings were collected through focus group interviews and formative tests questionnaire. A total of 222 responses were analysed and themes emerged based on the content of these responses. Figure 3, given below shows various themes based on students' perspectives on Kahoot tests and provide valuable insights into their experiences and perceptions.

Figure 3. *Themes on students' views of Kahoot tests.*



Students expressed "*Engagement and Fun"* as the most predominant theme when taking Kahoot tests. They appreciated the interactive nature of the platform and found the gamified elements particularly engaging. Many students expressed relief from boredom and monotony typically associated with traditional classroom activities, stating that Kahoot provided a welcome break from the routine. For instance, one student mentioned, *"it helps alleviate boredom after getting bored in class (KQ_S5)"*. Students mostly associated Kahoot with positive adjectives such as *"nice, fun, very enjoyable and exciting and competitive (KQ_S1, KQ_S3, KQ_S4, KQ_S8, KQ_S11, KQ_S12, KQ_S13)"*. They appreciated the visual appeal and game-like elements of Kahoot, with comments such as *"it was visually entertaining (KFG_Ahmet)"* and *"I love it, because it's like a game (KQ_S1)"*. Some students specifically mentioned that the gamified nature of Kahoot made learning more enjoyable, stating, *"I like that it entertains me (KQ_S11)"* and *"teaching while entertaining (KQ_S12)"*. Overall, students found Kahoot tests to be an engaging and fun way to learn. They appreciated the positive and interactive learning environment created by Kahoot, emphasizing its ability to capture their interest and keep them focused during lessons.

The "*Competition and Motivation"* aspect of Kahoot tests emerged as a significant motivator for students. The feedback regarding competition and motivation in Kahoot tests reflects students' perspectives on how the competitive aspects of the platform impact their motivation and engagement. Many students mentioned the thrill of competing against their peers, with comments such *as "to compete what we know over time (KFG_Mehmet)"* and *"motivating (KFG_Ayşe)*". They appreciated the competitive element, stating that *"quick competition makes us ambitious (KQ_S3)"* and *"competitive ambition (KQ_S4)"*. For some students, competition served as a source of motivation, as they felt driven to improve and excel when competing against others. They mentioned that *"everyone having a competitive ambition against each other (KQ_S3)"* and *"I want to improve myself more as I see how good others are (KQ_S8)"*. In addition, the competition encouraged students to try harder, with comments such as *"I have tried harder (KQ_S1)*" and "*I am trying harder (KQ_S7)*". Overall, students viewed competition in Kahoot tests as a motivating factor that drove them to perform better and put in more effort. The competitive atmosphere fostered a sense of ambition and determination among students, encouraging them to try harder for success and improvement.

Despite the overall positive reception of Kahoot tests, some answers pointed to "*Challenges and Anxiety*" while being tested on Kahoot. Some students expressed feelings of anxiety and pressure associated with the competitive nature of the platform. Several students reported experiencing jealousy and frustration, especially when losing by a small margin. For example, one student mentioned, *"losing by a small margin made me feel regretful (KFG_Ömer)"*, while another stated, "*it stresses me out a little, but it's a good feeling (KQ_S3)*". Others noted that Kahoot tests often led to self-critical thoughts, with comments like *"it generally makes me think badly about myself (KQ_S9)"*. The pressure to perform well sometimes resulted in decreased effort after making mistakes, as highlighted by students who said, *"I put in more effort after a few mistakes, but as the mistakes increased, I gave up (KFG_Esma)"*, and *"when I made too many mistakes, I just gave up (KFG_Ali)"*. Additionally, the time constraint added to their anxiety, with one student explaining, *"the time limit made me anxious (KFG_Ömer, KFG_Esma)*". Overall, these responses indicate that while Kahoot can be engaging, its competitive elements and time pressure can also lead to significant stress and anxiety for some students.

Students' responses to *"Limited Impact and Indifference"* in Kahoot tests reveal a range of opinions, with many expressing limited engagement and interest in the platform. Answers like *"It's okay (KQ_S7)*", "*It doesn't have a feature I like (KQ_S9)*" and "*It didn't have much*

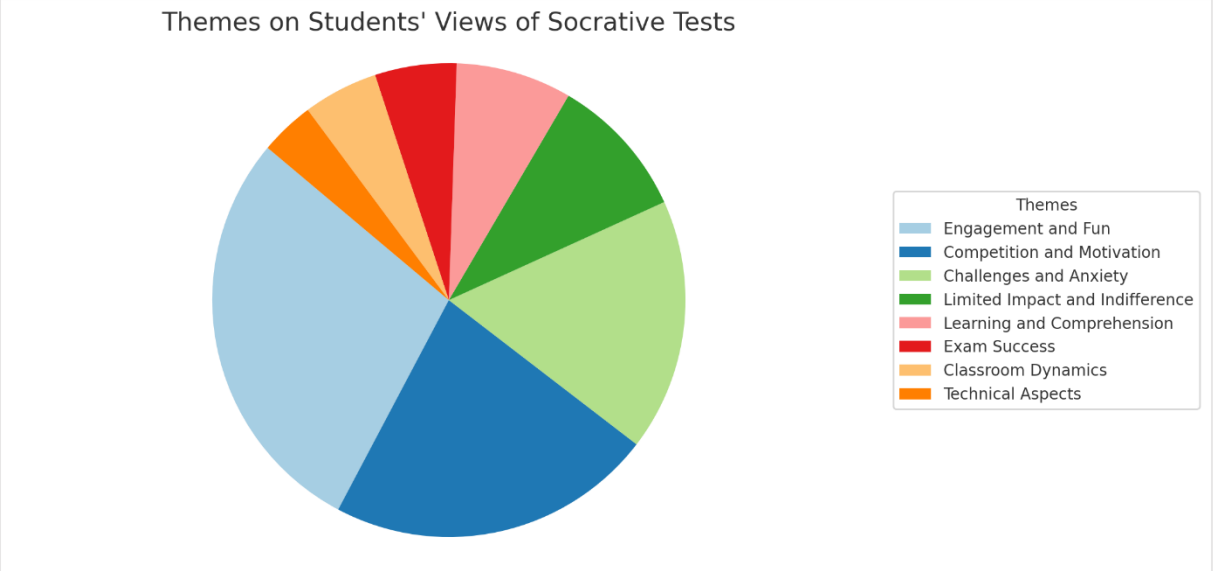
impact (KQ_S12)" indicate a lack of enthusiasm or interest. Comments such as "*I don't think it has increased my motivation (KQ_S9)*" and "*It doesn't affect me much (KQ_S14)*" indicate that some students felt indifferent or unaffected by the tests. In addition, some students reported feeling calm or not interested during the tests, with comments such as *"calm (KQ_S12)*" and "*normal state (KQ_S5)*". Others stated that they were able to concentrate on answering the remaining questions without feeling significantly affected. Taken together, these responses suggest that for some students the Kahoot tests did not evoke strong emotions or motivation, resulting in a sense of disinterest or low impact.

A few students commented on the impact of Kahoot tests on "*Classroom Dynamics",* noting that these activities promoted collaboration and teamwork among peers. They enjoyed the social aspect of Kahoot tests and found them to be conducive to a positive learning environment. A minority of students viewed Kahoot tests as directly contributing to their "*Exam Success*" in their formal examinations. They believed that participating in Kahoot activities helped them review course material and improve their performance on quizzes and tests. A small number of students raised concerns about the *"Technical Aspects"* of Kahoot tests, such as connectivity issues or difficulties accessing the platform. These challenges occasionally disrupted the flow of the assessment and impacted students' overall experience.

4.5. Findings for the Fifth Sub-Problem

In this chapter, we present the qualitative findings regarding students' views on Socrative tests, as derived from focus group interviews and formative test questionnaires. A total of 215 responses were analysed and categorized into themes given in Figure 4. These findings provide comprehensive insights into students' experiences and perceptions of using Socrative as a formative testing platform.

Figure 4. *Themes on students' views of Socrative tests.*



A significant portion of students found Socrative tests "*Engaging and Fun*". They appreciated how the platform made lessons more dynamic and broke the monotony of traditional classes. Many students expressed that Socrative tests made English lessons fun and even helped them develop a positive attitude towards the subject. Comments such as *"It made me love English (SFG_Osman)*" and "*It made English enjoyable (SQ_S8)*" highlight the positive impact on their attitude towards learning English. Students described the experience as *"amazing (SQ_S11)*" and "*it was fun (SQ_S8, SQ_S12, SQ_S14, SQ_S16)*" noting that the interactive nature of Socrative tests was motivating and encouraging. One student mentioned that it even woke up classmates who would usually be disengaged, stating, "*It even woke up classmates who would usually be disengaged (SFG_Osman)*" The overall atmosphere in the classroom was perceived as more exciting and participatory, with students agreeing that such applications made lessons enjoyable. The competitive aspect also added to the excitement, as students were driven by the desire to perform well and win rewards, which increased their motivation and participation. Comments like "*Competition motivated us and increased class participation (SQ_S3)*" and "*Because it created an atmosphere of excitement (SQ_S13)*" reflect this sentiment. Some students compared the experience to an online game, describing it as "*I felt like I was in an online battle game (SFG_Osman)*" and "*I felt like I was in an online game (SQ_S8)"* Overall, students felt good about the use of Socrative tests, with remarks such as "*It feels good (SQ_S10)*" and "*I find it nice (SQ_S10, SQ_S12, SQ_S13)*" The enjoyment and motivation derived from these tests contributed to a more positive and enthusiastic learning environment.

The "*Competition and Motivation*" aspect of Socrative tests were emphasized by many students. They were motivated to compete with their peers and do well, which increased the excitement and involvement. Students used phrases like *"It created a competitive atmosphere in the classroom (SQ_S10)"* and "*It created competition (SQ_S2, SQ_S13)*" to explain how Socrative assessments fostered a competitive environment in the classroom. It was good to see how we ranked among our peers. Students frequently expressed feelings of motivation and determination, by stating *"It motivated me a lot (SFG_Betül)"* and *"Yes, it increased motivation because it created competition (SQ_S3)*" The desire to succeed and exceed others was a recurring theme. One student admitted, "*I got excited when I saw my name on the screen (SFG_Osman)*" and another said, "*I got more enthusiastic when I saw my name (SFG_ Zehra)*" Seeing their names on the screen fuelled their competitive spirit. As demonstrated by remarks like "*It fuelled my ambition (SQ_7)*" and *"I try harder and get ambitious (SQ_S10)"* the competitive atmosphere not only inspired the students, but also created a sense of determination and purpose. Socrative tests has generally shown to be quite successful in inspiring students and raising their level of motivation in the learning process.

Students expressed various feelings that were coded under "*Challenges and Anxiety*" theme. These feeling were partly related to the time constraints of the tests, with comments like "*I felt a bit tense because of the time limit (SQ_S6)"* and "*I had to understand and answer the question in a limited time (SQ_S16)"* Making mistakes also affected students' motivation negatively, with one student stating, "*My motivation dropped with each wrong answer (SFG_Zehra)*" and another admitting, *"My motivation dropped because there were rewards (SFG_Betül)*" The fear of losing points or falling behind due to mistakes contributed to feelings of stress and anxiety. Several students mentioned feeling anxious and tense during the tests, with comments such as "*Anxiety and a bit of tension (SQ_S1)*" and "*I was a bit tense (SQ_S7, SQ_S8, SQ_S14)"* The stress caused by the tests sometimes led to a decrease in focus and effort, as one student mentioned, "*I was less focused when I felt stressed (SQ_S14)*" Overall, while Socrative tests provided a competitive environment for some students, others experienced challenges and anxiety, particularly related to time constraints, making mistakes, and fear of falling behind. These factors negatively impacted their performance and overall experience.

A group of students expressed "*Limited Impact and Indifference*" towards the Socrative tests, seeing them as an additional tool rather than a significant addition to their educational experience. Some felt that the tests had an average or neutral impact, while others felt that they had little or no impact. Several students emphasised their lack of emotional investment, stating

that they felt neutral or did not experience any emotions during the tests. For example, one student remarked, "*I didn't feel anything at all; I just did what I thought was right at the time (SQ_S5)*". Same student also commented, "*It's illogical to stress about something that has no average effect (SQ_S5)*". Overall, while Socrative tests may have provided an additional assessment tool for some students, others found them to have limited impact or were indifferent to them, preferring traditional methods instead.

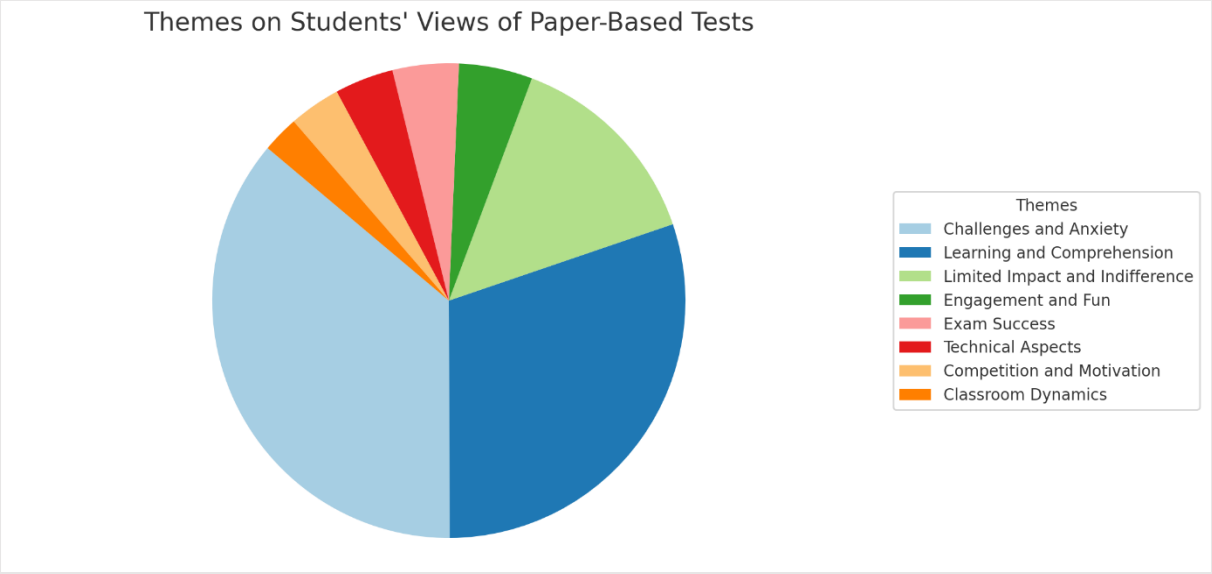
Despite some concerns, many students acknowledged the "*Learning and Comprehension*" value of Socrative tests. They appreciated how the platform reinforced learning concepts and helped them assess their understanding of the material. Students found it useful for reinforcing learned information and appreciated the immediate feedback for identifying areas for improvement. One student mentioned, "*It was a good activity to develop and entertain us (SFG_Erkan)*", while another noted, "*It was important to reinforce the information we learned (SQ_S5)*". The short reviews and reminders after the questions were seen as particularly useful, with one student stating, "*The reminders after the questions were helpful (SFG_Sibel)*". Overall, some students felt that Socrative tests had a positive impact on their learning and comprehension of the subject.

Students highlighted the positive impact of Socrative tests on "*Classroom Dynamics*", noting that these tests fostered collaboration and teamwork among peers, creating a more engaging and lively classroom atmosphere. One student mentioned, "*It ensured everyone's participation in class and created a fun environment (SQ_S16)"* while another observed, "*It definitely changed the atmosphere positively (SFG_Zehra)*" Additionally, some students believed that regular use of Socrative tests contributed to their success in formal examinations by providing frequent practice and immediate feedback. This preparation helped them manage time effectively and feel more confident during exams. A student noted, "*I think it was good preparation for exams because we learned new vocabulary (SQ_S4)*" However, a few students raised concerns about technical aspects, such as connectivity issues, which occasionally disrupted the flow of assessments. Despite this, many appreciated the ease of access and quick response times, with one student stating, "*It was easily accessible from the phone (SFG_Betül)*" Overall, Socrative tests were seen as beneficial for enhancing classroom dynamics, helping exam preparation, and being generally user-friendly, though some technical issues were noted.

4.6. Findings for the Sixth Sub-Problem

Exploring students' opinions about paper-based formative tests was the sixth sub problem in this study. Focus group interviews and formative test questionnaires provided qualitative data that reflected on students' opinions, preferences and experiences with traditional paper-based assessment. The themes of coded qualitative data are given in Figure 5 below, which provides a thorough overview of the opinions expressed by the participants. The findings provide detailed insights on how students view paper-based formative assessment in relation to their educational experience.

Figure 5. *Themes on students' views of paper-based tests*



A significant number of students reported experiencing challenges and anxiety associated with paper-based tests. Many students felt a general sense of tension in the testing environment, even if they usually felt relaxed. One student noted, "*I usually feel relaxed, but there is still a tension in that environment (PQ_S14)*". Another shared that they start feeling nervous but become more focused and relaxed after beginning the test, *"I feel nervous at the beginning, but once I look over the test and focus, I feel more relaxed (PQ_S15)*". The anticipation of results also contributed to feelings of anxiety, with a student stating, "*I feel nervous when I see the results (PQ_S12)*". Additionally, several students mentioned that the pressure to achieve high scores diminished their motivation to learn, "*We study for high scores, so not much learning happens (PQ_S16)*". This view was supported by others who felt that the format and expectations of paper tests had a negative effect on their motivation to learn. Feelings of inadequacy and stress were frequently expressed, with some students expressing a sense of failure and frustration, "*I feel inadequate in English (PQ_S2)*" and "*I get angry at myself for not addressing my weaknesses (PQ_S5)*". The pressure and stress associated with

these tests often led to a decrease in performance and a reluctance to engage with the material, "*I feel like I can't do it and leave the test (PQ_S1)*". Overall, the traditional paper-based testing environment seemed to increase feelings of anxiety and reduce motivation among students.

Many students acknowledged the educational value of paper-based tests (*Learning and Comprehension)*, viewing them as essential tools for reinforcing and consolidating knowledge covered in classes. Students appreciated that these tests allowed them to see their own progress and understanding. One student stated, "*Seeing my level is good (PQ_S12)*" while another mentioned, "*I think most tests contribute to students (PQ_S14)*" These assessments provided a practical means for students to practice and review material, helping them identify and address their weaknesses. Several students emphasized the role of paper-based tests in facilitating review and repetition, which they found beneficial for their learning. Comments such as *"It is good for repetition (PFG_Serdar)*" and "*The tests help us practice and see our weaknesses (PQ_S3)*" highlight this perspective. Students also valued the feedback from these tests, which helped them gauge their comprehension and improve their knowledge. One student remarked, "*It shows whether I understand the topic or not (PQ_S8)*" while another said, "*It helps because we do repetitions, but the frequency of tests can be overwhelming (PQ_S13)*" Overall, students viewed paper-based tests as instrumental in their learning process, providing necessary practice, aiding in comprehension, and highlighting areas for improvement.

A group of students expressed indifference to paper tests and the feeling that these assessments had a limited impact on their learning (*Limited Impact and Indifference*). Many students reported that the tests did not have a significant impact on their understanding or motivation. One student mentioned "*I don't think it has much effect (PQ_S2)*", while another stated *"It doesn't have any effect (PFG_Esra)"*. Several students felt that the tests neither helped nor hindered their learning, with comments such as "*Neither relaxed nor tense (PQ_S6)*" and "*Sometimes good, sometimes bad (PQ_S1)*". Some students felt that the tests were not particularly useful because of their own language skills, as one noted: "*Because my English isn't very good, the tests don't affect me (PQ_S14)*". Others expressed a general lack of concern or emotional investment in the tests, with responses such as "*I don't feel anything because I don't care (PQ_S10)*" and "*No, I don't feel anything (PQ_S14)*". Overall, these students saw paper-based formative tests as having minimal impact on their learning experience, often finding them neither beneficial nor detrimental.

