

A Qualitative Meta-Analysis of Kahoot! in Language Instruction

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Abstract

Mobile- and computer-based applications have become more prominent and popular since the COVID-19 pandemic. Digital tools have been used by teachers and students worldwide for educational purposes and in language classrooms. One such application is Kahoot!, which is an in-classroom or online testing and practice application released in 2013 and widely used in a variety of classrooms for entertaining practice for students, and a way for teachers to test students' gains. Even though Kahoot! is extensively used and researched in language teaching/learning contexts, a meta-analysis of studies with particular focus on qualitative findings has been out of radar. This proposal addresses this gap by offering an in-depth meta-analysis of qualitative studies and findings investigating the application. Research articles utilizing qualitative methods published between 2013, Kahoot!'s official beta release, and 2022 were gathered and analyzed to reveal trends, limitations, and gaps in the literature. The findings revealed that the majority of students and teachers who participated in Kahoot! quizzes reported positive sentiments, though several concerns were raised regarding their effective use. This analysis suggests that improving instructional effects in educational settings hinges upon well-informed decision-making processes, skilful classroom management, and proficient computer literacy. When strategically employed, these factors can significantly enrich educational practices.

Keywords: Kahoot!, computer-assisted language instruction, qualitative meta-analysis

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Introduction

The increasing popularity of Web 2.0 and information and communication technologies (ICT) has led to the widespread adoption of various digital tools and platforms in language education. These tools encompass Computer-Assisted Language Learning (CALL), Mobile-Assisted Language Learning (MALL), and assessments through applications and websites. They serve a range of purposes, including facilitating communication and online classrooms (e.g., Zoom, Teams, Cambly), providing self-practice and testing opportunities (e.g., Duolingo, Memrise, Elsa), and supporting in-classroom practice tests (e.g., Kahoot!, Socrative, and Quizziz).

One noteworthy educational application that gained popularity prior to the onset of the COVID-19 pandemic is Kahoot!. This versatile platform serves as an interactive testing game designed for both classroom and online use. Kahoot! serves a spectrum of purposes ranging from providing entertainment to facilitating the testing and practice of acquired knowledge. The application hosts an extensive array of tests that can be accessed and implemented by groups of up to 20 users in the free version and up to 50 users in the premium version. Additionally, users have the flexibility to create their own tests and adapt the assessments generated by other users to suit their specific groups. In the Kahoot! environment, participants are prompted to join the test using their mobile devices or computers. Once the test commences, participants can select the correct options using the application, which can be downloaded onto their mobile devices, in response to questions displayed via a screen or projector. The correct answers are scored by the application, taking into consideration how quickly the participants answered the questions. At the end of each test, a scoreboard is displayed, highlighting the top three participants while the statistics for the test are recorded and stored on the profile of the test moderator. The scoreboard displays the performance of each test-taker for each question, as well as the classroom percentages for each question individually.

Literature Review

Kahoot!

The application Kahoot! has been investigated in several studies in various contexts. Kahoot! was investigated in terms of its effects on Turkish learning motivation and success (Batıbay, 2019; Tıraşoğlu, 2019) among foreign learners in Türkiye. For English learning, Kahoot! has been investigated with an emphasis on the gamification and attitudes of teachers and students (e.g., Bozkurt Türk, 2019; Emecen, 2019; Nurhadianti & Pratolo, 2020; Puğ, 2020; Rahman et al., 2019; Ünal, 2018). Frequently, Kahoot! was studied and tested as a means of teaching, learning, and retention of vocabulary skills (see Bozkurt Türk, 2019; Emecen, 2019; Hamedı et al., 2022; Tıraşoğlu, 2019; Ünal, 2018) both in Turkish and English education.

As the main performers of the practice, the opinions of students and teachers were gathered and analyzed by the aforementioned researchers. The findings based on surveys and interviews reveal that both students and teachers believe that Kahoot! proved

to be a motivating, entertaining, engaging, and interactive means of practising their language skills. The study by Puğ (2020) showed that there was a correlation between students' proficiency and the positivity of their experience with Kahoot!. Puğ (2020) also found that teachers' preference to use the application was higher the younger they were. However, despite the overall positive results from the data gathered from participants, the results of the pre- and post-tests revealed a consistent lack of improvement in students' language achievements (Bozkurt Türk, 2019; Ünal, 2018) with one exception (Emecen, 2019), which showed that compared to the pre-tests, the control group's scores on a vocabulary retention post-test showed a sharper downward curve than those of the experimental group who practiced vocabulary through Kahoot! weekly in the classroom. Studies that performed experimental procedures in foreign-language classrooms using Kahoot! showed no statistically significant differences between the pre- and post-tests or in comparison with the control groups.