While the theme of "*Engagement and Fun*" was coded more frequently in responses related to Kahoot and Socrative tests, only a small number of students mentioned these aspects for paper-based tests. Out of the total responses, only 10 students highlighted engagement and fun as notable aspects of their experience with paper-based tests. Some students found the paper-based tests generally good, with comments such as "*Good (PFG_Tuba, PFG_Serdar, PFG_Aras, PFG_Hasan)*" and "*I think it's good (PQ_S11)*". Others appreciated that the tests were not overly challenging, describing them as "*Not very challenging, at a good level (PQ_S5)*". Some students mentioned that they felt relaxed during the tests, with remarks such as "*I feel relaxed*" and "I*n general I feel relaxed during the tests (PQ_S8)*". Overall, while some students had a positive view of paper-based tests in terms of engagement and comfort, this theme was significantly less prominent compared to their views on more interactive testing methods such as Kahoot and Socrative.

Some students acknowledged that paper-based tests contributed to their exam success. They felt that these tests helped them identify and address their weaknesses, which positively impacted their overall performance. One student noted, *"It increases (motivation) because we take tests (PQ_S13)*" while another mentioned, "*Seeing my mistakes and correcting them helps improve my exam scores (PQ_S7)"* Some students appreciated the structured practice provided by the tests, stating that it encouraged regular study habits and preparation. Students had mixed feelings about the technical aspects of paper-based tests. Some appreciated the multiple-choice format, stating it was beneficial for their scores. However, others suggested improvements, such as adding brief explanations in Turkish for different proficiency levels or reducing the focus on writing tasks. One student suggested, "*It could be supported with different types of questions (PQ_S2)*" while another noted, "*The intensity could be reduced (PQ_S5)*"

While the themes of competition and motivation were more frequently coded in Kahoot and Socrative tests, only a limited number of students mentioned these aspects for paper-based tests. Some found the competition motivating, especially when aiming for high scores, which encouraged them to study harder. However, others felt that the competitive nature could be demoralizing, particularly if they received low scores. One student remarked, *"It increases our motivation in general, but it also affects some people badly, of course, there are those who see that they are behind and break away from the lesson (PQ_S5)"* Paper-based tests influenced the classroom atmosphere by creating a more serious and focused environment. Students noted that these tests increased stress and anxiety before exams but also fostered a sense of responsibility and concentration during lessons. One student observed, "*It creates a more*

serious environment, reminding us of our responsibilities (PQ_S5)" while another mentioned, "*It can be stressful, but we try to relax as a class (PQ_S6)*" Overall, paper-based tests contributed to a mix of stress and engagement within the classroom dynamics.

PART 5

CONCLUSIONS, DISCUSSION AND RECOMMENDATIONS

5.1. Conclusions and Discussion

The objective of this research was to investigate the impact of gamified student response systems on students' achievement, motivation, and anxiety levels in the context of teaching English. The conclusion chapter includes quantitative interpretations focusing on the impact of gamified student response systems on achievement, motivation, and anxiety levels, qualitative findings interpretations detailing students' experiences and perceptions, and a synthesis of both data sets to provide a holistic understanding of the study's results and their relation to existing research.

5.1.1. Conclusions on the First Sub-Problem

The analysis of adjusted achievement scores reveals that the traditional paper and pencil method led to the highest average achievement score, surpassing gamified student response systems, Socrative and Kahoot. This finding aligns with previous research highlighting the effectiveness of traditional assessment methods. Students might perform better with paper and pencil assessments due to their familiarity with these methods. Familiarity can enhance comfort and reduce anxiety, leading to better performance (Andrade & Cizek, 2010). Research has shown that familiarity with assessment formats can significantly affect student learning outcomes and behavior patterns (Islam et al., 2017). The high achievement score from paper-based formative tests could also be attributed to reduced distractions (Andrade & Cizek, 2010; Karatekin, 2017). The group that utilized Socrative achieved a middle average score, suggesting that while student response systems can enhance interaction, focus, and participation (Altwijri et al., 2022), they might not always lead to the highest academic performance. The positive impacts of Socrative include increased student engagement and reduced anxiety (Wood, 2020),

though it may still fall short compared to traditional methods in terms of achievement. Lastly, the group assessed with Kahoot scored the lowest on average achievement score. This outcome is consistent with prior findings that while Kahoot is highly engaging and positively perceived by students (Licorish et al., 2017; Rahmahani et al., 2020), its direct impact on academic achievement can be limited. The playful and gamified nature of Kahoot can enhance motivation and classroom dynamics (Ayten, 2022; Incekar, 2023), yet it might not always translate into higher achievement scores, particularly when compared to more traditional assessment methods.

The finding that students who took paper-based formative tests achieved significantly higher mean scores compared to those using the gamified student response system Kahoot is supported by several studies. Research by Rahmahani (2020) and Holmes (2019) indicates that while Kahoot and similar SRS technologies enhance student perceptions, engagement, and motivation, they do not directly improve cognitive outcomes like academic achievement. Other researchers also reported no significant differences in learning outcomes between gamified and traditional quiz methods, despite increased engagement with gamified systems (Altwijri et al., 2022; Wang et al., 2017). These findings suggest that gamified systems, while beneficial for engagement, may not necessarily lead to improved academic performance, emphasizing the importance of balancing engagement with effective learning strategies in educational technology integration.

The qualitative data further explains the quantitative findings as the answers about paper-based tests highlights that students recognized the educational value of these assessments in reinforcing and consolidating knowledge. Many students viewed paper-based tests as essential tools for practice and review, helping them see their progress and identify weaknesses. This suggests that paper-based tests might provide a more structured and focused environment that encourages deeper understanding and better retention, which could explain the higher achievement scores. Qualitative data suggests that students emphasized the importance of preparing with questions related to lesson topics for reinforcing and consolidating knowledge. They also highlighted the value of tracking their progress through these assessments. Additionally, some students highlighted the structured practice provided by paper-based tests. This structured and focused approach likely contributes to a deeper understanding and better retention of the material, ultimately leading to higher achievement scores.

The qualitative findings reveal that students appreciated the engagement and fun associated with Kahoot tests, with a significant portion finding them visually entertaining and game-like, which made learning enjoyable. Despite these positive aspects, Kahoot's competitive nature and time constraints led to significant anxiety and stress for some students, which could have negatively impacted their performance. Students expressed feelings of anxiety, pressure, and self-critical thoughts, which sometimes led to decreased effort and a sense of giving up after making mistakes.

5.1.2. Conclusions on the Second Sub-Problem

The analysis of how gamified SRSs affect students' motivation levels in learning English revealed that students who received formative assessment with the paper and pencil method had the highest average motivation score, followed by the group using Kahoot, and the group using Socrative. However, this difference was not significant after controlling for initial motivation levels. This suggests that while the method of formative assessment might influence motivation, other factors, such as initial motivation levels, play a more critical role. Qualitative data from participants support these findings, highlighting similar reactions to different formative assessment methods. Responses from qualitative data suggest that while gamified assessments can boost motivation and competitive spirit for some students, others may find traditional methods equally or more motivating due to their straightforward and familiar nature. Different types of formative tests appear to motivate students similarly, as further indicated by the following qualitative data. Student responses to qualitative data instruments suggest that while the methods differ, each has the potential to enhance student motivation in its own way.

Existing research on Student Response Systems might also explain this finding. Traditional paper and pencil methods are familiar to students, reducing anxiety and enhancing comfort, which boosts motivation (Andrade & Cizek, 2010). These methods often encourage deeper engagement with the material, providing structured feedback that helps students understand their progress and areas for improvement, thus fostering intrinsic motivation (Altwijri et al., 2022). The structured and predictable environment of paper-based assessments also contributes to higher motivation by minimizing distractions and providing clarity, which is crucial for maintaining focus (Karatekin, 2017; Salen & Zimmerman, 2003). Additionally, the alignment between formative assessments and summative exams in traditional methods can motivate students to engage more fully, as they see a direct link to their academic success (Ayten, 2022; Tuttle, 2021). These factors collectively suggest that the traditional paper and pencil method creates a more conducive environment for student motivation, leading to better

engagement and academic outcomes, leaving no significant difference with gamified student response tools as Kahoot or Socrative.

5.1.3. Conclusions on the Third Sub-Problem

The analysis of adjusted anxiety scores indicates that students who received formative assessments with Socrative experienced the highest levels of anxiety, followed by those using Kahoot, with the lowest anxiety levels observed in students using paper-based formative tests. Post hoc comparisons confirmed that anxiety levels of students using Socrative were significantly higher than those using paper-based tests. According to Tuttle (2021), while immediate feedback in SRSs can be beneficial for learning, it might increase anxiety as students are constantly aware of their performance in real-time. This was reflected in student responses in qualitative data regarding Socrative tests, indicating that the pressure of immediate performance evaluation can be stressful.

Shaker et. al., (2021) noted that the competitive nature of gamified SRSs like Kahoot can increase anxiety, especially among students sensitive to time constraints and performance comparisons. Students highlighted how time limits and competition can elevate anxiety levels, which explains why there is a significant difference of anxiety level between Socrative and Paper-based tests, while there is not such difference between Socrative and Kahoot as both were presented with time limits. Cárdenas-Moncada et al. (2020) and Ebadi et al. (2023) suggested that while game dynamics in tools like Kahoot can enhance enjoyment and engagement, they may also create a competitive environment that increases anxiety, particularly for students who are less confident or familiar with the game format. Student responses indicate that unfamiliar or challenging content and the game format can be anxiety-inducing.

Students who used paper-based formative tests reported the lowest levels of anxiety, supporting the idea that traditional methods can be less stressful. Qualitative findings suggest that the absence of real-time feedback and competitive dynamics such as time limit and count down for each item in paper-based tests contributes to a calmer testing environment, reducing anxiety levels.

5.1.4. Conclusions on the Fourth Sub-Problem

The qualitative results on students' opinions of Kahoot tests show a variety of viewpoints, emphasizing the advantages and difficulties of implementing gamified student response systems in the classroom. Engagement and Fun and Competition and Motivation emerged as the most prominent themes, indicating that students find Kahoot engaging and

motivating, aligning with Kiryakova et al. (2014) and Bicen & Kocakoyun (2017), who noted that gamification increases motivation and engagement due to its experiential nature. This is also consistent with Bradshaw & Lowenstein (2011), who emphasized that educational games can enhance student interest, motivation, and collaboration. However, the themes of Challenges and Anxiety and Limited Impact and Indifference reflect mixed perceptions regarding the educational efficacy of Kahoot. Some students appreciate the interactive format, while others feel it has limited impact on their learning. This finding aligns with Rahmahani (2020), who noted that Kahoot positively affects student perceptions and engagement but does not necessarily improve cognitive outcomes like academic achievement. Research suggests that pleasure during learning can enhance performance (Csikszentmihalyi & LeFevre, 1989), but the competitive nature of gamified student response systems such as Kahoot may also increase anxiety (Adkins-Jablonsky et al., 2021). Classroom Dynamics and Exam Success indicate that some students recognize the benefits of Kahoot in creating a more dynamic classroom environment and aiding in exam preparation. This supports the observations of integrating Kahoot to improve classroom dynamics and student perceptions, even if it does not always lead to significant academic gains (Licorish et al., 2017; Yabuno et al., 2019). Technical Aspects were the least mentioned theme, suggesting that while technical issues are relatively infrequent, they can still impact the overall experience. While technical aspects of SRS platforms do not hinder learning, technical challenges still need to be managed effectively to ensure a smooth learning experience (Holmes, 2019).

The quantitative findings of the research further support these conclusions by suggesting that while Kahoot enhances engagement and motivation, it may not lead to the highest academic achievement compared to traditional paper-based methods. However, it offers significant motivational benefits, which are crucial for student engagement in the learning process. Conversely, the higher anxiety levels associated with Socrative suggest that while it might facilitate a dynamic learning environment, it could also increase stress among students. Therefore, careful consideration and strategic implementation of these tools are necessary to optimize their educational effectiveness and minimize potential negative impacts such as increased anxiety.

5.1.5. Conclusions on the Fifth Sub-Problem

The findings from the thematic analysis of students' views on Socrative tests show that Engagement and Fun and Competition and Motivation are the most frequently coded themes. This indicates that students primarily perceive Socrative as a tool that makes learning more

engaging and enjoyable, while also fostering a competitive spirit and motivating them to participate actively. These themes suggest that the interactive and gamified nature of Socrative successfully captures students' interest and encourages a more dynamic and involved learning experience. These conclusions align with the literature emphasizing the role of educational games and gamified systems in increasing student engagement and motivation. Kiryakova et al. (2014) noted that gamification meets the needs for engagement and frequent feedback due to its experiential nature, making learning more enjoyable. Additionally, Zichermann & Cunningham (2011a) found that game elements used in gamification lead to higher commitment and motivation, improving the ability to learn new skills by 40%. This is further supported by Nah et al. (2013), who stated that gamification is used effectively in education to increase engagement and motivation. Therefore, Socrative's ability to make learning interactive and enjoyable likely contributes to these high levels of engagement and motivation.

Additionally, themes of Challenges and Anxiety, Learning and Comprehension, and Classroom Dynamics were significant in the students' responses. While gamified systems like Socrative can enhance learning by providing frequent feedback and fostering a dynamic classroom environment, they can also introduce challenges and anxiety, especially among students who are less confident or familiar with the format. Research suggest that the complexities involved in game-based learning, where the balance between challenge and skill is crucial for maintaining student interest and reducing anxiety (Juul, 2011; Oblinger, 2006). The findings suggest that while students recognize the educational benefits of Socrative in improving comprehension and classroom interaction, managing the associated anxiety is critical for maximizing its effectiveness (Bicen & Kocakoyun, 2017; İ. Yıldırım & Demir, 2014). Furthermore, themes such as Limited Impact and Indifference, and Exam Success highlight that not all students may find Socrative equally beneficial. While some students acknowledge its role in improving classroom dynamics and aiding exam preparation, others may feel that it has limited impact on their learning. This mixed perception underscores the importance of considering individual differences in student preferences and learning styles when implementing gamified student response systems (Dicheva et al., 2015).

Overall, the findings point out to the diverse nature of students' experiences with Socrative tests. While the Socrative is highly effective in enhancing engagement and motivation, it also presents challenges related to anxiety and varying perceptions of its educational impact. This is evident from the quantitative analysis of the adjusted anxiety scores, which shows that students who received formative assessments with Socrative experienced the

highest levels of anxiety significantly higher than those who took paper-based tests but not those who took Kahoot tests. This pattern suggests that while Socrative's gamified and interactive format can significantly engage and motivate students, it may also increase anxiety, especially among those who are less familiar or comfortable with such digital tools. Factors such as time constraints, leader boards visible to everyone, and immediate feedback might be the reasons for this increased anxiety. These results illustrate that while Socrative effectively engages and motivates students, it may also increase anxiety compared to traditional methods. This is consistent with the notion that while gamified systems enhance engagement and motivation, they can also introduce anxiety and challenges that need to be managed for a smooth learning experience (Adkins-Jablonsky et al., 2021; Han & Keskin, 2016; Holmes, 2019).

5.1.6. Conclusions on the Sixth Sub-Problem

The qualitative findings on students' views of paper-based tests highlight that "Challenges and Anxiety" was the most frequently coded theme. According to Vygotsky's Zone of Proximal Development (ZPD) theory, learning occurs most effectively when students engage in tasks slightly beyond their current abilities, with appropriate support and guidance. This aligns with the high prevalence of anxiety and challenges reported by students, suggesting that paper-based tests push students to engage in higher-order thinking and problem-solving, fostering their cognitive development within their ZPD (Vygotskiĭ & Cole, 1978). The quantitative data supports this, showing that students who received formative assessments with the paper and pencil method had the highest average achievement score, compared to those using Socrative and Kahoot. This indicates that while paper-based tests may induce anxiety, they simultaneously promote deeper learning and comprehension, resulting in higher academic achievement (Poon, 2013). This connection underscores the effectiveness of traditional assessment methods in enhancing student performance by challenging their cognitive capabilities within a structured and supportive framework.

"Learning and Comprehension" is the second most frequently coded theme for students who took paper-based formative tests, which confirms the ZPD theory from another aspect, as the challenges related to paper-based formative tests led to more learning and comprehension. This indicates that students not only recognized the challenges associated with these tests but also appreciated the educational value they provided. According to student responses, paper-based assessments were viewed as essential tools for reinforcing and consolidating knowledge, allowing students to see their progress and identify areas needing improvement. the combination of qualitative and quantitative findings, along with supporting literature, suggests

that paper-based formative tests not only challenge students within their ZPD but also enhance learning and comprehension, leading to higher academic achievement.

Only a small percentage of participants found paper-based assessments engaging or entertaining, according to the qualitative data. This emphasizes how important it is to make exams more engaging and interactive in order to possibly boost student engagement. Gamified student response systems (SRS), which have been demonstrated to improve the learning experience by introducing game-like aspects that make assessments enjoyable and engaging, are one efficient way to accomplish this. According to research, students' motivation, focus, and general classroom dynamics can all be much enhanced by using gamified SRS tools like Kahoot and Socrative (Bicen & Kocakoyun, 2017; Gündüz & Akkoyunlu, 2020; Wang et al., 2017). These methods can break up the monotony of traditional assessments and keep students actively engaged in the learning process since they offer instant feedback and foster a competitive yet fun environment. Educators can increase student motivation and engagement by incorporating gamified SRS into evaluation procedures. This will make learning more dynamic and efficient (Huang & Soman, 2013; Tan & Saucerman, 2017).

Concerns or considerations about the technical aspects of paper-based testing (like formatting and readability) affect a minority of students. Addressing these technical issues could improve the overall testing experience. The least concern relates to how paper-based tests affect classroom dynamics. This might include how tests influence interactions among students or between students and teachers, suggesting this is a lesser concern overall but still worth considering for fostering a supportive learning environment. This could also indicate to the need to use gamified student response systems as one way of improving classroom dynamics.

5.2. Recommendations

The research aimed to investigate the effects of gamified student response systems (SRS) on students' achievement, motivation, and anxiety levels in the context of teaching English. Despite the increasing integration of digital tools and gamified platforms like Kahoot and Socrative in educational settings, there has been a gap in understanding their comprehensive impact on various student outcomes. This study addresses this gap by providing empirical evidence on the benefits and challenges associated with these tools. The findings reveal insights into how different formative assessment methods influence student experiences and outcomes. Based on these findings, the following recommendations are proposed to enhance the

effectiveness of both traditional and gamified assessments in educational practice, aiming to create a balanced and supportive learning environment that caters to diverse student needs.

The research indicated that students achieved higher scores on paper-based assessments while enjoying enhanced engagement through gamified SRS, demonstrating a need for diverse assessment strategies. Educators should utilize both traditional paper-based assessments and gamified student response systems (SRS) like Kahoot and Socrative to cater to different learning preferences and needs. This approach can balance the benefits of structured learning with engaging and interactive experiences.