Previous Meta-Analyses of Kahoot!

Several meta-analyses (e.g., Wang et al., 2021) have been performed on Kahoot!, although no focus solely on qualitative findings was found in the literature.

Although several meta-analyses have been conducted on Kahoot! in the quantitative spectrum, there are no studies focusing solely on the qualitative findings of studies on the application. A qualitative meta-analysis can offer a concise and comprehensive picture of findings" on the subject investigated, providing researchers with brief but thorough evidence on the methods and procedures employed and the findings reached (Timulak, 2009, p. 591). Therefore, in addition to insights into quantitative findings, a qualitative meta-analysis of Kahoot! is also required. The following research topics for this study were resolved through a review of the qualitative literature.

1. What are the most frequent and salient findings of the Kahoot! as a language-testing instrument?
2. What suggestions can be offered to teachers for enhancing the Kahoot quiz experience and resolving any encountered challenges?

To this end, the present study aims to create a compilation of and analyze qualitative findings of completely qualitative studies, or qualitative methods and findings of studies in which a mixed-method approach was employed.

Method

For the present study, data were gathered from studies found within the EBSCOhost and Dergipark databases as well as with the assistance of Google Scholar. With the purpose of providing knowledge, the three tenets of qualitative analysis, the building, explication, and development of theories, identified by Schreiber et al. (1997) were followed. To

access articles that employ qualitative methods either mainly or as an additional asset, Boolean queries were used by the researchers.

Qualitative Meta-Analysis

The history of the meta-analysis method dates to the 17th century (O'Rourke, 2007). In essence, a meta-analysis can be described as "a way of quantifying replications of a study" (Fraenkel et al., 2012, p. 177) and aims to overcome the constraints inherent in individual studies. Although the majority of meta-analyses are created mostly in the quantitative category, they can also be performed on qualitative literature and findings to synthesize and review them. Guzzo et al. (1987) acknowledged that excluding or disregarding qualitative findings and reports could create a bias in scientific reports. Indeed, as meta-analyses are regularly performed with quantitative literature as the main consideration, qualitative studies are often neglected. This observation provides another impetus for the present study.

Selection of Studies

According to Timulak (2009), researchers should be mindful of their commitment to the subject and how it may influence study selection. Throughout every step of the process, the list of studies was reassessed to ensure that no relevant studies were missed, and no irrelevant studies were added to the database. Through compilation, synthesis, and explanation of the qualitative literature on Kahoot!, the aim of the present study was to contribute to the literature on Kahoot!.

The primary emphasis of this study lies in the realm of qualitative findings, encompassing both qualitative and mixed-method research studies with a qualitative orientation. The selected studies delved into the effects and attitudes of both students and teachers, experiments, interviews, and assessment processes related to language teaching and learning through the integration of Kahoot!. To ensure accurate search results, we focused on keywords entered into the search bars of various databases. The researchers utilized their experience and knowledge in testing, and also consulted relevant academic literature, when necessary, to gain valuable insights. The following keywords were chosen for the search:

- Kahoot (or) Kahoot!
- English (or) EFL (or) ESL
- Language teaching (or) Language learning
- Assessment (and/or) testing

As stated above, the inclusion criteria were employed to limit the search to qualitative findings. To this end, the following keywords were used when necessary:

- Qualitative

- Case Study
- Interview
- Field Study
- Ethnographic (or) Ethnography
- Focus Group
- Grounded theory
- Observation or observational
- Phenomenology, phenomenological (or) phenomenon

In the case of databases that allow for the search of qualitative literature, keywords to filter out non-qualitative studies were not used. Additionally, the references of studies that fit the criteria were reviewed for further studies that fit the standards. Using the keywords above, the Boolean query below is generated. ("Kahoot" OR "Kahoot!") AND ("English" OR "EFL" OR "ESL") AND ("Language teaching" OR "Language learning") AND ("Assessment" OR "testing") AND ("Qualitative" OR "Case Study" OR "Interview" OR "Field Study" OR "Ethnographic" OR "Ethnography" OR "Focus Group" OR "Grounded theory" OR "Observation" OR "Observational" OR "Phenomenology" OR "Phenomenological" OR "Phenomenon")".