Observations revealed that while gamified SRS tools fostered significant student engagement, they also contributed to increased levels of stress and anxiety among some participants. Since gamified SRS tools can increase anxiety due to their competitive nature and time constraints, educators should provide adequate support and create a low-pressure environment to reduce these effects.

Data showed that the use of gamified SRS alongside traditional methods led to improved attention and participation rates in class, underlining their value in a comprehensive educational strategy. Instructional designers should consider incorporating gamified student response systems into the curriculum to enhance student engagement and motivation. These tools should be designed to complement traditional assessment methods and provide a balanced approach to learning.

Findings of this study results suggest that while immediate benefits of gamified SRS are evident, the long-term effects on student outcomes remain unclear, highlighting the need for extended research. Researchers should undertake long-term studies to evaluate the sustained impact of gamified student response systems on student achievement, motivation, and anxiety levels. These studies can provide deeper insights into the effectiveness and limitations of these tools over time.

Initial studies conducted in a limited demographic showed varying results, suggesting that the impact of gamified SRS may differ across different educational contexts and student backgrounds. Therefore, the research on gamified SRS should be expanded to include diverse educational settings and student populations to understand how different groups respond to gamified and traditional assessments. This can help in identifying best practices and potential areas for improvement.

Feedback from students and teachers alike confirmed that while gamified SRS significantly increased enjoyment, their educational effectiveness was maximized only when properly integrated with pedagogical goals. Overall, while implementing gamified student response systems, educators should ensure a balance between fun and educational value, promoting a positive and effective learning environment.

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APPENDICES

APPENDIX 1. *Achievement test Content Validity Form*

No	Item	Skill+ Learning Outcome	Expert View
1	Some new clothing styles _____ quickly, and suddenly it seems that everybody is wearing them. spread contribute express identify	Vocabulary	☒ Essential ☐ Useful, not essential ☐ Not necessary
2	Businesses spend a lot of money on ads to tell consumers about their products. But the best kind of advertising is something that money cannot buy. Many consumers do not like paid advertisements. They try to pay no attention to them. They do not want ads on their computer screens, and sometimes they buy special software to block them. When these consumers want to know about a product, they prefer to hear about it from their friends. They do pay attention to their friends' opinions. These are the people they trust. When their friends say good things about a product, it is word-of-mouth advertising. For a business, it is the most valuable kind of advertising there is. What is the main idea of this text? Many consumers avoid looking at or listening to ads because ads are usually boring. Businesses want word-of-mouth advertising because consumers trust their friends' advice. It's expensive for businesses to advertise, but they need to tell consumers about their products. The best way to advertise a product is social media.	Reading Comprehension	☒ Essential ☐ Useful, not essential ☐ Not necessary
3	Establishing a business is always a big _____, so you'll need a good business plan. concept attitude challenge source	Vocabulary	☒ Essential ☐ Useful, not essential ☐ Not necessary
4	When a company can get people talking about a product, that buzz will contribute ____ the product's popularity. in on at to	Grammar	☒ Essential ☐ Useful, not essential ☐ Not necessary
5	Sleep research has shown how sleep affects learning. _____, one study showed how sleep helped college students perform better on a test. The study involved 102 students who had never studied economics. First, the students were divided into four groups. One group watched an economics lecture and took a test on it _____ they finished. The second group watched the lecture but did not take the test right away. A whole week passed before they took it. Choose the correct words to fill in the gaps. For example – before As soon as – in addition For example – as soon as Before – while	Writing Skills	☒ Essential ☐ Useful, not essential ☐ Not necessary
6	Tom has a lot of friends because he has good _____ skills.	Vocabulary	☒ Essential ☐ Useful, not essential

	recommend social research advertisement		☐ Not necessary
7	This week our class _____ the influence of the internet on newspapers. is discussing discuss discussed has discuss	Grammar	☒ Essential ☐ Useful, not essential ☐ Not necessary
8	Many music stores _____ these days because most people buy their music online. close closed has closed are closing	Grammar	☒ Essential ☐ Useful, not essential ☐ Not necessary
9	Babies _____ bright colors and will turn toward them. establish consider encourage notice	Vocabulary	☒ Essential ☐ Useful, not essential ☐ Not necessary
10	"*Restating*" means …. giving some ideas about something someone said. writing something again in a different way. writing about the different ideas. repeating the same things with the same words.	Writing Skills	☒ Essential ☐ Useful, not essential ☐ Not necessary
11	What is the best restatement of this sentence: *"Thousands of people came to the event to learn more about the business the company was doing. "* Some people came to the meeting to find more about the company. Many interested people came to hear about how the business succeeded. Hundreds of thousands of people came to hear about the company's products. A lot of people came to learn about the company's success story.	Writing Skills	☒ Essential ☐ Useful, not essential ☐ Not necessary
12	Which one of the below is a brainstorming strategy? Checking your writing for grammar mistakes. Deciding on a topic right away. Writing every idea that you think of. Writing down only your best ideas.	Writing Skills	☒ Essential ☐ Useful, not essential ☐ Not necessary
13	Which one of the sentences below can be the main idea of a paragraph? In every country, there are rules about how to behave. Most of these rules are not written down. People in the Asian countries try not to touch people that they don't know. You should be careful not to make noise in a restaurant.	Writing Skills	☒ Essential ☐ Useful, not essential ☐ Not necessary
14	The other day I went to see a friend of mine at his office. When I got to his desk, he was already talking with another person. I didn't want to _____ their conversation, so I waited and I looked around his office. take part interrupt advice avoid	Vocabulary	☒ Essential ☐ Useful, not essential ☐ Not necessary
15	The children _____ very quiet while they are watching TV. are	Grammar	☒ Essential ☐ Useful, not essential ☐ Not necessary

	is has were		
16	Information about manners _____ available on the internet. are have is has	Grammar	☒ Essential ☐ Useful, not essential ☐ Not necessary
17	New Manners for the Internet Age Now that so much communication is online, a lot of things have changed. Many of the things we think of as good manners are just not used any more. Few people now take the time to write a letter in their best handwriting. Greeting cards are getting rarer - people prefer to send a text message or write a post on social media. What does the writer suggest about online communication? Some people would rather write a letter. It is more common now than the old method. Some people think this is bad manners. People prefer this to receiving an email.	Reading Comprehension	☒ Essential ☐ Useful, not essential ☐ Not necessary
18	Can you imagine being paralyzed, unable to move your legs or take a step? When a person's lower body is paralyzed, they must use a wheelchair. Their life is forever changed, and the performance of everyday task is very difficult. When you are paralyzed, you …. are very sick cannot use a wheelchair cannot move a part of your body must take pills everyday	Reading Comprehension	☒ Essential ☐ Useful, not essential ☐ Not necessary
19	Jeff _____ take the train than ride the bus. would like to would like would rather would rather to	Grammar	☒ Essential ☐ Useful, not essential ☐ Not necessary
20	Technology for Better Performance at Work There is one topic that many people search online: how to do better at work. People are under pressure at work to do more in less time. It doesn't matter if you are a cashier, an accountant, or a manager, you want to perform better. However, the type of work you do will influence the type of technology you might use. Some apps will help you if you work in an office. One popular type of app is for group chats. A group chat is a way to communicate quickly online with a group of people. For example, perhaps you are working on a project with people in different locations. You have a quick question for the group. For this situation, there's no reason to call a meeting, and you don't want to write another email. With a group chat you can just send a quick chat message. In few minutes, you have your answer. You can keep working on your project without delay. One advantage of a group chat is that it gives you a way to solve a problem without using email. It is also good for urgent messages. According to the text, _____ makes it easier to communicate quickly with several coworkers if you have an urgent question. An email account A group chat app	Reading Comprehension	☒ Essential ☐ Useful, not essential ☐ Not necessary

	An online meeting app A mobile banking app		
21	Someday, I hope to _____ this painting to my children. It's made by my grandmother. lifestyle depend on sell pass down	Vocabulary	☒ Essential ☐ Useful, not essential ☐ Not necessary
22	Jenny has no job and she wants to buy a house. I don't think she is being _____. realistic talented responsibility enthusiasm	Vocabulary	☒ Essential ☐ Useful, not essential ☐ Not necessary
23	When we make a conclusion, we _____ think deeply about a topic write down all ideas we have make a decision using information we have get information from different sources	Writing Skills	☒ Essential ☐ Useful, not essential ☐ Not necessary
24	I was surprised when I received the _____ grade in the class. better best goodest good	Grammar	☒ Essential ☐ Useful, not essential ☐ Not necessary
25	Genealogy Genealogy, finding out about your family history, is one of the most popular hobbies in Europe. There seems to have been an explosion of interest in tracing our ancestry recently, and across the continent people are discovering their roots. Some of these are people who were adopted and are trying to find their biological parents, but many are driven by a chance to learn more about where they fit in to their family's past. Genealogy _____ is only useful for biological parents. has suddenly become very popular. is mainly for people who were adopted. appeals to a small number of people.	Reading Comprehension	☒ Essential ☐ Useful, not essential ☐ Not necessary
26	I think Paris _____ than New York. more beautiful beautifuller most beautiful the more beautiful	Grammar	☒ Essential ☐ Useful, not essential ☐ Not necessary
27	When you skim a text, you _____ write down key words look for a specific word read it carefully read it quickly	Reading Skills	☒ Essential ☐ Useful, not essential ☐ Not necessary
28	Have you ever cooked a whole turkey? If you haven't don't worry. It's not as hard as you think. Here are the basic steps. _____, buy a fresh or frozen whole turkey. _____ you do anything else, make sure that the turkey is defrosted. It shouldn't be frozen when it goes in the oven. _____ the turkey defrosts, get out butter or oil, salt and spices. _____, you will use these for the outside of the turkey. First – Then – While – Next	Writing Skills	☒ Essential ☐ Useful, not essential ☐ Not necessary

	Before – While – Later – When First – Before – While – Later When – Before – Then – Next		
29	Complete the sentence She eats vegetables _____. to wake up. to stay healthy to stay warm. to see the animals.	Grammar	☒ Essential ☐ Useful, not essential ☐ Not necessary
30	I was very _____ with the instructions for my new coffee maker. They were very confusing and I wasted a lot of time. excited eventually thrilled frustrated	Vocabulary	☒ Essential ☐ Useful, not essential ☐ Not necessary
31	I use pieces of wood _____ necklaces and earing. to make making makes to made	Grammar	☒ Essential ☐ Useful, not essential ☐ Not necessary
32	Last night I was _____ to sleep because I was worried about my exam. benefit generous unable relax	Vocabulary	☒ Essential ☐ Useful, not essential ☐ Not necessary
33	Be sure to _____ your trash after you finish your lunch. put on throw away pick up watch out	Vocabulary	☒ Essential ☐ Useful, not essential ☐ Not necessary
34	Paula made a lot of new friends while she _____ in France. studied was studying was study is studying	Grammar	☒ Essential ☐ Useful, not essential ☐ Not necessary
35	Because it is a natural national park, visitors see a lot of _____ there. wildlife ancient history buildings	Vocabulary	☒ Essential ☐ Useful, not essential ☐ Not necessary
36	Greece is famous for its _____ civilizations. natural delicious expensive ancient	Vocabulary	☒ Essential ☐ Useful, not essential ☐ Not necessary
37	When you summarize a main idea, you _____. describe all the details restate the examples describe the important points write longer than the main text	Critical Thinking	☒ Essential ☐ Useful, not essential ☐ Not necessary
38	Most people voted _____ the new system. in common with contribute to in response to in favor of	Vocabulary	☒ Essential ☐ Useful, not essential ☐ Not necessary
39	Complete the sentence A pandemic is when a disease_____.	Comprehension	☒ Essential ☐ Useful, not essential

	appears in a few people in winter work with others to achieve a goal keep a sick person away from others spreads all over the world very quickly		☐ Not necessary
40	Chicken pox is an extremely _____ disease. After my brother caught it from a child at school, my sister and I both got it. symptom contagious volunteer emergency	Vocabulary	☒ Essential ☐ Useful, not essential ☐ Not necessary
41	What is the appropriate way to close a formal email to your department head? a) Warm wishes b) Cheers c) Best regards d) Thanks a lot	Writing	☒ Essential ☐ Useful, not essential ☐ Not necessary
42	She has a passion for literature; _____, she enjoys attending book clubs and literary events. a) Consequently b) In addition c) Although d) Nonetheless	Writing	☒ Essential ☐ Useful, not essential ☐ Not necessary
43	Which opening sentence is suitable for a narrative essay about a life-changing experience? a) In this essay, I'll explore a life-changing event. b) Let me tell you about a moment that changed my life. c) A life-altering experience is the focus of my essay. d) Life changing experiences are important.	Writing	☒ Essential ☐ Useful, not essential ☐ Not necessary
44	After the accident, it took her a while to ___ her fear of driving. a) get on b) get over c) get around d) get through	Vocabulary	☒ Essential ☐ Useful, not essential ☐ Not necessary
45	Speaker 1: I think the movie was fantastic! Speaker 2: Yes, _____. I particularly enjoyed the plot twists. a) it's terrible b) it's average c) I don't think so d) I couldn't agree more	Writing	☒ Essential ☐ Useful, not essential ☐ Not necessary

***APPENDIX 2**. Table of Specifications for Achievement Test*

No	Item	AK	Skill	Learning Outcome
1	Businesses spend a lot of money on ads to tell consumers about their products. But the best kind of advertising is something that money cannot buy. Many consumers do not like paid advertisements. They try to pay no attention to them. They do not want ads on their computer screens, and sometimes they buy special software to block them. When these consumers want to know about a product, they prefer to hear about it from their friends. They do pay attention to their friends' opinions. These are the people they trust. When their friends say good things about a product, it is word-of-mouth advertising. For a business, it is the most valuable kind of advertising there is. **What is the main idea of this text?** a) Many consumers avoid looking at or listening to ads because ads are usually boring. b) Businesses want word-of-mouth advertising because consumers trust their friends' advice. c) It's expensive for businesses to advertise, but they need to tell consumers about their products. d) The best way to advertise a product is social media.	b	Reading Comprehension	Understand the main idea of a text
2	**Speaker 1**: I think the movie was fantastic! **Speaker 2**: Yes, _____. I particularly enjoyed the plot twists. a) it's terrible b) it's average c) I don't think so d)I couldn't agree more	d	Comprehension	Identify agreeing and disagreeing expressions
3	Establishing a business is always a big _____, so you'll need a good business plan. a) concept b) attitude c) challenge d) source	c	Vocabulary	Recognize and use B1 level vocabulary about work life

4	When a company can get people talking about a product, that buzz will contribute ____ the product's popularity. a) in b) on c) at d) to	d	Vocabulary	Recognize and use B1 level vocabulary about work life
5	Sleep research has shown how sleep affects learning. _____, one study showed how sleep helped college students perform better on a test. The study involved 102 students who had never studied economics. First, the students were divided into four groups. One group watched an economics lecture and took a test on it _____ they finished. The second group watched the lecture but did not take the test right away. A whole week passed before they took it. **Choose the correct words to fill in the gaps.** a) For example – before b) As soon as – in addition c) For example – as soon as d) Before – while	c	Writing Skills	Using time connectors and introducing examples in writing
6	This week our class _____ the influence of the internet on newspapers. a) is discussing b) discuss c) discussed d) has discuss	a	Grammar	Using present continuous tense
7	Babies _____ bright colors and will turn toward them. a) establish b) consider c) encourage d) notice	d	Vocabulary	Recognize and use B1 level vocabulary
8	"*Restating*" means …. a) giving some ideas about something someone said. b) writing something again in a different way. c) writing about the different ideas. d) repeating the same things with the same words.	b	Writing Skills	Identify the definition of restating as "writing something again in a different way."

9	What is the best restatement of this sentence: *"Thousands of people came to the event to learn more about the achievements of the company."* a) Some people came to the meeting to find more about the company. b) Many interested people came to hear about how the business succeeded. c) Hundreds of thousands of people came to hear about the company's products. d) A lot of people came to learn about the company's success story.	b	Writing Skills	Identify the main idea and key details in each sentence.
10	Which one of the below is a brainstorming strategy? a) Checking your writing for grammar mistakes. b) Deciding on a topic right away. c) Writing every idea that you think of. d) Writing down only your best ideas.	c	Writing Skills	Identify different brainstorming techniques
11	Which one of the sentences below can be the main idea of a paragraph? a) In every country, there are rules about how to behave. b) Most of these rules are not written down. c) People in the Asian countries try not to touch people that they don't know. d) You should be careful not to make noise in a restaurant.	a	Writing Skills	Identify the main idea of a paragraph from given sentences.
12	The other day I went to see a friend of mine at his office. When l got to his desk, he was already talking with another person. I didn't want to _____ their conversation, so I waited and I looked around his office. a) take part b) interrupt c) advice d) avoid	b	Vocabulary	Recognize and use B1 level vocabulary
13	Information about manners _____ available on the internet. a) are b) have c) is	c	Grammar	Understand subject-verb agreement in sentences and apply it appropriately.

	d) has			
14	Can you imagine being paralyzed, unable to move your legs or take a step? When a person's lower body is paralyzed, they must use a wheelchair. Their life is forever changed, and the performance of everyday task is very difficult. **When you are paralyzed, you ….** a) are very sick b) cannot use a wheelchair c) cannot move a part of your body d) must take pills everyday	c	Reading Comprehension	Understand B1 level text
15	Jeff _____ take the train than ride the bus. a) would like to b) would like c) would rather d) would rather to	c	Grammar	Use modal verbs to express preferences
16	Someday, I hope to _____ this painting to my children. It's made by my grandmother. a) lifestyle b) depend on c) sell d) pass down	d	Vocabulary	Understand and use B1 level phrasal verbs
17	Jenny has no job and she wants to buy a house. I don't think she is being _____. a) realistic b) talented c) responsibility d) enthusiasm	a	Vocabulary	Recognize and use B1 level vocabulary
18	When we make a conclusion, we _____ a) think deeply about a topic b) write down all ideas we have c) make a decision using information we have d) get information from different sources	C	Writing Skills	Understand the process of making conclusions based on available information.
19	Genealogy, finding out about your family history, is one of the most popular hobbies in Europe. There seems to have been an explosion of interest in tracing our ancestry recently, and across the continent people are discovering their roots. Some of these are people who were adopted and are trying to find their biological parents, but	b	Reading Comprehension	Understand B1 level text and make inferences

	many are driven by a chance to learn more about where they fit in to their family's past. **Genealogy _____** a) is only useful for biological parents. b) has suddenly become very popular. c) is mainly for people who were adopted. d) appeals to a small number of people.			
20	When you skim a text, you _____ a) write down key words b) look for a specific word c) read it carefully d) read it quickly	d	Reading Skills	Define and apply skimming as a reading strategy
21	Have you ever cooked a whole turkey? If you haven't don't worry. It's not as hard as you think. Here are the basic steps. _____, buy a fresh or frozen whole turkey. _____ you do anything else, make sure that the turkey is defrosted. It shouldn't be frozen when it goes in the oven. _____ the turkey defrosts, get out butter or oil, salt and spices. _____, you will use these for the outside of the turkey. a) First – Then – While – Next b) Before – While – Later – When c) First – Before – While – Later d) When – Before – Then – Next	c	Writing Skills	Sequence a set of instructions logically and grammatically using appropriate transitional words.
22	I was very _____ with the instructions for my new coffee maker. They were very confusing and I wasted a lot of time. a) excited b) eventually c) thrilled d) frustrated	d	Vocabulary	Recognize and use adjectives to describe emotions
23	Be sure to _____ your trash after you finish your lunch. a) put on b) throw away c) pick up d) watch out	b	Vocabulary	Understand and apply B1 level phrasal verbs
24	Paula made a lot of new friends while she _____ in France. a) studied	b	Grammar	Use past continuous tense to describe past actions

	b) was studying c) was study d) is studying			
25	Because it is a natural national park, visitors see a lot of _____ there. a) wildlife b) ancient c) history d) buildings	a	Vocabulary	Recognize and use B1 level vocabulary
26	Most people voted _____ the new system. a) in common with b) contribute to c) in response to d) in favor of	d	Vocabulary	Understand and use B1 level phrasal verbs
27	Chicken pox is an extremely _____ disease. After my brother caught it from a child at school, my sister and I both got it. a) symptom b) contagious c) volunteer d) emergency	b	Vocabulary	Recognize and use B1 level vocabulary about medical situations
28	What is the appropriate way to close a formal email to your department head? a) Warm wishes b) Cheers c) Best regards d) Thanks a lot	c	Writing	Recognize appropriate closing phrases for formal written communication.
29	Which opening sentence is suitable for a narrative essay about a life-changing experience? a) In this essay, I'll explore a life-changing event. b) Let me tell you about a moment that changed my life. c) A life-altering experience is the focus of my essay. d) Life changing experiences are important.	b	Writing	Identify appropriate opening sentences for narrative essays
30	After the accident, it took her a while to ___ her fear of driving. a) get on b) get over c) get around d) get through	b	Vocabulary	Understand and use B1 level phrasal verbs