Using this query, the researchers cautiously collected digital documents from publications that included the specified keywords. After careful examination and classification, papers were reviewed. Articles written in other languages were omitted from the list given the researchers' proficiency in English and Turkish. Articles examining Kahoot! in contexts other than language teaching were also removed. The remaining documents were then separated into groups according to their methodological approaches, separating those that utilized qualitative methods exclusively from those that included quantitative evaluation. Once the sorting sequence was completed, the articles that fit the target characteristics were organized into a dataset. The total number of articles proceeded with was 60.

A significant challenge encountered by researchers during the execution of a meta-analysis pertains to article selection. Instances may arise when researchers perceive the need to discriminate between well-and poorly designed studies. Nevertheless, as advocated by Fraenkel et al. (2012), we adopted an approach of equal weight to all studies during the initial query, with a subsequent judgemental review conducted.

Data Analysis

Once the scan was completed, the literature was analyzed. Initially, the methods and findings of each study were analyzed and synthesized individually. The relevant findings were then compared and contrasted in the categorized groups. To organize the articles,

a dataset on Google Sheets was created with columns for the publication year, type (qualitative or mixed method), aim, method, sample, summary of findings, and frequent themes. Before organization, each document was renamed with a corresponding number, which was inserted into the same rows as the articles. Figure 1 displays a section of the worksheet to better demonstrate the organization process.

Figure 1

Organizing Data Using Google Sheets

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	A	B	C	D	E	F	G	H	I
1	Author/s	#	Type	Year	Aim	Method	Sample	Findings	Themes
2		1	Discarded						
3	Şad & Özer	2	M	2019	report tea	case study,	88 TeCa	highly posit	entertainment educative, language retention +, repeat, revise
4	Polat	3	Q	2019		phenomen	116 TeCa	majoirt stat	aparticipation motivation, concentration competition repetit
5	Bicen & Kocak	4	M	2018	to determ	case study	65 TeCa	positive atti	entertainment, confidence, cognitive skills, + competition, mot
6		5	Discarded						
7		6	Discarded						
8		7	Discarded						
9	Nadeem & Alfa	8	Q	2020	investigate	action rese	70 f uni sts	positive eva	effective feedback, meta-cognitive skills, competition, motivatio
10	Verdiyanti	9	Q	2019	investigate	quali forme	single teach	kahoot prov	effective feedback, classroom participation
11	Hadijah et al	10	Q	2020	This resea	sem struct	5 HiSchl sts	kahoot is pr	motivation , attention, entertainment, encourages interaction,
12		11							
13	Pahamzah et a	12	M	2021	kahoot coi	action rese	26 uni sts	positively ef	entertainment, engaging,
14		13	Discarded						
15	Amin & Dahnia	14	Q	2021	sts attitud	interview	12 uni sts	positive atti	entertainment, interesting, short time for questions, internet a
16	Kurnia & Rahm	15	Q	2020	behaviour	case study	7 HiSchl sts	benefits and	entertainment, retention, short time for Qs, internet connecti
17	Putra et al	16	Q	2022	tudents' p	open ended	10 uni sts	benefits and	competition, encouraging, motivation, entertainment, attracts
18		17	Discarded						
19		18	Discarded						
20		19	Discarded						
21		20	Discarded						
22	Muhridza et al	21	Q	2018	observe th	interviews	29 uni sts	useful in ini	entertainment, competition, group mode helps cooperation, ir
23		22	Discarded						
24		23	Discarded						
25		24	Discarded						
26	Akkuş et al	25	Q	2021	measure t	case study	12 TeCa	positive atti	participation, repetition, motivation, attention, takes too muc
27		26	Discarded						
28	Uzunboyulu et	27	Q	2020	determine	sem struct	38 TeCa	candidates i	motivation, assessment, easy,

Following an intensive and meticulous process involving organization, coding, and the subsequent development of thematic structures, the data were deemed ready for analysis through the counting of codes.