APPENDIX 3. *Motivation and Attitude Scale*

		StronglyDisagree	Disagree	Slightly Agree	Agree	Strongly Agree
1	Studying English is important because other people will respect me more if I know English.					
2	I plan to learn as much English as possible.					
3	I hate English.					
4	I think that learning English is dull.					
5	I have a strong desire to know all aspects of English.					
6	I wish I were fluent in English.					
7	I make a point of trying to understand all the English I see and hear.					
8	I don't bother checking my assignments when I get them back from my English teacher.					
9	Studying English is important because I will need it for my career.					
10	Learning English is really great.					
11	I want to learn English so well that it will become natural to me.					
12	Learning English is a waste of time.					
13	I'm losing any desire I ever had to know English.					
14	I tend to give up and not pay attention when I don't understand my English teacher's explanation of something.					
15	Knowing English isn't really an important goal in my life.					
16	Studying English is important because it will make me moreeducated.					
17	If it were up to me, I would spend all of my time learning English.					
18	I would like to learn as much English as possible.					
19	I keep up to date with English by working on it almost every day.					
20	I would rather spend my time on subjects other than English.					
21	When I am studying English, I ignore distractions and pay attention to my task.					
22	To be honest, I really have no desire to learn English.					
23	When I have a problem understanding something in my Englishclass, I always my teacher for help.					
24	I put off my English homework as much as possible.					
25	I sometimes daydream about dropping English.					
26	Studying English is important because it will be useful in getting a good job.					
27	I really enjoy learning English.					

28	I really work hard to learn English.					
29	I don't pay much attention to the feedback I receive in my English class.					
30	English is a very important part of the school programme.					
31	I can't be bothered trying to understand the more complex aspects of English.					
32	I love learning English.					
33	I haven't any great wish to learn more than the basics of English.					
34	When I leave school, I will give up the study of English because I am not interested in it.					

APPENDIX 4. *Foreign Language Classroom Anxiety Scale*

Nickname **Age** **Gender M / F** **Below you can see some statements related to the foreign language classroom anxiety scale. Please, read each statement very carefully and state how much you agree with the statements that ranges from " I strongly agree" to "I strongly disagree".**	Stronglyagree	Agree	Neither agree nordisagree	Disagree	Stronglydisagree
1. I never feel quite sure of myself when I am speaking in my foreign language class.					
2. I don't worry about making mistakes.					
3. I tremble when I know that I'm going to be called on in language class.					
4. It frightens me when I don't understand what the teacher is saying in the foreign language class.					
5. It wouldn't bother me at all to take more foreign language class.					
6. During language class, I find myself thinking about things that have nothing to do with the course.					
7. I keep thinking that other students are better at languages than I am.					
8. I am usually at ease during tests in my language class.					
9. I start to panic when I have to speak without preparation in language class.					
10. I worry about the consequences of failing my foreign language class.					
11. I don't understand why some people get so upset over foreign language class.					

12. In language class, I can get so nervous I forget things I know.					
13. It embarrasses me to volunteer answers in my language class.					
14. I would not be nervous speaking the foreign language with native speakers.					
15. I get upset when I do not understand what the teacher is correcting.					
16. Even if I am well prepared for language class, I feel anxious about it.					
17. I often feel like not going to my language class.					
18. I feel confident when I speak in foreign language class.					
19. I am afraid that my language teacher is ready to correct every mistake I make.					
20. I can feel my heart pounding when I am going to be called on in language class.					
21. The more I study for a language test, the more confused I get.					
22. I do not feel pressure to prepare very well for language class.					
23. I always feel that the other students speak the foreign language better that I do.					
24. I feel very self-conscious about speaking the foreign language in front of other students.					
25. Language class moves so quickly I worry about getting left behind.					
26. I feel more tense and nervous in my language class than in my other classes.					
27. I get nervous and confused when I am speaking in my language class.					
28. When I'm on my way to language class, I feel very sure and relaxed.					
29. I get nervous when I don't understand every word the language teacher says.					
30. I feel overwhelmed by the number of rules you have to learn to speak the foreign language.					
31. I am afraid that other students will laugh at me when I speak the foreign language.					
32. I would probably feel comfortable around native speakers of the foreign language.					
33. I get nervous when the language teacher asks questions which I haven't prepared in advance.					

APPENDIX 5. *Turkish version of Motivation and Anxiety Scales Combined*

Değerli Katılımcı, İngilizce öğrenmeye ilişkin bir görüş ve yargı bildiren aşağıdaki cümleleri okuyunuz. Bu görüşlere ne ölçüde katıldığınızı veya katılmadığınızı sağ tarafta bulunan sütunda yanıt olarak verilen beş görüşten birini işaretleyerek size verilen optik forma kodlayınız. Seçenekler "tamamen katılıyorum", "katılıyorum", "kısmen katılıyorum", "katılmıyorum", "hiç katılmıyorum" şeklinde verilmiştir. Lütfen duygu ve düşüncelerinizi en iyi ifade ettiğini düşündüğünüz, kendinize en uygun seçeneği işaretleyiniz. Araştırmaya gösterdiğiniz katkı için teşekkürlerimi sunarım. Öğr. Gör. Ümit YAKAR İnönü Üniversitesi Yabancı Diller Yüksekokulu		Kesinlikle katılmıyorum	Katılmıyorum	Kısmen katılıyorum	Katılıyorum	Kesinlikle katılıyorum
1	İngilizce öğrenmek önemlidir çünkü İngilizce bilirsem diğer insanlar bana daha fazla saygı duyarlar.					
2	İngilizceyi mümkün olduğunca daha iyi öğrenmeyi planlıyorum.					
3	İngilizceden nefret ediyorum.					
4	Bence İngilizce öğrenmek sıkıcıdır.					
5	İngilizceyi her yönüyle öğrenmek istiyorum.					
6	Keşke İngilizceyi daha akıcı konuşabilsem.					
7	Gördüğüm ve duyduğum İngilizce ifadelerin tümünü anlamaya gayret ederim.					
8	İngilizce öğretmenimden geri aldığımda ödevlerimi kontrol etmek istemem.					
9	İngilizce öğrenmek önemlidir çünkü ileride kariyerim için gereklidir.					
10	İngilizce öğrenmek gerçekten güzel bir şeydir.					
11	İngilizceyi mümkün olan en iyi şekilde öğrenmek istiyorum.					
12	İngilizce öğrenmek zaman kaybıdır.					
13	İngilizce öğrenmek için önceden sahip olduğum isteklerim yok oluyor.					
14	İngilizce öğretmenlerim bir şeyi açıkladıklarında anlamazsam dikkatim dağılır ve dinlememeye başlarım.					
15	İngilizce öğrenmek hayatımda önemli bir amaç değildir.					
16	İngilizce öğrenmek önemlidir bu sayede daha eğitimli bir kişi olurum.					
17	Bana kalsa bütün zamanımı İngilizce öğrenmeye ayırırım.					
18	Mümkün olduğunca daha fazla İngilizce öğrenmeyi istiyorum.					
19	Hemen hemen her gün İngilizce çalışarak bu konuda güncel kalırım.					
20	İngilizce dışında diğer derslere/konulara daha fazla zaman ayırmayı tercih ederim.					
21	İngilizce çalışırken dikkat dağıtan şeyleri görmezden gelirim ve işime odaklanırım.					
22	Dürüst olmak gerekirse İngilizce öğrenmeye karşı gerçekten bir isteğim yok.					
23	İngilizce dersimde bir şeyi anlamadığımda her zaman öğretmenimden yardım isterim.					
24	İngilizce ödevlerimi mümkün olduğunca ertelerim.					

25	Bazen İngilizce dersini bırakmayı hayal ederim.					
26	İngilizce öğrenmek önemlidir çünkü iyi bir iş bulmak için gereklidir.					
27	İngilizce öğrenmeyi gerçekten seviyorum.					
28	İngilizce öğrenmek için gerçekten çok çaba harcıyorum.					
29	İngilizce dersinde bana verilen geribildirimlere pek dikkat etmem.					
30	İngilizce, öğrenim hayatımın önemli bir bölümünü oluşturur.					
31	İngilizcenin daha karmaşık yönlerini anlamaya çalışmam.					
32	İngilizce öğrenmek hoşuma gidiyor.					
33	İngilizcenin temellerinden daha fazlasını öğrenmek için çok istek duymuyorum.					
34	Bu bölümü bitirdiğim zaman İngilizce çalışmayı bırakacağım çünkü İngilizceye karşı bir ilgi duymuyorum.					
35	Yabancı dil dersinde konuşurken hiçbir zaman kendimden çok emin olamam.					
36	Yabancı dil dersinde hata yapmaktan endişe etmem.					
37	Yabancı dil dersinde bana söz verileceği zaman heyecandan titrerim.					
38	Öğretmenin yabancı dilde söylediklerini anlayamamak beni korkutur.					
39	Daha fazla yabancı dil dersi almak beni rahatsız etmez.					
40	Yabancı dil dersinde kendimi dersle ilgisi olmayan konuları düşünürken bulurum.					
41	Diğer öğrencilerin dil konusunda benden daha iyi olduklarını düşünürüm.					
42	Dil dersi sınavlarında genellikle rahatımdır.					
43	Dil dersinde hazırlıksız konuşmam gerektiğinde panik olurum.					
44	Yabancı dil derslerinden kaldığım takdirde oluşacak sonuçlar yüzünden endişelenirim.					
45	Yabancı dil derslerinin neden bazı insanların keyfini kaçırdığını anlamıyorum.					
46	Yabancı dil derslerinde o kadar tedirgin olurum ki bildiklerimi de unuturum.					
47	Yabancı dil dersinde sorulara gönüllü olmak beni utandırır.					
48	Ana dili yabancı olanlarla konuşurken tedirgin olmam.					
49	Öğretmenin hangi yanlışı düzelttiğini anlamadığım zaman üzülürüm.					
50	Dil dersine çok iyi hazırlansam bile derste endişelenirim.					
51	Çoğu zaman içimden dil dersine girmek gelmez.					
52	Yabancı dil dersinde konuşurken kendime güvenirim.					
53	Yabancı dil öğretmenimin yaptığım her hatayı düzeltmeye hazır olması beni korkutur.					
54	Dil dersinde bana bir şey sorulacak diye yüreğim ağzıma gelir.					
55	Dil sınavında ne kadar çok çalışırsam o kadar çok kafam karışır.					
56	Dil dersine çok iyi hazırlanmak için üzerimde baskı hissetmem.					
57	Her zaman diğer öğrencilerin yabancı dili benden daha iyi konuştuklarını hissederim.					
58	Diğer öğrencilerin önünde yabancı dille konuşurken utanırım.					

59	Dil dersi öyle hızlı ilerliyor ki geride kalmaktan endişeleniyorum.					
60	Dil dersinde diğer derslere oranla daha gergin ve tedirgin olurum.					
61	Dil dersinde konuşurken tedirgin olurum ve kafam karışır.					
62	Dil dersime girerken, kendimden gayet emin olurum ve rahat hissederim.					
63	Dil öğretmeninin söylediği her sözü anlamadığımda tedirgin olurum.					
64	Yabancı bir dili konuşmak için öğrenilmesi gereken kuralların sayısı beni bunaltır.					
65	Yabancı dilde konuştuğumda diğer öğrencilerin bana gülmesinden korkarım.					
66	Büyük ihtimalle kendimi, yabancı dili ana dil olarak konuşan insanların yanında daha rahat hissederim.					
67	Dil öğretmeni daha önceden hazırlanmadığım sorular sorduğunda tedirgin olurum.					

APPENDIX 6. Focus Group Interview Questions

Kahoot	
1.	How would you describe your experience using Kahoot in the classroom?
2.	Which feature of Kahoot do you like the most and why?
3.	How do you think Kahoot affects your learning experience in the classroom?
4.	How do you find the effect of Kahoot activities on classroom atmosphere and participation?
5.	Do you think Kahoot activities increase your motivation to learn? How?
6.	How do you usually feel when you participate in Kahoot activities? Comfortable or nervous?
7.	What kind of emotions do you experience when competing or answering questions in Kahoot games?
8.	How does it feel to compete with other students in Kahoot activities?
9.	How does the anxiety or stress you experience in Kahoot games affect you? Do you put more effort or focus less?
10.	Have you ever experienced fear of giving the wrong answer or falling behind in Kahoot activities? How did this affect you?
Socrative	
1.	How would you describe your experience using Socrative in the classroom?
2.	Which feature of Socrative do you like the most and why?
3.	How do you think Socrative affects your learning experience in the classroom?
4.	How do you find the effect of Socrative activities on classroom atmosphere and participation?
5.	Do you think Socrative activities increase your motivation to learn? How?
6.	How do you usually feel when you participate in Socrative activities? Relaxed or nervous?
7.	What kind of emotions do you experience when competing or answering questions in Socrative games?
8.	How does it feel to compete with other students in Socrative activities?
9.	How does the anxiety or stress you experience in Socrative games affect you? Do you put more effort or focus less?
10.	Have you ever experienced fear of giving the wrong answer or falling behind in Socrative activities? How did this affect you?
Paper Test	
1.	What do you think about your experience of regular tests in the classroom?
2.	How do you find the effect of these tests on the classroom atmosphere?
3.	How do you usually feel during the tests? Relaxed or tense?
4.	How do you think the tests affect your learning experience in the classroom?
5.	Do you think the tests increase your motivation to learn? How?
6.	How would you describe your feelings in case of failure or difficulty in tests?
7.	Do you think the tests contribute to your learning process? How?
8.	Do you have any feedback about the format or content of the tests?
9.	Do you feel that the tests give you confidence in learning?

10. How do you think the tests help you to understand or achieve your learning objectives?

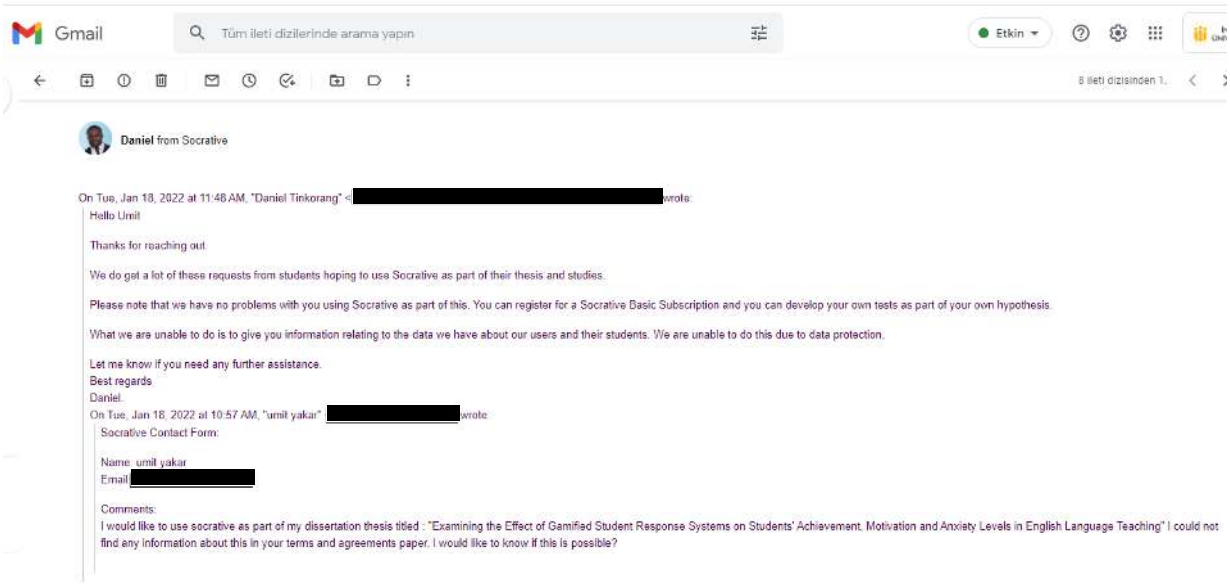
APPENDIX 7. *Ethical Board Report, Correspondence with Socrative and Kahoot*

T.C.
İNÖNÜ ÜNİVERSİTESİ
BİLİMSEL ARAŞTIRMA VE YAYIN ETİĞİ KURULU
Sosyal ve Beşeri Bilimler Bilimsel Araştırma ve Yayın Etik Kurulu

Oturum Tarihi : 29-12-2022	**Oturum Sayısı :** 24	**Karar Sayısı :** 33
Etik Açıdan Uygun		
Çalışma Adı	İngilizce Öğretiminde Oyunlaştırılmış Öğrenci Yanıt Sistemlerinin Öğrencilerin Başarı, Motivasyon ve Kaygı Düzeylerine Etkisinin İncelenmesi	
Araştırmacılar	Doktora Öğrencisi Ümit Yakar (Yürütücü) Prof.Dr. Süleyman Nihat Şad (Danışman)	
Başkan	Prof.Dr. Mehmet ÜSTÜNER	

Kurul Üyeleri

Kullanıcı Mehmet YILMAZ		Prof.Dr. Yusuf BATAR	
Prof.Dr. Mehmet ÖNAL		Prof.Dr. Mehmet GÜNGÖR	
Prof.Dr. Süleyman ÇALDAK		Prof.Dr. Nesrin SİS	
Prof.Dr. Lütfiye ÖZDEMİR			



Gmail Tüm ileti dizilerinde arama yapın Etkin

Daniel from Socrative

On Tue, Jan 18, 2022 at 11:48 AM, "Daniel Tinkorang" <[redacted] wrote:

Hello Umit

Thanks for reaching out.

We do get a lot of these requests from students hoping to use Socrative as part of their thesis and studies.

Please note that we have no problems with you using Socrative as part of this. You can register for a Socrative Basic Subscription and you can develop your own tests as part of your own hypothesis.

What we are unable to do is to give you information relating to the data we have about our users and their students. We are unable to do this due to data protection.