Findings

The initial observations indicated a gradual increase in research focused on Kahoot! as a language-testing tool, a trend notably amplified by the global impact of the COVID-19 pandemic. Table 1 provides an examination of the accessed research articles, organized by their publication years, spanning from Kahoot!'s from 2013 to 2022.

Table 1

Number of Studies Accessed by Year of Publication

Year	2016	2017	2018	2019	2020	2021	2022	Total
N	1	1	4	9	15	19	11	60

Although no studies were found between 2013 and 2016, the number of studies has increased over the years. Upon analyzing the aims of the studies, it was found that a majority of them explored the views, attitudes, and experiences of the students. Of the 60 studies reviewed, only three delved exclusively into the perspectives and attitudes of teachers, while 11 focused on those of teacher candidates regarding the application. The majority of the studies (35 in total) focused on university students as their primary sample. In contrast, 12 studies predominantly involved high school students, and only two studies utilized elementary students as their main sample group. Among the studies with students as the primary focus, six also incorporated input from the teachers of students as an additional source of data. The studies usually focused on teacher and student perceptions, learning and engagement with Kahoot!, assessment of learning with Kahoot!, reading comprehension and vocabulary development as well as general effectiveness of Kahoot! use.

Considering the qualitative methods, the distribution is as follows: case study ($n = 7$), phenomenology ($n = 7$), action research ($n = 6$), descriptive qualitative ($n = 30$), and exploratory ($n = 10$). Qualitative data were collected using various methods: 39 interviews (including structured, semi-structured or focus group sessions), 15 observations, and 23 open-ended survey forms.

As for the contexts, it is evident that most of the studies were conducted in Indonesia, Türkiye and Malaysia. Specifically, Indonesia was the most frequent context with 27 studies conducted there. Türkiye followed with 11 studies, and Malaysia with 6 studies. Other countries included in the data were Iran with 2 studies, Korea with 2 studies, Vietnam with 2 studies, and Saudi Arabia with 2 studies. Additionally, single studies were conducted in Oman, Russia, Singapore, Taiwan, the UAE, and the UK.

Empowering Learning Through Kahoot!: Unveiling the Benefits

While examining and organizing the gathered studies, a wide range of findings emerged. These included the expected common trends and salient themes. This thorough analysis provides valuable insights into this subject matter.

Table 2

Beneficial Aspects of Kahoot!

<i>Cognitive gains</i>	<i>Affective gains</i>	<i>Social gains</i>
Vocabulary retention	Entertainment	Participation
Engagement	Decreased anxiety	Cooperation
Learning and comprehension	Increased motivation (e.g., through instant feedback)	Competition

Among the most frequent themes, the positive effects of Kahoot! on motivation were the most recurrent ones, appearing in the findings of 53 studies, which was roughly 80% of the studies. While demotivation also occurred within the findings, induced by technical issues, competition, lack of preparation on the part of the teachers, and other factors, it was not observed to be common, with only three instances observed. As per Saracoğlu and Kocabatmaz (2019), Kahoot! was often noted for its visually appealing interface, accompanied by music, competition, and interaction, which collectively served as attractive elements motivating students to actively participate in and prepare for the quizzes. Chen (2022) outlined several themes that contributed to the heightened student motivation facilitated by Kahoot!, including factors such as "novelty," "interest," "game-like" experiences, and the creation of a "good atmosphere" good atmosphere' (p. 1459). This motivation manifests in various forms and exerts a positive influence on other aspects. For instance, students' motivation to study is bolstered by Kahoot!, as reported by Alharthi (2020), who observed that lower-scoring students were motivated to enhance their performance. Likewise, a student from the study by Tao and Zou (2021) mentioned actively reviewing the material they anticipated might be covered in the quizzes to secure a higher score.

The articles revealed that students exhibited heightened motivation to actively participate, including those who were typically more reserved in the classroom. For instance, one study found that even a student who had a tendency to be distracted by their mobile phone and rarely participated in class was eager to take part in Kahoot! quizzes (Reynolds & Taylor, 2020). Another study reported similar observations, affirming that Kahoot! notably enhanced students' motivation to actively participate (Holbrey, 2020). Furthermore, Sercanoğlu et al. (2021) highlighted that along with improved learning motivation, there was a concurrent reduction in exam anxiety. Gamified elements of Kahoot! were attributed to this positive attitude shift. Alawadhi and Ayyash (2021) identified sub-themes of competition and enthusiasm that played a pivotal role in motivation. Students expressed those competitive aspects served as a powerful incentive for their studies, and seeing their names on the leaderboard further fuelled their motivation. It is worth noting that competition, as a theme, frequently intersects with motivation, as observed in several studies that report on the competitive elements of

Kahoot! quizzes (e.g., Hadijah et al., 2020; Saracoglu & Kocabatmaz, 2019; Sercanoğlu et al., 2021). It is also important to acknowledge that while less prevalent than positive findings suggest, competition also emerged as a recurrent negative theme. This theme, along with its particularly nuanced manifestations, is discussed in a separate section.

There was a noteworthy interplay between themes, with some occurring in tandem and mutually reinforcing one another, contributing to a positive learning environment. The correlation between themes is discussed in detail.

The second most prevalent theme that emerged from the qualitative findings of the reviewed studies was entertainment, with 41 instances of mention. Kahoot! received consistent praise for its entertaining attributes and was often praised as an effective gamification tool. The reasons for this entertainment, as shown by the data, were that it enabled learners to collaborate or compete with one another in an effort to win or appear on the leaderboard. Participants in the qualitative studies frequently mentioned that Kahoot! enabled them to learn while enjoying the gamified elements. The examined studies revealed that Kahoot! served as a source of motivation and entertainment for various capacities. Therefore, students who are more leaned towards edutainment may be motivated by Kahoot! quizzes. Moreover, these studies frequently underscored the significance of individual differences and the advantages of gamification. Similarly, Şad and Özer (2019) reported that a sense of entertainment had a substantial positive impact on formative assessment through Kahoot! particularly from an attitudinal perspective. This was predominantly attributed to Kahoot!'s gamified nature, particularly the competitive environment it induced, which not only motivated and entertained, but also actively engaged learners.

Kahoot! appears to serve a dual purpose, benefiting both learners and educators. Beyond its role in engaging learners and reinforcing language skills, Kahoot! is also praised for fostering a sense of healthy competition, encouraging interaction, and motivating students to study. For teachers, it proves to be a valuable tool that can help them assess and plan consecutive courses. For instance, in the study by Şad and Özer (2019), it was found that Kahoot! aided in reviewing previously taught subjects and allowed instructors to identify areas that may require further attention. Reports and feedback functions of Kahoot! empower educators to make timely adjustments to their teaching methods, ultimately enhancing their learning process.

Commonly stated, both by learners and instructors was how convenient Kahoot! was to use for both parties. Teachers can easily prepare, broadcast, and initiate tests within the classroom or use tests created by other users, while students with smartphones can easily download the application and enjoy the experience without having to log in using any credentials, requiring only the passcodes displayed on the main screen to enter. Twenty studies found that Kahoot! was an easy-to-use testing tool for both the undertaking and assessment processes, and convenience of use was the fifth most frequent theme. Both students and teachers frequently enjoyed Kahoot! for being an application that was practically easy to use, particularly in terms of unfamiliarity, because of its simple and

user-friendly layout. A significant number of students echoed this sentiment. For instance, Uzunboylu et al. (2020) specifically commended the software for its practicality and ease of interface. Polat (2019) reiterates this point by drawing upon the perspectives of candidate teachers. This idea is further supported by Nadeem and Alfalig (2020), who emphasize the usability of mobile device applications and claim that interacting with the quiz on their mobile devices made the process easier. In another example, Sercanoğlu et al. (2021) acknowledged a user-friendly interface as a noteworthy feature.