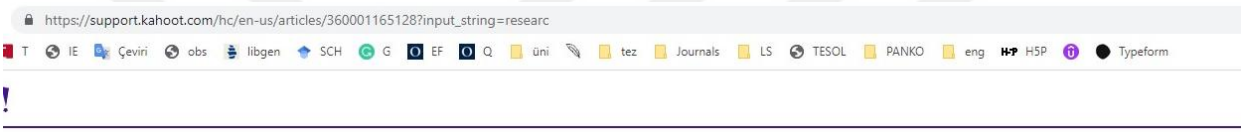
Let me know if you need any further assistance.
Best regards
Daniel.

On Tue, Jan 18, 2022 at 10:57 AM, "umit yakar" [redacted] wrote:

Socrative Contact Form:

Name: umit yakar
Email: [redacted]

Comments:
I would like to use socrative as part of my dissertation thesis titled : "Examining the Effect of Gamified Student Response Systems on Students' Achievement, Motivation and Anxiety Levels in English Language Teaching" I could not find any information about this in your terms and agreements paper. I would like to know if this is possible?



https://support.kahoot.com/hc/en-us/articles/360001165128?input_string=researc

T IE Çeviri obs libgen SCH G EF Q üni tez Journals LS TESOL PANKO eng H5P Typeform

Help and Support Center > About Kahoot! > Resources and programs

Search

Articles in this section

- Is there merchandise available?
- Does Kahoot! provide training or certification courses?
- Does Kahoot! have an ambassador program?
- Are there any resources for hosting events/training?
- Academic research on Kahoot!

Academic research on Kahoot!

Updated · 4 months ago

Is Kahoot! a part of research you're conducting? Whether it helps you to collect data, or it's the main focus of your research (double wow!), we're thrilled that you have included it in your project! We're really passionate about research ourselves, and we're sure that there are many interesting discoveries awaiting you ahead.

We often get questions about learning theories related to Kahoot! To give you some guidance, our Pedagogy K!rew put together a list of reads that can give you good food for thought. Of course, it's impossible to make a selection that would work for every researcher, from bachelor to Ph.D., and fit any topic, but this is a starting point.

Also, please, bear in mind that none of these sources can be referred to as "the origin" of Kahoot! pedagogy. There are certainly quite a few touchpoints, inspiring references and relevant examples, but hey, we're Kahoot! and we've never done it by the textbook! ;) If you're interested in Kahoot!'s own take on pedagogy, see some recommendations towards the end of this article.

APPENDIX 8. *Participant consent form*

GONULLU ONAM FORMU

Değerli Katılımcı,

Sizi Ümit Yakar tarafından yürütülen "İngilizce Öğretiminde Oyunlaştırılmış Öğrenci Yanıt Sistemlerinin Öğrencilerin Başarı, Motivasyon ve Kaygı Düzeylerine Etkisinin Incelenmesi" başlıklı araştırmaya davet ediyoruz. Araştırmada sizden tahminen 30-35 dakika ayırmanız istenmektedir. Araştırmaya sizin dışınızda tahminen 60 kişi katılacaktır. Bu çalışmaya katılmak tamamen **gönüllülük** esasına dayanmaktadır. Çalışmanın amacına ulaşması için sizden beklenen, bütün soruları eksiksiz, kimsenin baskısı veya telkini altında olmadan, size en uygun gelen cevapları içtenlikle verecek şekilde cevaplamanızdır. Bu formu okuyup onaylamanız, araştırmaya katılmayı kabul ettiğiniz anlamına gelecektir. Ancak, çalışmaya katılmama veya katıldıktan sonra herhangi bir anda çalışmayı bırakma hakkına da sahipsiniz. Bu çalışmadan elde edilecek bilgiler tamamen araştırma amacı ile kullanılacak olup kişisel bilgileriniz **gizli tutulacaktır**; ancak verileriniz yayın amacı ile kullanılabilir. Eğer araştırmanın amacı ile ilgili verilen bu bilgiler dışında şimdi veya sonra daha fazla bilgiye ihtiyaç duyarsanız araştırmacıya şimdi sorabilir veya [redacted] e-posta adresi ve [redacted] numaralı telefondan ulaşabilirsiniz.

Yukarıda yer alan ve araştırmadan önce katılımcıya verilmesi gereken bilgileri okudum ve katılmam istenen çalışmanın kapsamını ve amacını, gönüllü olarak üzerime düşen sorumlulukları anladım. Çalışma hakkında yazılı ve sözlü açıklama aşağıda adı belirtilen araştırmacı/araştırmacılar tarafından yapıldı. Bana, çalışmanın muhtemel riskleri ve faydaları sözlü olarak da anlatıldı. Kişisel bilgilerimin özenle korunacağı konusunda yeterli güven verildi.

Bu koşullarda söz konusu araştırmaya kendi isteğimle, hiçbir baskı ve telkin olmaksızın katılmayı kabul ediyorum.

Ad Soyadı
Imza
Tarih

APPENDIX 9. *Sample formative tests delivered on Kahoot, Socrative or Paper*

NAME :
CLASS :
DATE :

SRS 1
15 Questions

1. What is the term for places where individuals work together in a shared environment, often used in the text?

A Colleagues
B Coworking spaces
C Meetings
D Workstations

2. In the context of the unit, what does the term "facial expressions" refer to?

A The words people use
B The way people move their bodies
C The gestures people make
D The expressions on people's faces

3. Which term best describes the manner in which people communicate without words, as mentioned in the unit?

A Verbal communication
B Nonverbal communication
C Oral communication
D Written communication

4. What vocabulary is commonly associated with body language, as discussed in the text?

A Workplace
B Formal expressions
C Gestures
D Coworking

5. Choose the correct form of the verb to complete the sentence: "She usually _____ coffee in the morning."

A drinks
B is drinking
C drink
D drank

6. Identify the sentence with the correct use of a formal expression in email communication.

A Hey, what's up? Let's meet.
B I need your assistance regarding the project.
C Howdy! Can we have a chat?
D What's the plan for today?

7. According to the text "cityworks", what is the primary focus of coworking spaces?

A Individual work
B Networking
C Silence
D Collaboration

8. What is the main idea conveyed in the text about facial expressions?

A The importance of eye contact
B The role of smiles in communication
C How facial expressions convey emotions
D The significance of a firm handshake

9. Which sentence is an example of a formal expression suitable for an email?

A "I need your help with the report ASAP."
B "Hey! Can you assist me with the report?"
C "What's the deal with the report?"
D "Let's get together for the report."

10. Choose the correct greeting for a formal email.

A Hi [Name],
B Dear [Name],
C Hello [Name]!
D Greetings [Name],

11. In formal written communication, which closing phrase is appropriate?

A Cheers,
B Take care,
C See u,
D Best regards,

NAME :
CLASS :
DATE :

SRS 2
12 Questions

1. Establishing a business is always a big _____, so you'll need a good business plan.

A attitude
B source
C challenge
D concept

2. The _____ time I went skiing, I broke my leg. I'm not going again!

A first
B long
C over
D last

3. Sarah was studying for her exams _____ her roommate was watching TV in the living room.

A meanwhile
B as soon as
C afterward
D during

4. When a company can get people talking about a product, that buzz will contribute ____ the product's popularity.

A to
B in
C on
D at

5. The population showed _____ over time, falling from 300,000 to 150,000.

A growth
B a decrease
C increasing
D fell down

6. Some new clothing styles _____ quickly, and suddenly it seems that everybody is wearing them.

A express
B identify
C contribute
D spread

7. Solar energy is beginning to _____ coal and oil in many communities.

A recover
B benefit
C replace
D abandon

8. 

What are circadian rhythms?

A Decrease in body temperature overnight
B Body changes that happen every 24 hours
C Changes in body temperature and heart rate
D Physical activities that affect body rhythms

NAME :
CLASS :
DATE :

SRS 3
12 Questions

1. Which one is the right to do when writing a cover letter for a job application?

A send the same cover letter to all employers.
B make spelling or grammar mistakes.
C be short and to the point.
D write a 2 page cover letter

2. We have lived in Japan _____ eight years.

A since
B for
C just
D yet

3. Technology _____ jobs in many fields, including healthcare.

A has changed
B has changes
C changed
D changing

4. The company announced the sale of a new smart phone.

A made known the arrival of a guest
B present to an audience!
C made a formal public statement)
D became aware

5. The new software update _____ improves security features _____ enhances user interface design.

A Moreover/but
B not only/also
C not/also
D both/also

6. What is the primary purpose of a cover letter in a job application?

A To introduce yourself and express your interest in the position
B To list academic achievements
C To show your creativity and artistic skills
D To provide a detailed work history

7. Many music stores _____ these days because most people buy their music online.

A is closing
B closed
C has been closed
D are closing

8. When we make a conclusion, we _____

A think deeply about a topic
B make a decision using information we have
C get information from different sources
D write down all ideas we have

9. What is a common strategy for generating ideas during brainstorming?

A writing all ideas on a paper
B deciding on the topic
C ask friends
D watching videos

10. Some robots can _____ really difficult tasks that humans cannot do.

A refuse
B realize
C perform
D solve

NAME :
CLASS :
DATE :

SRS 4
13 Questions

1. It's important not to _____ others when they are sharing their thoughts.

A speak
B advise
C interrupt
D criticize

2. Information about parkour sport _____ available on our website.

A are
B is
C has
D was

3. In order to effectively restate a point in a paragraph, a writer should:

A use different words but convey the same meaning.
B repeat the exact words from the original statement.
C write about different ideas.
D introduce unrelated concepts for variety.

4. Restating is particularly useful in:

A avoiding a conclusion.
B confuse the reader.
C making key ideas clear.
D limiting the scope of the essay.

5. Cycling is great exercise. _____ get in good shape quickly, I think.

A You're going to
B You'll
C You are
D You

6. It's important to _____ the details in an exam.

A notice
B studying
C follow
D considers

7. What does "BRB" stand for?

A Better run buddy!
B Big red baloon
C Bring real bread
D Be right back.

8. What does "BTW" mean in texting?

A Between
B By the way
C Better
D Both wins

9. The customer was thrilled to discover that the store was offering a special _____ on electronics.

A deal
B trade
C cheap
D bargain

10. She never checks the _____ before she travels, so she often has the wrong clothes.

A reservation
B security
C forecast
D sights

GENİŞLETİLMİŞ TÜRKÇE ÖZET

8.1. Giriş

Sınıftaki bireylerin katılımını sağlamak eğitimciler için çoğu zaman zorlu bir görev olmuştur. Bu nedenle öğretmenler, öğrencilerin etkinliklere katılımını teşvik etmek ve onları sınıfta daha aktif olmaya motive etmek için ilgi çekici öğretim stratejileri kullanmaya çalışırlar. Öğrencilerin ilgisini çekmek için kullanılan en eski tekniklerden biri olan oyun yoluyla öğrenme ilk olarak askeri eğitimde kullanılmıştır (Bradshaw & Lowenstein, 2011). Csikszentmihalyi & LeFevre (1989), öğrenme sırasında zevk uyarıldığında insanların daha başarılı olduğunu belirtmektedir. Öğrencilerin öğrenmekten keyif alması için kullanılan eğitsel oyunlar, öğrencileri motive etmenin, becerileri güçlendirmenin ve deneyimsel doğaları sayesinde işbirliğini teşvik etmenin bir yoludur (Bradshaw & Lowenstein, 2011). Eğitsel oyunların günümüzde giderek yaygınlaşmasının çeşitli nedenleri vardır. Mevcut teknoloji bireylerin dikkat süresini azaltmakta ve öğrencilerin öğrenme içeriğine olan ilgisini sürdürmek için yenilik, anlık tatmin ve anında geri bildirim gerekmektedir (Oblinger, 2006). Öğrenci merkezli modern eğitimdeki temel sorunlardan biri, öğrencilerin öğrenme sürecine aktif katılımı ve motivasyon eksikliğidir (Kiryakova vd., 2014). Oyunlar bu ihtiyaçları karşılayabilir çünkü deneyimseldirler ve sık sık geri bildirim sağlayabilirler. Bu nedenle eğitimciler ve özellikle müfredat geliştiriciler oyunlara yönelmekte ve öğrencilere yaparak yaşayarak öğrenme deneyimleri sunmaktadır (Bicen ve Kocakoyun, 2017; Squire, 2005). Sınıf içi ve sınıf dışı eğitim ortamlarında öğretim araç ve içeriklerinin oyun ve oyun unsurları ile birlikte sunulması oyunlaştırma kavramını ortaya çıkarmıştır (Dicheva vd., 2015).

Oyunlaştırma, yaygın ve örgün eğitim sırasında farklı alanlarda problem çözmek, öğrenmeyi kolaylaştırmak, katılımı ve motivasyonu artırmak için oyun tabanlı mekanikleri, görselleri, oyun öğelerini ve düşünme biçimini kullanmaktır (Dicheva vd., 2015; Kiryakova vd., 2014; Wang vd., 2017). Oyunlaştırma unsurları, çoğunlukla biçimlendirici değerlendirme aracı olarak kullanılan dijital öğrenci yanıt sistemlerinde de kullanılmakta ve öğrencilerin aktif katılımını ve motivasyonunu artırdığı bilinmektedir (Dix, 2013; Şad ve Ozer, 2019; Wang vd., 2017). Biçimlendirici değerlendirme, öğretim verilerine dayalı bir değerlendirme yaparak öğrenmeyi teşvik etmeyi ve her bireyin ilerlemesini göstererek bir sonraki öğretimi şekillendirmeyi amaçlar (Demirel, 1991; Glover vd., 2019). Biçimlendirici değerlendirme, bir ders veya üniteden sonra bilgi veya ustalık noktasını belirleyen sonuç odaklı değerlendirmelerin veya standart testlerin aksine, öğrenme süreci hakkında veri toplar. Özellikle mobil cihazların yaygınlaşmasıyla birlikte sınıf içinde yüksek hızda ve etkili veri toplamaya olanak tanıyan

uygulamalar, giderek daha fazla sayıda biçimlendirici değerlendirme uygulaması geliştirilmekte ve yaygınlaşmaktadır.

Öğrenci yanıt sistemleri (ÖYS), akıllı telefonlar ve tabletler gibi kablosuz mobil cihazlar aracılığıyla öğrenci yanıtlarını anında toplamakta, toplu sonuçları sınıfta göstermekte ve eğitmenler tarafından sorulan sorular hakkında anında geri bildirim toplamaktadır (Aljaloud vd., 2015; Chaiyo ve Nokham, 2017; Kaleta ve Joosten, 2007). Bu dijital değerlendirme araçları, öğrencilerin sorulara anında, neşeli ve rekabetçi bir şekilde yanıt vermesine olanak tanıyarak öğretmenlere bireysel veya grup değerlendirmesi için anında toplu veri sağlar (Şad ve Ozer, 2019; Yılmaz, 2017). Günümüzde öğrenci yanıt sistemleri olarak nitelendirilebilecek birçok uygulama, web sitesi ve yazılım bulunmaktadır. Bunlar arasında oyun öğeleri içeren ve oyunlaştırılmış öğrenci yanıt sistemleri olarak adlandırılabilecek yaygın uygulamalara örnek olarak Socrative, Kahoot, FlipQuiz, Quizizz, Plickers verilebilir (Bicen ve Kocakoyun, 2017; Şad ve Ozer, 2019). Bu uygulamalar temel olarak eğitmen tarafından önceden belirlenen farklı formlardaki soruları, sınıfta bireysel olarak cevaplayan öğrencilere mobil cihazları ile aynı anda iletmektedir. Soruların cevapları, platform tarafından sağlanan bonus puan, hızlı cevap puanı, rozet, seviye atlama, öne geçme gibi oyunlaştırma unsurları ile anlık olarak toplu bir şekilde sunulmaktadır. Bu araştırmada en yaygın kullanılan oyunlaştırılmış öğrenci yanıt sistemleri olan Kahoot ve Socrative kullanılacaktır (Bicen & Kocakoyun, 2017; Y. Can, 2018; Çelik, 2015; Gündüz & Akkoyunlu, 2020). Kahoot temel olarak oyunlaştırılmış bir öğrenci yanıt sistemidir. Kahoot kullanıcıları, akıllı telefonları veya internete bağlanabilen herhangi bir cihaz ile kolay ve eğlenceli bir şekilde sınavlara girebilir veya bir anketi cevaplayabilirler (Licorish vd., 2017; Türk, 2019; Uçar ve Kumtepe, 2017). Socrative, derste görsel sorularla eş zamanlı olarak uygulanabilen oyun tabanlı bir uygulamadır. Socrative uygulaması, öğrencilerin ders konularını daha iyi anlamalarına ve işbirlikçi tartışmalara katılmalarına yardımcı olmak için bir sınıfta kullanılabilecek ücretsiz bir uygulamadır.

Çok sayıda çalışma, oyun ve oyunlaştırma içeren öğrenme etkinliklerinin öğretim ve akademik başarı üzerinde olumlu etkileri olduğunu göstermiştir (Adkins-Jablonsky vd., 2021; Dicheva vd., 2015; Gündüz ve Akkoyunlu, 2020; Huang ve Soman, 2013; Jacobs, 2013; Kiryakova vd., 2014; Tan ve Saucerman, 2017; Wang vd., 2017). Oyunların eğitimdeki potansiyelini savunan araştırmacılar (Amr, 2012), öğrenci görüşlerine yer vermekte (Gündüz ve Akkoyunlu, 2020) ve günümüz eğitim alanının güncel konularından biri olduğunu belirtmektedir (Bicen ve Kocakoyun, 2017). Ancak alanyazın incelendiğinde deneysel çalışmaların az olduğu söylenebilir. Oyunlaştırılmış öğrenci yanıt sistemlerine ilişkin sınırlı

sayıdaki bulgunun daha fazla deneysel çalışma ile desteklenmesi, uygulamadaki eksikliklerin tespit edilmesi ve farklı değişkenler üzerindeki etkilerin belirlenmesi açısından hayati önem taşımaktadır. Ayrıca konuyla ilgili çalışan araştırmacılar (Dicheva vd., 2015; Dix, 2013; Rahmahani vd., 2020; Şad ve Ozer, 2019; Tan ve Saucerman, 2017; Wang vd., 2017) oyunlaştırılmış öğrenci yanıt sistemlerinin farklı bağlamlarda ve farklı gruplarla kullanılabileceğini öne sürmektedir. Birden fazla uygulamanın farklı gruplarla deneysel olarak incelenmesinin gerekliliği literatürde sıklıkla vurgulanmaktadır.

Etkileşimli teknolojinin eğitime artan entegrasyonu, Kahoot veya Socrative gibi oyunlaştırılmış öğrenci yanıt sistemleri (ÖYS) üzerine yapılan araştırmalarda önemli bir artışa yol açmıştır. Oyunlaştırılmış ÖYS'lerin motivasyon, katılım, kaygı ve akademik başarı dahil olmak üzere öğrenci öğreniminin birçok yönünü nasıl etkilediğini incelemek, bu çalışmalarda tekrar eden bir temadır. Çok sayıda araştırma, oyunlaştırılmış ÖYS'nin öğrenci motivasyonunu ve katılımını nasıl artırdığını göstermektedir. Örneğin, Chaiyo & Nokham (2017) ve Licorish ve diğerleri (2017), Kahoot ve Quizizz gibi platformların geleneksel yöntemlere kıyasla öğrencilerin odaklanma, katılım, eğlence, motivasyon ve memnuniyetini önemli ölçüde artırdığını bulmuştur. Benzer şekilde, Incekar (2023), Kahoot kullanıldığında başarı puanlarında ve motivasyon seviyelerinde önemli gelişmeler olduğunu bildirmiştir. Bu bulgular, Kahoot'un öğrencilerin yabancı dil olarak İngilizce (EFL) derslerine yönelik tutumlarını ve motivasyonlarını önemli ölçüde artırdığını, ancak sınav kaygısındaki azalmanın istatistiksel olarak anlamlı olmadığını tespit eden Öden ve diğerleri (2021) tarafından yeniden keşfedilmiştir. Araştırmalar, oyunlaştırılmış ÖYS'nin bilişsel faydalarını da araştırmıştır. Turk (2019), Kahoot'un kelime bilgisi başarısına çok az katkıda bulunurken, öğrencilerin tutumları üzerinde olumlu bir etkisi olduğunu ve akılda tutmaya yardımcı olduğunu bulmuştur. Diğer çalışmalar, oyunlaştırılmış ÖYS'nin sırasıyla dil bilgisi yeterliliğini ve akademik başarıyı önemli ölçüde geliştirdiğini bildirmiştir (Ayten, 2022; Y. Can, 2018). Bu çalışmalar, oyunlaştırılmış ÖYS'nin öğrenmeyi daha ilgi çekici ve eğlenceli hale getirerek dil öğrenimini ve diğer akademik konuları geliştirmek için etkili bir araç olabileceğini göstermektedir. Ayrıca, oyunlaştırılmış ÖYS'nin sınıf dinamikleri ve kaygı üzerindeki etkisi kapsamlı bir şekilde incelenmiştir. Shaker ve arkadaşları (2021), Kahoot'un istatistik derslerinde öğrencilerin öğrenmesini ve katılımını artırdığını, kaygı üzerinde ise göreceli olarak daha küçük bir etkisi olduğunu bulmuştur. Oyunlaştırılmış öğrenci yanıt sistemleri (ÖYS) üzerine yapılan araştırmalar, bu araçların daha olumlu ve daha az stresli bir öğrenme ortamı yaratarak öğrenci çıktılarını iyileştirebileceğini göstermektedir. Örneğin, Socrative ve not verilmeyen Kahoot

oyununun kullanımının, özellikle düşük performans gösteren öğrenciler için sınıf kaygısını azalttığı ve katılımı artırdığı bulunmuştur. Oyunlaştırılmış ÖYS ayrıca aktif katılımı teşvik eder ve yıkıcı davranışları azaltır, bu da daha iyi etkileşim, odaklanma ve derslere katılımın yanı sıra daha iyi final notlarına yol açar. Bununla birlikte, bu araçlar öğrenci görüşlerini ve motivasyonunu olumlu yönde etkilerken, akademik başarı üzerindeki doğrudan etkileri uygulamaya ve bağlama bağlı olarak değişebilir. Genel olarak, oyunlaştırılmış ÖYS katılımı ve öğrenme sürecini geliştirebilir, ancak akademik performans üzerindeki etkileri farklılık gösterebilir (Adkins-Jablonsky vd., 2021; Altwijri vd., 2022; Karatekin, 2017; Rahmahani vd., 2020; Tuttle, 2021; Wood, 2020).

Bu çalışmanın amacı, oyunlaştırılmış öğrenci yanıt sistemlerinin İngilizce öğretiminde öğrencilerin başarı, motivasyon ve kaygı düzeyleri üzerindeki etkilerini incelemektir. Bu deneysel araştırmaya katılan öğrenciler, Kahoot ve Socrative olmak üzere önceden belirlenmiş iki farklı oyunlaştırılmış öğrenci yanıt sistemi aracılığıyla bir dizi biçimlendirici sınava girmiştir. Oyunlaştırılmış öğrenci yanıt sistemlerinin her birinin öğrencilerin başarısını, motivasyonunu ve kaygı düzeylerini nasıl etkilediği incelenmiştir. Yapılacak deneysel verilerin literatürde işaret edilen eksiklikleri gidereceği ve oyunlaştırılmış öğrenci yanıt sistemleri hakkında öğretmen ve öğrencilere bilgi sağlayacağı beklenmektedir. Bu temel araştırma sorusu çerçevesinde aşağıdaki alt sorular oluşturulmuştur.

- Oyunlaştırılmış ÖYS'ler öğrencilerin İngilizce öğrenme başarılarını nasıl etkiler?
- Oyunlaştırılmış ÖYS'ler öğrencilerin İngilizce öğrenmedeki motivasyon düzeyini nasıl etkiler?
- Oyunlaştırılmış ÖYS'ler öğrencilerin İngilizce öğrenme kaygı düzeylerini nasıl etkilemektedir?
- Öğrencilerin Kahoot testleri hakkındaki görüşleri nelerdir?
- Öğrencilerin Socrative testleri hakkındaki görüşleri nelerdir?
- Öğrencilerin kâğıt tabanlı testler hakkındaki görüşleri nelerdir?

8.2. Yöntem

Bu çalışmada karma yöntem araştırma deseni kullanılmıştır. Karma yöntem araştırması, hem nicel hem de nitel verileri içeren ve araştırma probleminin tek başına kullanılan bir yönteme göre daha iyi anlaşılmasını sağlayan bir yöntemdir (Clark ve Creswell, 2008). Bu çalışmada karma araştırma yöntemlerinden biri olan gömülü araştırma deseni kullanılmıştır. Gömülü desenler, geleneksel nitel ve nicel araştırma desenleri çerçevesinde nitel ve nicel

verilerin birlikte analiz edildiği karma yöntem yaklaşımlarından biridir. Gömülü karma desende araştırmacılar, problemi daha iyi anlamak için deneysel bir çalışma gibi nicel bir aşamaya nitel bir aşama ekleyebilir veya durum çalışması gibi nitel bir aşamaya nicel bir aşama dahil edebilir (Clark ve Creswell, 2008; Yıldırım ve Simsek, 1999). Bu teorik bilgilere dayanarak mevcut çalışma için karma yöntem araştırma modeli benimsenmiştir.

Bu çalışmanın nicel kısmında öntest-sontest kontrol gruplu yarı deneysel desen kullanılmıştır. Deneysel çalışmalar, araştırmacı tarafından yaratılan farklılıkların bağımlı değişken üzerindeki etkilerini incelemektedir (Büyüköztürk vd., 2008). Yarı deneysel desenlerde deney ve kontrol grupları belirli değişkenlere bakılarak hazır gruplardan seçilir (Büyüköztürk vd., 2008). Bu çalışmada yer alan çalışma grupları, İnönü Üniversitesi İngilizce Hazırlık Programına yerleştirildikleri kur seviyesine göre seçilmiştir. Araştırmanın bu bölümündeki öntest-sontest verileri İngilizce Başarı Testi, Gardner (2004) tarafından geliştirilen Tutum ve Motivasyon Test Bataryası (AMTB) ve Horwitz (1986) tarafından geliştirilen Yabancı Dil Sınıf Kaygısı Ölçeği aracılığıyla elde edilmiştir. Gardner'ın (2004) Tutum/Motivasyon test bataryasından uyarlanan Motivasyon ve Tutum Ölçeği, öğrencilerin motivasyon düzeylerini ve dil öğrenmeye yönelik tutumlarını değerlendirmek için yaygın olarak kabul görmektedir. Gardner'ın orijinal bataryası, çok sayıda çalışma ile doğrulanmış ve oldukça güvenilir olarak kabul edilmiştir (Doğan, 2009; Dörnyei, 2003; Karakiş, 2020). Ölçek 104 madde ve yabancı dile yönelik motivasyon, tutum ve ilgiyi içeren 11 boyuttan oluşmaktadır. Özellikle motivasyon ölçme bölümü, motivasyon yoğunluğu, İngilizce öğrenme arzusu, İngilizce öğrenmeye yönelik tutum ve araçsal yönelim faktörlerine odaklanan 34 Likert tipi maddeden oluşmaktadır. Bu boyutlar, bireylerin dil öğrenme başarılarını önemli ölçüde etkileyen içsel motivasyonlarını ve İngilizce derslerine yönelik tutumlarını anlamak için çok önemlidir (Doğan, 2009; Gardner ve Gliksman, 1982; Gardner ve Smyihe, 1981).Ölçek, Gardner'ın orijinal analizine göre 0,70 ve Doğan'ın (2009) Türkçe uyarlamasına göre 0,91 Cronbach alfa katsayısı değeri ile yüksek bir güvenilirlik oranı göstermektedir. Yabancı Dil Sınıf Kaygısı Ölçeği (FLCAS) dil eğitimi araştırmalarında, özellikle de dil öğreniminin psikolojik boyutlarının anlaşılmasında önemli bir araçtır. Horwitz, Horwitz ve Cope tarafından geliştirilmiştir (Horwitz vd., 1986). Ölçek, araştırmacılara ve eğitimcilere kaygı ve dil öğrenimi arasındaki karmaşık ilişkiyi keşfetmek için güvenilir bir araç sağlar. Akademik araştırmalarda dil öğrenenler arasındaki kaygı düzeylerini değerlendirmek için yaygın olarak kullanılmıştır. FLCAS, Konuşma Kaygısı, Dil Dersine Yönelik İlgi ve Anadili İngilizce Olan Kişilerle Konuşma Kaygısı olmak üzere üç alt boyuta ayrılan 33 maddeden oluşmaktadır.

Çalışmanın nitel verileri odak grup görüşmeleri ve bireysel anketler aracılığıyla elde edilmiştir. İlk olarak, araştırmacı fikir üretmek için bir odak grup oturumu düzenlemiş ve deney sonrasında gerçekleştirmiştir. Odak grup görüşmelerinde, bireysel görüşmelerden farklı olarak, bireylerin birbirleriyle olan etkileşimi verilen cevapları etkilemektedir. Yanıtların bir grup bağlamında paylaşılması, insanların birbirlerinin fikirlerine tepki verdiği ve birbirlerinin fikirleri üzerine inşa ettiği dinamik bir etkileşimi teşvik edebilir (Yıldırım ve Simsek, 1999). Bu işbirlikçi yöntem, konunun daha derinlemesine araştırılmasını teşvik eder ve görüşme verilerinin derinliğini artırır. Bu işbirlikçi tartışmaya katılanlar görüşlerini paylaşabilmiş, çeşitli bakış açıları sunabilmiş ve çok sayıda bilgi üretebilmiştir. Daha sonra öğrencilerden, sınıfta kullanılan biçimlendirici test yöntemleri hakkındaki görüşlerini ifade etmeleri için bireysel olarak bir anket doldurmaları istenmiştir. Bu sayede öğrenciler, odak grup görüşmeleri sırasında ifade etmekten çekindikleri olumsuz görüşlerini dile getirebilmişlerdir.

İnönü Üniversitesi Yabancı Diller Yüksekokulu'nda 2022-2023 akademik yılında, olası sorunları belirlemek ve oyunlaştırılmış öğrenci yanıt sistemleri Kahoot ve Socrative'i içeren deneysel süreci etkili bir şekilde uygulamak için bir pilot çalışma yürütülmüştür. Her biri aynı İngilizce seviyesinden yaklaşık 18 öğrenciye sahip rastgele seçilmiş iki sınıf, "Q Skills for Success Listening and Speaking Level 1" ders kitabını kullanarak çalışmaya katılmıştır. Kahoot'a zaten aşina olan ilk grup, 20 soruluk bir testi 21 dakikada, minimum alıştırma gerektirerek ve önemli teknik sorunlar yaşamadan tamamladı. Kahoot'un zaman sınırları ve arka plan müziği de dâhil olmak üzere rekabetçi ve etkileşimli doğası, öğrenciler arasında heyecan ve tezahürat uyandırdı. Büyük ölçüde Socrative'e aşina olmayan ikinci grup, Kahoot'un aksine geri sayım sayacı veya her sorudan sonra görünür bir sıralama içermeyen Öğretmen Hızlandırmalı modu kullandı. Bu grubun kısa bir alıştırma döneminden sonra testi tamamlaması 27 dakika sürmüştür. Pilot çalışma, iki platform arasındaki öğrenci katılımı ve etkileşim farklılıklarını başarılı bir şekilde vurgulamış ve ana çalışma için değerli bilgiler sağlamıştır.

Veriler deneysel uygulama aşamasından önce ve sonra toplanmış ve SPSS (Statistical Package for the Social Sciences) kullanılarak analiz edilmiştir. Tutarlılığı sağlamak için motivasyon ve kaygı ölçeklerindeki bazı maddeler ters kodlanmış ve eksik değerler tespit edilerek düzeltilmiştir. Ön testi tamamlamayan veya tüm maddelerde aynı yanıtları veren öğrenciler, olası çarpıtmayı azaltmak için hariç tutulmuştur. ANCOVA analizi, gruplar arasında önceden var olan farklılıkları kontrol ederken deneysel müdahalenin bağımlı değişkenler üzerindeki etkisini değerlendirmek için yapılmıştır. ANCOVA, hata varyansını azaltmak ve uygulama etkisi tahmininin kesinliğini artırmak için bağımlı değişkeni bir veya daha fazla ortak

değişkenin etkisine göre ayarlar. Bu yöntem, gruplar arasında önceden var olan farklılıkları kontrol ederek daha güvenilir sonuçlara ulaşılmasını sağlar. Grupların bağımsızlığı, normallik, varyansların homojenliği, regresyon eğimlerinin homojenliği, doğrusallık ve ortak değişken ile bağımsız değişkenin bağımsızlığı dahil olmak üzere çeşitli kritik varsayımlar incelenmiştir. Bu varsayımlar toplu olarak yanlılığı önlemekte ve ANCOVA sonuçlarının güvenilirliğini sağlamaktadır. Bulgular, Fisher'in (1936) önerisi doğrultusunda, yanlış pozitif sonuçlar elde etme olasılığını azaltmak için 0,01 p-değerinde yorumlanmıştır. Nitel veri analizi, odak grup görüşmesi kayıtlarının ve anket yanıtlarının elektronik tablolara kodlanmasını, ardından verilerin motivasyon, kaygı ve başarıya göre düzenlenmesini ve sınıflandırılmasını içermektedir. Araştırma konularının kapsamlı bir şekilde anlaşılmasını sağlamak için veri çeşitlendirme tekniği kullanılarak bir içerik analizi yaklaşımı kullanılmıştır. Kodlama sürecinin geçerliliği ve güvenilirliği, başka bir araştırmacı tarafından yapılan bağımsız sınıflandırma ile artırılmış ve %87,39 gibi yüksek bir güvenilirlik oranı elde edilmiştir. Katılımcı teyidi, sonuçların doğruluğunu ve güvenilirliğini daha da doğrulayarak çalışmanın inandırıcılığını artırmıştır.

8.3. Bulgular

8.3.1. Birinci Alt Probleme İlişkin Bulgular

Oyunlaştırılmış öğrenci yanıt sistemlerinin, yabancı dil olarak İngilizce öğrenirken öğrencilerin başarı düzeyini nasıl etkilediğini araştırmak için, biçimlendirici bir değerlendirme aracı olarak farklı oyunlaştırılmış öğrenci yanıt sistemlerini kullanan her grubun düzeltilmiş başarı puanlarını karşılaştırmak için bir ANCOVA testi kullanılmıştır. Her grubun ön test sonuçları, gruplar arasında önceden var olan farklılıkların etkisini ortadan kaldıran bir ortak değişken veya kontrol değişkeni olarak kabul edilmiştir. Tablo 2, bağımlı değişken için farklı gruplardaki öğrencilerin başarı puanlarını ve kontrol değişkenine göre düzeltilmiş başarı puanlarını sunmaktadır. Grupların ön test düzeylerine göre düzeltilmiş başarı puanları incelendiğinde, kâğıt kalem yöntemiyle biçimlendirici değerlendirme alan öğrencilerin en yüksek ortalama başarı puanına ($\overline{X}$=69,2) sahip olduğu, bunu Socrative ($\overline{X}$=57,1) ile biçimlendirici test yapan grubun izlediği ve son olarak en düşük ortalama puana sahip grubun Kahoot ($\overline{X}$=53,3) ile biçimlendirici test yaptığı görülmüştür.

Analiz, farklı biçimlendirici test yöntemlerinin öğrencilerin başarı puanları üzerindeki etkisinin, başlangıçtaki başarı düzeylerinin etkisi kontrol edildikten sonra, büyük bir etki büyüklüğüyle anlamlı olduğunu göstermektedir, $F_{(2;\ 49)} = 7.06$, $p < .01$, *kısmi* $\eta 2 = .224$. Post

hoc karşılaştırmalar, kağıt tabanlı biçimlendirici testleri alan öğrencilerin düzeltilmiş başarı ortalamalarının ($\overline{X}$ = 69.2) Kahoot adlı oyunlaştırılmış öğrenci yanıt sistemi üzerinden biçimlendirici testleri alan öğrencilerden ($\overline{X}$ =53.3) önemli ölçüde daha yüksek olduğunu ortaya koymuştur (p<.01). Analiz sonuçları ayrıca kontrol değişkeninin (öğrencilerin ilk başarı puanları) öğrencilerin nihai başarı puanlarıyla büyük bir etki büyüklüğüyle anlamlı bir şekilde ilişkili olduğunu göstermektedir ($F_{(1; 49)} = 20.33$, $p < .01$, kısmi η^2=0.293).

8.3.2. İkinci Alt Probleme İlişkin Bulgular

Biçimlendirici değerlendirme araçları olarak oyunlaştırılmış öğrenci yanıt sistemlerinin öğrencilerin yabancı dil olarak İngilizce öğrenme motivasyonları üzerindeki etkisini incelemek için bir başka ANCOVA testi yapılmıştır. Her grubun ön test puanları, gruplar arasındaki başlangıç farklılıklarını hesaba katmak için ortak değişken olarak kullanılmıştır. Tablo 4, bağımlı değişken için farklı gruplardaki öğrencilerin motivasyon düzeylerinin yanı sıra kontrol değişkenine göre düzeltilmiş motivasyon puanlarını göstermektedir. Grupların ön test düzeylerine göre düzeltilmiş motivasyon puanları incelendiğinde, kağıt kalem yöntemiyle biçimlendirici değerlendirme alan öğrencilerin en yüksek ortalama motivasyon puanına ($\overline{X}$ =138) sahip olduğu, bunu Kahoot ($\overline{X}$ =135) ile biçimlendirici test yapan grubun izlediği ve son olarak en düşük ortalama puana sahip grubun Socrative ($\overline{X}$ = 132) ile biçimlendirici test aldığı görülmüştür.

Analiz sonuçları, kontrol değişkeninin (öğrencilerin başlangıç motivasyon düzeyi) öğrencilerin deney sonrası motivasyonuyla büyük bir etki büyüklüğüyle anlamlı bir şekilde ilişkili olduğunu göstermektedir, $F_{(1; 49)} = 33.81$, $p < .01$, *kısmi* $\eta_2 = .408$. Bununla birlikte, analiz, farklı biçimlendirici test yöntemlerinin öğrencilerin motivasyon puanları üzerindeki etkisinin, başlangıçtaki motivasyon düzeylerinin etkisi kontrol edildikten sonra anlamlı olmadığını göstermektedir, $F_{(2; 49)} = 0.471$, $p>.01$. Bu, her bir grup için düzeltilmiş motivasyon puan ortalamalarının birbirinden önemli ölçüde farklı olmadığını göstermektedir.