While anxiety was a prevalent theme due to the competitive aspects of Kahoot!, the fact that students could remain anonymous by using nicknames instead of their names mitigated such anxiety, as reported by Kim (2019), who revealed that students viewed anonymity as one of the advantages. Additionally, most studies indicate that the feeling of anxiety is reduced through Kahoot! quizzes. Rajabpour (2021) also highlighted anonymity as a beneficial feature that increases engagement and decreases anxiety. The ability for students to participate in quizzes anonymously also emerged as an entertaining mini-game students would play while participating. Students disguising themselves through nicknames appeared to be an enjoyable activity (Fajar & Wenni, 2019). As noted in the study by Rojabi et al. (2022), Kahoot! displayed the ability to keep learners engaged and motivated in an entertaining learning atmosphere, thereby decreasing their anxiety. Similarly, Thach and Diem (2022) reported that students found enjoyment in the anonymity offered by Kahoot! quizzes, stating that “leveraging anonymity as a game element attracted more people to play” (p. 150). Hadijah et al. (2020) noted that students felt comfortable being in control of the amount of interaction by joining quizzes anonymously. Furthermore, Licorish et al. (2018) reported that Kahoot! concentrated students' attention on the quiz topics and other students' opinions rather than encouraging them to compare their own results with those of their classmates. It was also mentioned that anonymity created an environment in which learners felt less exposed while answering questions.

Likely due to their entertaining and innovative nature, Kahoot! tests were viewed by students and teachers as engaging activities, helping even those who did not contribute much to the classes to become involved. Participants commonly stated that, with Kahoot!, they were motivated to perform the tests, and their passion for classes increased. The number of the theme “engagement” within the investigated studies was 18.

The competition that is present while playing Kahoot! quizzes was a frequently mentioned theme in a total of 33 studies. Most students and teachers praised the competitive elements and enjoyed them thoroughly. From an examination of the findings of the interviews with students from the study of Bicen and Kocakoyun (2018), the competitive atmosphere produced an array of positive emotions, notably enthusiasm, enthusiasm for class engagement, and willingness to attend class. Ebadi et al. (2021) reported that although most students found the competitive aspect of the game and their positive outcomes to be motivating and encouraging them to continue playing, it was also noted that students who struggled with English felt demotivated as they consistently observed other students answering questions more quickly and accurately, and they needed more

time to respond. Indeed, such experiences may motivate students to study further to achieve success. They also serve as early warnings for students whose English skills are too weak to study more.

The themes of cooperation and collaboration emerged consistently across multiple studies, underscoring their high importance, especially while playing in the team mode, where winning often hinges on effective interaction and discussion. Additionally, the theme of interaction featured prominently, praising *Kahoot!* for facilitating many opportunities for interactions among students, between students and teachers, and with the language features they were learning (e.g., Adhitama et al., 2022; Alfaruqy & Setyawan, 2021; Nurhadianti & Pratolo, 2020; Thach & Diem, 2022). *Kahoot!* was also observed to increase the concentration levels of the students during the classes so that they could correctly answer the questions and increase their scores.

Many of the qualitative findings emphasized that *Kahoot!* played a significant role in supporting students' learning and comprehension of language features, with this theme being separately mentioned in 18 studies. Throughout the analysis, a significant topic was that *Kahoot!* advanced students' processes of language acquisition in various ways. Along with its motivating role during the activity, *Kahoot!* was referred to as an effective tool for improving students' concentration, participation, retention, interaction, communication, cooperation, and collaboration within classrooms. However, a noteworthy finding by Mahbub (2020) indicated that students tended to focus more on the competitive aspect of the quizzes than on the actual questions or the learning process. Despite this, the element of competition was consistently and frequently mentioned as a motivator for students to pay closer attention to the language features being taught, driven by their desire to achieve higher scores. In contrast, a student participant from the study by Marsa et al. (2021) expressed feeling a sense of obligation to engage with the course content in order to be able to participate in *Kahoot!* quizzes. In another study by Fajar and Wenni (2019), participating students highlighted that an enjoyable classroom atmosphere generated when students engaged in a time-limited game of speed and precision was an advantage offered by the application. This encouraged them to approach learning activities with greater enthusiasm. Additionally, Nugroho (2021) reported that *Kahoot!* enhanced students' focus and quick thinking, thereby improving their reading comprehension skills and honing their ability to better understand content.