8.3.3. Üçüncü Alt Probleme İlişkin Bulgular

Biçimlendirici değerlendirme araçları olarak oyunlaştırılmış öğrenci yanıt sistemlerinin öğrencilerin yabancı dil olarak İngilizce öğrenme kaygıları üzerindeki etkisini incelemek için bir başka ANCOVA testi yapılmıştır. Her grubun ön test puanları, gruplar arasındaki başlangıç farklılıklarını hesaba katmak için ortak değişken olarak kullanılmıştır. Tablo 6, bağımlı değişken için farklı gruplardaki öğrencilerin kaygı düzeylerinin yanı sıra kontrol değişkenine göre düzeltilmiş kaygı puanlarını göstermektedir. Her bir grubun ön test seviyelerine göre

düzeltilmiş kaygı puanları incelendiğinde, Socrative ile biçimlendirici değerlendirme alan öğrencilerin en yüksek ortalama kaygı değerine ($\overline{X}$=105,9) sahip olduğu, bunu Kahoot ($\overline{X}$ =88,1) aracılığıyla biçimlendirici testler yapan grubun izlediği ve son olarak en düşük ortalama kaygı puanına sahip grubun kâğıt üzerinde biçimlendirici testler aldığı ($\overline{X}$=79,8) görülmektedir.

Analiz, farklı biçimlendirici test yöntemlerinin öğrencilerin kaygı düzeyleri üzerindeki etkisinin, başlangıçtaki kaygı puanlarının etkisi büyük bir etki büyüklüğü ile kontrol edildikten sonra anlamlı olduğunu göstermektedir, $F_{(2;\ 49)} = 8.07$, $p < .01$, *kısmi* $\eta^2 = .248$. Post hoc karşılaştırmalar, Socrative üzerinden formatif test alan öğrencilerin düzeltilmiş kaygı ortalama puanlarının ($\overline{X}$=105.9) kâğıt tabanlı formatif test alan öğrencilerden ($\overline{X}$=79.8) önemli ölçüde daha yüksek olduğunu ortaya koymuştur (p<.01). Analiz sonuçları ayrıca kontrol değişkeninin (öğrencilerin başlangıçtaki kaygı puanları) öğrencilerin nihai kaygı düzeyleri ile önemli ölçüde ilişkili olmadığını göstermektedir, $F_{(1;\ 49)} = 2.67$, $p > .01$.

8.3.4. Dördüncü Alt Probleme İlişkin Bulgular

Bu bölümde, öğrencilerin Kahoot testleri hakkındaki görüşlerine ilişkin nitel bulgular sunulmaktadır. Bu bulgular odak grup görüşmeleri ve formatif testler anketi aracılığıyla toplanmıştır. Toplam 222 yanıt analiz edilmiş ve bu yanıtların içeriğine dayalı temalar ortaya çıkmıştır. Öğrenciler Kahoot testlerini yaparken en baskın olarak *"Katılım ve Eğlence"* temasını ifade etmişlerdir. Platformun etkileşimli yapısını takdir etmişler ve oyunlaştırılmış unsurları özellikle ilgi çekici bulmuşlardır. Birçok öğrenci, Kahoot'un rutine hoş bir ara verdiğini belirterek, geleneksel sınıf etkinlikleriyle ilişkilendirilen can sıkıntısı ve monotonluktan kurtulduklarını ifade etti. Örneğin, bir öğrenci *"derste sıkıldıktan sonra can sıkıntısını hafifletmeye yardımcı oluyor (KQ_S5)"* dedi. Öğrenciler Kahoot'u çoğunlukla "*güzel, eğlenceli, çok keyifli ve heyecan verici ve rekabetçi (KQ_S1, KQ_S3, KQ_S4, KQ_S8, KQ_S11, KQ_S12, KQ_S13)"* gibi olumlu sıfatlarla ilişkilendirdi. Kahoot'un görsel çekiciliğini ve oyun benzeri unsurlarını *"görsel olarak eğlenceliydi (KFG_Ahmet)"* ve "*bayıldım, çünkü oyun gibi (KQ_S1)"* gibi yorumlarla takdir ettiler. Bazı öğrenciler Kahoot'un oyunlaştırılmış doğasının öğrenmeyi daha eğlenceli hale getirdiğini özellikle belirterek *"Beni eğlendirmesi hoşuma gidiyor (KQ_S11)"* ve *"eğlendirirken öğretiyor (KQ_S12)"* ifadelerini kullandı. Genel olarak, öğrenciler Kahoot testlerini öğrenmenin ilgi çekici ve eğlenceli bir yolu olarak görmüştür. Kahoot'un yarattığı olumlu ve etkileşimli öğrenme ortamını takdir etmişler, ilgilerini çekme ve ders sırasında odaklanmalarını sağlama becerisini vurgulamışlardır. Kahoot testlerinin

"Rekabet ve Motivasyon" yönü öğrenciler için önemli bir motivasyon kaynağı olarak ortaya çıkmıştır. Kahoot testlerindeki rekabet ve motivasyonla ilgili geri bildirimler, öğrencilerin platformun rekabetçi yönlerinin motivasyonlarını ve katılımlarını nasıl etkilediğine dair bakış açılarını yansıtmaktadır. Birçok öğrenci, *"zaman içinde bildiklerimizi yarıştırmak (KFG_Mehmet)"* ve *"motive edici (KFG_Ayşe)"* gibi yorumlarla akranlarına karşı yarışmanın heyecanından bahsetti. Öğrenciler, "*hızlı rekabet bizi hırslandırıyor (KQ_S3)"* ve "*rekabetçi hırs (KQ_S4)"* diyerek rekabet unsurunu takdir etmişlerdir. Bazı öğrenciler için rekabet bir motivasyon kaynağı olmuştur, çünkü başkalarıyla rekabet ederken kendilerini gelişmeye ve mükemmelleşmeye yönlendirilmiş hissetmişlerdir. Öğrenciler *"herkesin birbirine karşı rekabetçi bir hırsa sahip olduğunu (KQ_S3)"* ve *"diğerlerinin ne kadar iyi olduğunu gördükçe kendimi daha fazla geliştirmek istiyorum (KQ_S8)"* ifadelerini kullanmışlardır. Ayrıca yarışma, *"Daha çok çalıştım (KQ_S1)"* ve *"Daha çok çalışıyorum (KQ_S7)"* gibi yorumlarla öğrencileri daha çok çalışmaya teşvik etti. Genel olarak, öğrenciler Kahoot testlerindeki rekabeti, kendilerini daha iyi performans göstermeye ve daha fazla çaba sarf etmeye iten motive edici bir faktör olarak gördüler. Rekabet ortamı öğrenciler arasında hırs ve kararlılık duygusunu besleyerek onları başarı ve gelişim için daha fazla çaba göstermeye teşvik etmiştir. Kahoot testlerinin genel olarak olumlu karşılanmasına rağmen, bazı cevaplar Kahoot'ta test edilirken *"Zorluklara ve Kaygıya"* işaret etti. Bazı öğrenciler platformun rekabetçi doğasıyla bağlantılı olarak endişe ve baskı hissettiklerini ifade etmiştir. Birkaç öğrenci, özellikle küçük bir farkla kaybettiklerinde kıskançlık ve hayal kırıklığı yaşadıklarını bildirmiştir. Örneğin, bir öğrenci *"küçük bir farkla kaybetmek beni pişman hissettirdi (KFG_Ömer)"* derken, bir diğeri *"beni biraz strese sokuyor ama iyi bir duygu (KQ_S3)"* dedi. Diğerleri Kahoot testlerinin genellikle özeleştirel düşüncelere yol açtığını belirtmiş ve "*genellikle kendim hakkında kötü düşünmeme neden oluyor (KQ_S9)"* gibi yorumlar yapmıştır. İyi performans gösterme baskısı bazen hata yaptıktan sonra çabanın azalmasına neden oldu; *"Birkaç hatadan sonra daha fazla çaba gösterdim, ancak hatalar arttıkça pes ettim (KFG_Esma)"* ve *"çok fazla hata yaptığımda pes ettim (KFG_Ali)"* diyen öğrenciler tarafından vurgulandığı gibi. Ayrıca, zaman kısıtlaması da kaygılarını artırdı; birden fazla öğrenci *"zaman kısıtlaması beni endişelendirdi (KFG_Ömer, KFG_Esma)"* şeklinde ifadeler kullandı. Genel olarak bu yanıtlar, Kahoot'un ilgi çekici olsa da rekabetçi unsurlarının ve zaman baskısının bazı öğrenciler için önemli ölçüde stres ve kaygıya yol açabileceğini göstermektedir.

Öğrencilerin Kahoot testlerindeki *"Sınırlı Etki ve İlgisizlik"* konusundaki yanıtları, birçoğunun platforma sınırlı katılım ve ilgi gösterdiğini ifade eden bir dizi görüşü ortaya

koymaktadır. *"Fena değil (KQ_S7)", "Sevdiğim bir özelliği yok (KQ_S9)"* ve *"Çok fazla etkisi olmadı (KQ_S12)"* gibi yanıtlar, heves veya ilgi eksikliğine işaret etmektedir. *"Motivasyonumu artırdığını düşünmüyorum (KQ_S9)"* ve "*Beni çok fazla etkilemiyor (KQ_S14)"* gibi yorumlar, bazı öğrencilerin testlere karşı ilgisiz veya etkilenmemiş hissettiklerini göstermektedir. Buna ek olarak, bazı öğrenciler *"rahat (KQ_S12)"* ve *"normal halim (KQ_S5)"* gibi yorumlarla testler sırasında sakin hissettiklerini veya ilgilenmediklerini bildirmiştir. Diğerleri, önemli ölçüde etkilenmeden kalan soruları yanıtlamaya odaklanabildiklerini belirtmiştir. Bu yanıtlar birlikte ele alındığında, bazı öğrenciler için Kahoot testlerinin güçlü duygular veya motivasyon uyandırmadığı, bunun da ilgisizlik veya düşük etki ile sonuçlandığı anlaşılmaktadır.

Birkaç öğrenci Kahoot testlerinin *"Sınıf Dinamikleri*" üzerindeki etkisi hakkında yorumda bulunarak bu etkinliklerin akranlar arasında işbirliğini ve ekip çalışmasını teşvik ettiğini belirtmiştir. Kahoot testlerinin sosyal yönünden hoşlanmışlar ve olumlu bir öğrenme ortamı yarattığını düşünmüşlerdir. Az sayıda öğrenci Kahoot testlerinin resmi sınavlardaki "Sınav Başarılarına" doğrudan katkıda bulunduğunu düşünmektedir. Kahoot etkinliklerine katılmanın ders materyallerini gözden geçirmelerine ve sınavlardaki performanslarını artırmalarına yardımcı olduğuna inanıyorlardı. Az sayıda öğrenci, Kahoot testlerinin bağlantı sorunları veya platforma erişim zorlukları gibi *"Teknik Yönleri"* hakkında endişelerini dile getirdi. Bu zorluklar zaman zaman değerlendirmenin akışını bozmuş ve öğrencilerin genel deneyimini etkilemiştir.

8.3.5. Beşinci Alt Probleme İlişkin Bulgular

Bu bölümde, odak grup görüşmeleri ve formatif test anketlerinden elde edilen, öğrencilerin Socrative testleri hakkındaki görüşlerine ilişkin nitel bulgular sunulmaktadır. Toplam 215 yanıt analiz edilmiş ve temalar halinde kategorize edilmiştir. Bu bulgular, öğrencilerin Socrative'i biçimlendirici bir test platformu olarak kullanma deneyimlerine ve algılarına ilişkin kapsamlı bilgiler sunmaktadır. Öğrencilerin önemli bir kısmı Socrative testlerine ilişkin cevaplarında *"Katılım ve Eğlence*" temasını öne çıkarmıştır. Platformun dersleri daha dinamik hale getirmesini ve geleneksel sınıfların monotonluğunu kırmasını takdir etmişlerdir. Birçok öğrenci, Socrative testlerinin İngilizce derslerini eğlenceli hale getirdiğini ve hatta derse karşı olumlu bir tutum geliştirmelerine yardımcı olduğunu ifade etti. *"İngilizceyi sevmemi sağladı (SFG_Osman)" ve "İngilizceyi eğlenceli hale getirdi (SQ_S8)"* gibi yorumlar, İngilizce öğrenmeye yönelik tutumları üzerindeki olumlu etkiyi vurgulamaktadır. Öğrenciler, Socrative testlerinin interaktif yapısının motive edici ve cesaretlendirici olduğunu belirterek bu deneyimi *"muhteşem (SQ_S11)"* ve *"eğlenceliydi (SQ_S8, SQ_S12, SQ_S14, SQ_S16)"*

şeklinde tanımlamıştır. Bir öğrenci, normalde derse katılmayan sınıf arkadaşlarını bile uyandırdığını belirterek şunları söyledi: *"Normalde derse katılmayan sınıf arkadaşlarını bile uyandırdı (SFG_Osman)"* Sınıftaki genel atmosfer daha heyecanlı ve katılımcı olarak algılanmış, öğrenciler bu tür uygulamaların dersleri eğlenceli hale getirdiği konusunda hemfikir olmuşlardır. Rekabetçi yönü de heyecana katkıda bulunmuş, öğrenciler iyi performans gösterme ve ödül kazanma arzusuyla hareket etmiş, bu da motivasyonlarını ve katılımlarını artırmıştır. *"Rekabet bizi motive etti ve derse katılımı artırdı (SQ_S3)"* ve *"Çünkü heyecan verici bir atmosfer yarattı (SQ_S13)"* gibi yorumlar bu düşünceyi yansıtmaktadır. Bazı öğrenciler bu deneyimi çevrimiçi bir oyuna benzeterek *"Kendimi çevrimiçi bir savaş oyununda gibi hissettim (SFG_Osman)"* ve *"Kendimi çevrimiçi bir oyundaymışım gibi hissettim (SQ_S8)"* şeklinde tanımlamıştır. Genel olarak öğrenciler*, "İyi hissettiriyor (SQ_S10)"* ve *"Güzel buluyorum (SQ_S10, SQ_S12, SQ_S13)"* gibi ifadelerle Socrative testlerinin kullanımından memnun olduklarını belirtmişlerdir. Bu testlerden alınan keyif ve motivasyon, daha olumlu ve hevesli bir öğrenme ortamına katkıda bulunmuştur.

Socrative testlerinin *"Rekabet ve Motivasyon*" yönü birçok öğrenci tarafından vurgulanmıştır. Öğrenciler akranlarıyla rekabet etmek ve başarılı olmak için motive olmuş, bu da heyecanı ve katılımı artırmıştır. Öğrenciler, Socrative değerlendirmelerinin sınıfta nasıl bir rekabet ortamı yarattığını açıklamak için *"Sınıfta rekabetçi bir atmosfer yarattı (SQ_S10)"* ve *"Rekabet yarattı (SQ_S2, SQ_S13)"* gibi ifadeler kullandılar. Akranlarımız arasında nasıl sıralandığımızı görmek güzeldi. Öğrenciler sıklıkla *"Beni çok motive etti (SFG_Betül)"* ve *"Evet, motivasyonu artırdı çünkü rekabet yarattı (SQ_S3)"* diyerek motivasyon ve kararlılık duygularını dile getirdiler. Başarılı olma ve diğerlerini geçme arzusu yinelenen bir temaydı. Bir öğrenci *"Ekranda adımı gördüğümde heyecanlandım (SFG_Osman)"* derken bir diğeri *"adımı gördüğümde daha da heveslendim (SFG_Zehra)"* diyerek adlarını ekranda görmenin rekabetçi ruhlarını körüklediğini itiraf etmiştir. *"Hırsımı ateşledi (SQ_7)"* ve *"Daha çok çalışıyorum ve hırslanıyorum (SQ_S10)"* gibi ifadelerin de gösterdiği gibi, rekabetçi atmosfer sadece öğrencilere ilham vermekle kalmadı, aynı zamanda bir kararlılık ve amaç duygusu da yarattı. Socrative testlerin genel olarak öğrencilere ilham verme ve öğrenme sürecinde motivasyon düzeylerini artırma konusunda oldukça başarılı olduğu görülmüştür.

Öğrenciler *"Zorluklar ve Kaygı"* teması altında kodlanan çeşitli duygular ifade etmişlerdir. Bu duygular kısmen testlerin zaman kısıtlamalarıyla ilgilidir; *"Zaman sınırı nedeniyle biraz gergin hissettim (SQ_S6)"* ve "*Soruyu sınırlı bir sürede anlamak ve cevaplamak zorundaydım (SQ_S16)"* gibi yorumlar yapılmıştır. Hata yapmak öğrencilerin motivasyonunu

da olumsuz etkilemiş, bir öğrenci "*Her yanlış cevapta motivasyonum düştü (SFG_Zehra)"* derken bir diğeri *"Ödüller olduğu için motivasyonum düştü (SFG_Betül)"* itirafında bulunmuştur. Puan kaybetme veya hatalar nedeniyle geride kalma korkusu, stres ve kaygı duygularına katkıda bulunmuştur. Bazı öğrenciler sınavlar sırasında endişeli ve gergin hissettiklerini belirtmiş, *"Endişe ve biraz gerginlik (SQ_S1)"* ve *"Biraz gergindim (SQ_S7, SQ_S8, SQ_S14)"* gibi yorumlar yapmışlardır. Sınavların neden olduğu stres bazen odaklanma ve çabanın azalmasına yol açmıştır, bir öğrencinin belirttiği gibi*, "Stresli hissettiğimde daha az odaklanıyordum (SQ_S14)"* Genel olarak, Socrative testleri bazı öğrenciler için rekabetçi bir ortam sağlarken, diğerleri özellikle zaman kısıtlamaları, hata yapma ve geride kalma korkusuyla ilgili zorluklar ve kaygılar yaşamıştır. Bu faktörler performanslarını ve genel deneyimlerini olumsuz etkilemiştir.

Bir grup öğrenci, Socrative testlerine karşı "Sınırlı Etki ve İlgisizlik" tutumlarını çeşitli cevaplarla ifade etmiş, bunları eğitim deneyimlerine önemli bir katkı sağlamaktan ziyade ek bir araç olarak görmüştür. Bazıları testlerin ortalama veya nötr bir etkisi olduğunu düşünürken, diğerleri çok az etkisi olduğunu veya hiç etkisi olmadığını düşünmektedir. Birkaç öğrenci, testler sırasında nötr hissettiklerini veya herhangi bir duygu yaşamadıklarını belirterek duygusal yatırım eksikliklerini vurgulamıştır. Örneğin, bir öğrenci *"Hiçbir şey hissetmedim; sadece o anda doğru olduğunu düşündüğüm şeyi yaptım (SQ_S5)"* demiştir. Aynı öğrenci ayrıca *"Ortalama etkisi olmayan bir şey için stres yapmak mantıksız (SQ_S5)"* yorumunu yapmıştır. Genel olarak, Socrative testler bazı öğrenciler için ek bir değerlendirme aracı sağlamış olsa da, diğerleri bu testlerin sınırlı bir etkisi olduğunu düşünmüş ya da geleneksel yöntemleri tercih ederek bu testlere kayıtsız kalmıştır.

Bazı endişelere rağmen, birçok öğrenci Socrative testlerinin *"Öğrenme ve Kavrama"* değerini kabul etmiştir. Platformun öğrenme kavramlarını nasıl pekiştirdiğini ve materyali anlamalarını değerlendirmelerine nasıl yardımcı olduğunu takdir ettiler. Öğrenciler, öğrenilen bilgileri pekiştirmek için yararlı bulmuş ve iyileştirme alanlarını belirlemek için anında geri bildirimi takdir etmişlerdir. Bir öğrenci "*Bizi geliştirmek ve eğlendirmek için iyi bir etkinlikti (SFG_Erkan)"* derken, bir diğeri *"Öğrendiğimiz bilgileri pekiştirmek için önemliydi (SQ_S5)"* dedi. Sorulardan sonra yapılan kısa değerlendirmeler ve hatırlatmalar özellikle faydalı görülmüş, bir öğrenci *"Sorulardan sonra yapılan hatırlatmalar faydalı oldu (SFG_Sibel)"* demiştir. Genel olarak, bazı öğrenciler Socrative testlerinin konuyu öğrenmeleri ve anlamaları üzerinde olumlu bir etkisi olduğunu düşünmektedir.

Öğrenciler, Socrative testlerin *"Sınıf Dinamikleri"* üzerindeki olumlu etkisinin altını çizerek, bu testlerin akranlar arasında işbirliğini ve ekip çalışmasını teşvik ettiğini, daha ilgi çekici ve canlı bir sınıf atmosferi yarattığını belirtmiştir. Bir öğrenci "*Herkesin derse katılımını sağladı ve eğlenceli bir ortam yarattı (SQ_S16)"* derken, bir diğeri *"Atmosferi kesinlikle olumlu yönde değiştirdi (SFG_Zehra)"* gözleminde bulunmuştur. Ayrıca, bazı öğrenciler Socrative testlerin düzenli kullanımının sık pratik ve anında geri bildirim sağlayarak resmi sınavlardaki başarılarına katkıda bulunduğuna inanmaktadır. Bu hazırlık, zamanı etkili bir şekilde yönetmelerine ve sınavlar sırasında kendilerini daha güvende hissetmelerine yardımcı oldu. Bir öğrenci şöyle demiştir: "*Bence sınavlara iyi bir hazırlık oldu çünkü yeni kelimeler öğrendik (SQ_S4)"* Ancak birkaç öğrenci, zaman zaman değerlendirmelerin akışını bozan bağlantı sorunları gibi teknik konularla ilgili endişelerini dile getirdi. Buna rağmen, birçoğu erişim kolaylığını ve hızlı yanıt sürelerini takdir etti ve bir öğrenci *"Telefondan kolayca erişilebiliyordu (SFG_Betül)"* dedi. Genel olarak, Socrative testleri sınıf dinamiklerini geliştirmek, sınava hazırlanmaya yardımcı olmak ve genel olarak kullanıcı dostu olmak açısından faydalı görülmekle birlikte, bazı teknik sorunlara da dikkat çekilmiştir.

8.3.6. Altıncı Alt Probleme İlişkin Bulgular

Öğrencilerin kâğıt tabanlı formatif testler hakkındaki görüşlerini araştırmak bu çalışmanın altıncı alt problemiydi. Odak grup görüşmeleri ve formatif test anketleri, öğrencilerin geleneksel kağıt tabanlı değerlendirmeyle ilgili görüşlerini, tercihlerini ve deneyimlerini yansıtan nitel veriler sağlamıştır. Bulgular, öğrencilerin eğitim deneyimleriyle ilişkili olarak kâğıt tabanlı biçimlendirici değerlendirmeyi nasıl gördüklerine dair ayrıntılı bilgiler sunmaktadır. Önemli sayıda öğrenci, kâğıt tabanlı testlerle ilgili *zorluklar ve kaygı* yaşadıklarını bildirmiştir. Birçok öğrenci, genellikle kendilerini rahat hissetseler bile, test ortamında genel bir gerginlik duygusu hissetmiştir. Bir öğrenci, *"Genelde rahat hissediyorum ama yine de o ortamda bir gerginlik var (KQ_S14)"* demiştir. Bir diğeri ise gergin hissetmeye başladığını ancak teste başladıktan sonra daha odaklanmış ve rahatlamış hissettiğini paylaşmıştır: *"Başlangıçta gergin hissediyorum ama teste bakıp odaklandığımda daha rahat hissediyorum (KQ_S15)".* Sonuç beklentisi de kaygı duygularına katkıda bulunmuş, bir öğrenci *"Sonuçları gördüğümde gergin hissediyorum (KQ_S12)"* demiştir. Ayrıca, birkaç öğrenci yüksek puanlar elde etme baskısının öğrenme motivasyonlarını azalttığını belirtmiştir: *"Yüksek puanlar için çalışıyoruz, bu yüzden pek bir şey öğrenemiyoruz (KQ_S16)".* Bu görüş, kağıt üzerinde yapılan sınavların formatının ve beklentilerinin öğrenme motivasyonlarını olumsuz etkilediğini düşünen diğer öğrenciler tarafından da desteklenmiştir. Yetersizlik ve stres

duyguları sıklıkla dile getirilmiş, bazı öğrenciler başarısızlık ve hayal kırıklığı duygularını şu sözlerle ifade etmiştir: *"İngilizce konusunda kendimi yetersiz hissediyorum (KQ_S2)"* ve *"Zayıf yönlerimi ele almadığım için kendime kızıyorum (KQ_S5)"*. Bu sınavlarla ilişkili baskı ve stres genellikle performansın düşmesine ve materyalle ilgilenme konusunda isteksizliğe yol açmıştır: *"Yapamayacağımı hissediyorum ve sınavı bırakıyorum (KQ_S1)"*. Genel olarak, geleneksel kağıt tabanlı test ortamının öğrenciler arasında kaygı duygularını artırdığı ve motivasyonu azalttığı görülmüştür.

Birçok öğrenci, kağıt üzerinde yapılan testlerin *(Öğrenme ve Kavrama)* eğitsel değerini kabul etmiş ve bunları derslerde işlenen bilgilerin pekiştirilmesi ve sağlamlaştırılması için gerekli araçlar olarak görmüştür. Öğrenciler bu testlerin kendi ilerlemelerini ve anlayışlarını görmelerini sağladığını takdir etmiştir. Bir öğrenci *"Seviyemi görmek iyi bir şey (KQ_S12)"* derken bir diğeri *"Bence çoğu test öğrencilere katkı sağlıyor (KQ_S14)"* demiştir. Bu değerlendirmeler, öğrencilerin pratik yapmaları ve materyalleri gözden geçirmeleri için pratik bir araç sağlayarak zayıf yönlerini belirlemelerine ve ele almalarına yardımcı olmuştur. Birçok öğrenci, kağıt tabanlı testlerin gözden geçirme ve tekrarı kolaylaştırmadaki rolünü vurgulamış ve bunun öğrenmeleri için faydalı olduğunu düşündüklerini belirtmiştir. *"Tekrar için iyi (KFG_Serdar)"* ve *"Testler pratik yapmamıza ve zayıf yönlerimizi görmemize yardımcı oluyor (KQ_S3)"* gibi yorumlar bu bakış açısını vurgulamaktadır. Öğrenciler ayrıca, kavrayışlarını ölçmelerine ve bilgilerini geliştirmelerine yardımcı olan bu testlerden gelen geri bildirimlere de değer vermektedir. Bir öğrenci *"Konuyu anlayıp anlamadığımı gösteriyor (KQ_S8)"* derken, bir diğeri *"Tekrar yaptığımız için yardımcı oluyor, ancak testlerin sıklığı bunaltıcı olabiliyor (KQ_S13)"* dedi. Genel olarak, öğrenciler kâğıt üzerinde yapılan testleri öğrenme süreçlerinde bir araç olarak görmekte, gerekli alıştırmaları yapmakta, anlamaya yardımcı olmakta ve gelişime açık alanların altını çizmektedir.

Bir grup öğrenci ise kağıt testlere karşı ilgisizliklerini ve bu değerlendirmelerin öğrenmeleri üzerinde sınırlı bir etkisi olduğunu düşündüklerini ifade etmiştir *(Sınırlı Etki ve İlgisizlik)*. Birçok öğrenci, testlerin anlamaları veya motivasyonları üzerinde önemli bir etkisi olmadığını bildirmiştir. Bir öğrenci *"Çok fazla etkisi olduğunu düşünmüyorum (KQ_S2)" derken, bir diğeri "Hiçbir etkisi yok (KFG_Esra)"* demiştir. Bazı öğrenciler, *"Ne rahattım ne de gerildim (KQ_S6)"* ve *"Bazen iyi, bazen kötü (KQ_S1)"* gibi yorumlarla testlerin öğrenmelerine ne yardımcı ne de engel olduğunu düşünmektedir. Bir öğrencinin belirttiği gibi, bazı öğrenciler kendi dil becerileri nedeniyle testlerin özellikle yararlı olmadığını düşünmüştür: *"İngilizcem çok iyi olmadığı için testler beni etkilemiyor (KQ_S14)"*. Diğerleri, *"Hiçbir şey*

hissetmiyorum çünkü umurumda değil (KQ_S10)" ve *"Hayır, hiçbir şey hissetmiyorum (KQ_S14)"* gibi yanıtlarla, testlerle ilgili genel bir endişe veya duygusal yatırım eksikliğini ifade etmiştir. Genel olarak, bu öğrenciler kâğıt temelli biçimlendirici testlerin öğrenme deneyimleri üzerinde çok az etkisi olduğunu düşünmekte ve bu testleri genellikle ne faydalı ne de zararlı bulmaktadır.

8.4. Sonuç

Düzeltilmiş başarı puanlarının analizi, geleneksel kâğıt ve kalem değerlendirmelerinin, oyunlaştırılmış öğrenci yanıt sistemleri Socrative ve Kahoot'u geride bırakarak en yüksek ortalama başarı puanlarına yol açtığını ortaya koymaktadır. Bu bulgu, geleneksel değerlendirme yöntemlerinin etkinliğini vurgulayan önceki araştırmalarla uyumludur çünkü öğrenciler bu formatlara aşina oldukları için daha iyi performans gösterebilir, bu da rahatlığı artırır ve kaygıyı azaltır (Andrade & Cizek, 2010; Islam et al., 2017). Dikkat dağıtıcı unsurların azalması da kağıt tabanlı testlerde daha yüksek performansa katkıda bulunur (Andrade & Cizek, 2010; Karatekin, 2017). Socrative kullanan grup orta düzeyde puanlar elde etmiştir; bu da bu tür sistemlerin etkileşimi, odaklanmayı ve katılımı artırırken (Altwijri vd., 2022) her zaman en yüksek akademik performansa yol açmayabileceğini düşündürmektedir. Socrative'in faydaları arasında artan katılım ve azalan kaygı yer alsa da (Wood, 2020), başarı açısından geleneksel yöntemlere kıyasla yetersiz kalabilir. En düşük ortalama başarı puanları, yüksek katılım ve olumlu öğrenci algılarına rağmen (Licorish vd., 2017; Rahmahani vd., 2020), akademik başarı üzerindeki doğrudan etkisinin sınırlı olabileceğine dair önceki bulgularla tutarlı olarak Kahoot ile gözlemlenmiştir. Kahoot'un eğlenceli doğası motivasyonu ve sınıf dinamiklerini artırsa da (Ayten, 2022; Incekar, 2023), bu durum daha yüksek başarı puanlarına dönüşmeyebilir. Araştırmalar, Kahoot ve benzeri ÖYS teknolojilerinin katılımı ve motivasyonu artırırken bilişsel sonuçları önemli ölçüde iyileştirmediğini desteklemektedir (Rahmahani, 2020; Holmes, 2019; Altwijri vd., 2022; Wang vd., 2017). Nitel veriler bu bulguları daha da açıklıyor: Öğrenciler, bilgiyi pekiştirmede kağıt tabanlı testlerin eğitsel değerini kabul ediyor, bunları uygulama ve ilerleme takibi için gerekli görüyor, daha iyi akılda tutma ve daha yüksek başarı puanlarına katkıda bulunuyor. Örneğin, öğrenciler ilerlemelerini görmenin önemine ve zayıf yönlerini belirlemek için tekrarlanan alıştırmaların faydalarına dikkat çekerek kağıt tabanlı testlerin yapılandırılmış ortamının daha derin bir anlayışı teşvik ettiğini belirtmişlerdir.

Bulgular, kağıt ve kalemle değerlendirilen öğrencilerin en yüksek motivasyon puanlarını gösterdiğini, bunu Kahoot ve Socrative kullanıcılarının izlediğini ortaya koymuştur. Ancak, bu farklılıklar başlangıçtaki motivasyon seviyeleri kontrol edildikten sonra anlamlı

bulunmamıştır. Bu durum, değerlendirme yöntemi ne olursa olsun başlangıçtaki motivasyonun kritik bir rol oynadığını göstermektedir. Nitel veriler de bu bulguları destekler nitelikte olup öğrenciler hem oyunlaştırılmış hem de geleneksel yöntemleri motive edici bulmaktadır. *"Beni daha hırslı yapıyor (kağıt tabanlı)"* ve *"Rekabet ortamı beni motive etti (Socrative)"* gibi yorumlar, farklı yöntemlerin benzer şekilde motivasyonu artırabileceğini göstermektedir. Geleneksel yöntemler yapılandırılmış ve tanıdık bir ortam sağlayarak kaygıyı azaltmakta ve rahatlığı artırmakta, böylece içsel motivasyonu teşvik etmektedir (Andrade ve Cizek, 2010; Altwijri vd., 2022). Bu durum, geleneksel yöntemlerin de oyunlaştırılmış yöntemler kadar motive edici olabileceği fikriyle örtüşmektedir (Karatekin, 2017; Salen ve Zimmerman, 2003; Ayten, 2022; Tuttle, 2021).

Socrative kullanan öğrenciler en yüksek kaygıyı yaşarken, bunu Kahoot takip etmiş, kağıt tabanlı testler ise en düşük kaygıya neden olmuştur. Karşılaştırmalar, Socrative kullanıcılarında kâğıt tabanlı testleri kullananlara kıyasla önemli ölçüde daha yüksek kaygı olduğunu doğrulamıştır. ÖYS'lerdeki anlık geri bildirimler, öğrenciler performanslarının sürekli farkında oldukları için kaygıyı artırabilir (Tuttle, 2021). Kahoot ve Socrative gibi araçlardaki rekabetçi yapı ve zaman kısıtlamaları da kaygı düzeylerinin yükselmesine katkıda bulunur (Shaker vd., 2021; Cárdenas-Moncada vd., 2020; Ebadi vd., 2023). Buna karşılık, kağıt tabanlı testlerde gerçek zamanlı geri bildirim ve rekabet dinamiklerinin olmaması, daha sakin bir test ortamı yaratılmasına yardımcı olarak kaygıyı azaltır (Poon, 2013).

Öğrencilerin Kahoot testlerine ilişkin görüşleri, Katılım ve Eğlence ile Rekabet ve Motivasyonu en öne çıkan temalar olarak vurgulamıştır. Kahoot, Kiryakova ve diğerleri (2014) ve Bicen & Kocakoyun (2017) ile tutarlı olarak ilgi çekici ve motive edici bulunmuştur. Bununla birlikte, Zorluklar ve Kaygı ile Sınırlı Etki ve İlgisizlik, Rahmahani (2020) ile uyumlu olarak, eğitimsel etkinliğine ilişkin karışık algılara işaret etmiştir. Bazı öğrenciler Kahoot'u sınıf dinamikleri ve sınav hazırlığı için faydalı bulurken (Licorish vd., 2017; Yabuno vd., 2019), diğerleri nadiren de olsa teknik sorunların deneyimi etkileyebileceğini belirtmiştir (Holmes, 2019). Nicel veriler, Kahoot'un katılımı artırırken, geleneksel yöntemlere kıyasla en yüksek akademik başarıya yol açmayabileceğini, ancak motivasyonu önemli ölçüde artırdığını desteklemektedir.

Katılım ve Eğlence ile Rekabet ve Motivasyon temaları, öğrencilerin Socrative testlerine ilişkin görüşlerinde en sık rastlanan temalardır ve öğrenmeyi ilgi çekici ve eğlenceli hale getirdiğini göstermektedir (Kiryakova vd., 2014; Zichermann ve Cunningham, 2011a; Nah

vd., 2013). Bununla birlikte, Zorluklar ve Kaygı, Öğrenme ve Kavrama ve Sınıf Dinamikleri de anlamlıdır; bu da Socrative'in öğrenmeyi geliştirirken, özellikle kendine güveni az olan öğrenciler için kaygı yaratabileceğini göstermektedir (Juul, 2011; Oblinger, 2006). Sınırlı Etki ve İlgisizlik ile Sınav Başarısı, Socrative'in tüm öğrenciler için eşit derecede faydalı olmadığını vurgulayarak bireysel farklılıkların dikkate alınması gerektiğini ortaya koymuştur (Dicheva vd., 2015).

Kâğıt tabanlı testler için en sık kodlanan tema Zorluklar ve Kaygı olmuştur. Vygotsky'nin Yakınsak Gelişim Alanı (YGA) teorisine göre, öğrenme, uygun destekle öğrencilerin yeteneklerinin biraz ötesinde görevler verildiğinde en etkili şekilde gerçekleşir ve bu da bildirilen yüksek kaygı ile uyumludur (Vygotskiĭ & Cole, 1978). Kağıda dayalı değerlendirmelerde en yüksek ortalama başarı puanlarını gösteren nicel veriler de bunu desteklemekte, kaygı yaratmasına rağmen bu testlerin daha derin öğrenme ve kavramayı teşvik ettiğini göstermektedir (Poon, 2013). Öğrenme ve Kavrama teması da bunu teyit eder niteliktedir zira öğrenciler bu testlerin bilgiyi pekiştirmeye yönelik eğitsel değerini takdir etmektedir. Her ne kadar az sayıda öğrenci kağıt tabanlı testleri ilgi çekici bulsa da Kahoot ve Socrative gibi oyunlaştırılmış ÖYS araçları değerlendirmeleri daha ilgi çekici ve eğlenceli hale getirerek motivasyonu ve sınıf dinamiklerini artırabilir (Bicen ve Kocakoyun, 2017; Gündüz ve Akkoyunlu, 2020; Wang vd., 2017; Huang ve Soman, 2013; Tan ve Saucerman, 2017).

8.5. Öneriler

Eğitimciler, farklı öğrenme tercihlerini ve ihtiyaçlarını karşılamak için hem geleneksel kağıt tabanlı değerlendirmeleri hem de Kahoot ve Socrative gibi oyunlaştırılmış öğrenci yanıt sistemlerini (ÖYS) kullanmalı, yapılandırılmış öğrenmeyi ilgi çekici ve etkileşimli deneyimlerle dengelemelidir. Oyunlaştırılmış ÖYS araçlarının rekabetçi doğası ve zaman kısıtlamalarıyla sıklıkla ilişkilendirilen kaygıyı azaltmak için eğitimciler yeterli desteği sağlamalı ve düşük baskılı bir ortam yaratmalıdır. Öğretim tasarımcıları, bu araçların geleneksel yöntemleri tamamlamasını sağlayarak öğrenci katılımını ve motivasyonunu artırmak için oyunlaştırılmış ÖYS'yi müfredata dâhil etmeye teşvik edilmektedir. Araştırmacılar, oyunlaştırılmış ÖYS'nin öğrenci başarısı, motivasyonu ve kaygısı üzerindeki sürdürülebilir etkisini değerlendirmek için uzun vadeli çalışmalar yürütmeli, en iyi uygulamaları ve iyileştirme alanlarını belirlemek için bu araştırmayı çeşitli eğitim ortamlarına ve öğrenci örneklemlerine genişletmelidir. Genel olarak, oyunlaştırılmış ÖYS'nin uygulanması, olumlu ve etkili bir öğrenme ortamını teşvik etmek için eğlence ve eğitim değeri arasındaki dengenin korunmasını gerektirir.