Kahoot! was tested and confirmed as a more effective way to conduct English vocabulary testing than conventional methods, and vocabulary retention appeared to be stronger when practiced through the application. The assistance provided by *Kahoot!* in enhancing the retention of acquired language skills, and features emerged as a prominent and frequently mentioned theme in both student and teacher interviews. Following classes, the implementation of *Kahoot!* was acknowledged as a promoter of memory and a means of repeating hard-to-understand tasks (Tao & Zou, 2021). The aggregation of findings also showed that the retention of subjects learned in class was stronger when the same subjects were tested using the *Kahoot!* in comparison to conventional testing methods. Similarly, findings from interviews conducted by Nurlaela

and Nawir (2020) illustrated that students found it more convenient to recall words they had practiced through Kahoot! quizzes. Moreover, Rojabi et al. (2022) provided an example of a student who reported the ease of use especially in terms of practicing grammar and vocabulary. To solidify this retention, the theme of repetition, identified as needing more emphasis, was frequently raised across the nine studies. A student from the study of Akkuş et al. (2021) specifically emphasized that through Kahoot! quizzes, they were able to reinforce their learning and retain what they learned.

In a comprehensive total of 21 studies, Kahoot! is directly mentioned as significantly boosting student participation through the combined features of competition, entertainment, and interaction. Students in Polat's (2019) study also stated that Kahoot! made them more dynamically involved in class, ensuring that everyone actively participated in classroom activities to excel in the quizzes. According to Nadeem and Alfalig (2020), Kahoot! helped students learn the material and engaged them through the quizzes. A participant in a study by Akkuş et al. (2021) stated that Kahoot! quizzes rendered classes more captivating, expressing a desire for integration into all the courses. Additionally, students noted that the quizzes sparked their interest in courses with which they were not typically motivated to engage, underscoring the motivational impact of Kahoot!. The introduction of new features in Kahoot! was also lauded by participants in the study by Ebadi et al. (2021).

Remarkably, several students from various studies lauded Kahoot! because of its ability to provide immediate feedback, a feature that is not readily achievable with traditional assignments or regular quizzes. A student from the study Nadeem and Alfalig (2020) highlighted the practical use of immediate feedback. This immediate feedback mechanism is considered highly beneficial. Supporting this, Kaur and Nadarajan (2020) emphasized this aspect, noting that students could effectively monitor their own learning progress. Additionally, Verdiyanti (2019) highlighted Kahoot!'s effectiveness in delivering feedback, both to students by indicating whether their answers were correct and to teachers by revealing the extent to which the classroom comprehended the content and identifying areas where individual students may have struggled. Importantly, Kahoot! offers teachers comprehensive quiz reports, detailing which questions posed the greatest challenge and which students may require additional assistance. This robust feedback system facilitates student self-assessment and teacher intervention, thus enhancing their learning experience. The acquisition and retention of course materials has emerged as one of the most frequently praised aspects of Kahoot! quizzes with 17 instances in separate studies. In one instance, a participant in Hadijah et al. (2020) stated that they found Kahoot! to assess vocabulary to be particularly intriguing and that they could enjoy the exam because it was distinct from the previous methods used.

These findings suggest that the use of Kahoot! could strongly benefit students in improving their learning experiences and the attention spans of the learners and improving the likelihood of what was learned in the long term.

Negative Experiences and Difficulties with Kahoot!

Most of the findings on Kahoot! appeared to point in a positive direction, difficulties with the process were also emphasized by the findings. The sources of the negative aspects of the application can be categorized into four groups: students, instructors, the application itself, and technical issues. To demonstrate this categorization more effectively, Table 3 shows each source of complications within dedicated columns:

Table 3
Potential Drawbacks of Kahoot!

	Student-induced problems	Teacher-induced problems	Problems with Kahoot!	Environmental & Technical problems
Individual	-Internet access and/or speed -Mobile device access or processing power -Digital literacy -Familiarity with Kahoot! -Blind guessing	-Digital literacy -Familiarity with Kahoot! -Technological "know-how" -Creating questions with a short timespan -Not allowing enough time for discussions	-Questions only displayed on the main screen	-Visibility due to display device -Slow or non-existent internet connection -Slow mobile devices
Disruptive	-Overexcitement -Noise -Announcing answers			

The student-sourced issues observed can be divided into two categories: those that affect the individual and those that disrupt the process and outcome. The student-sourced problems affecting individual students were the lack of Internet access, the absence or low processing power of mobile devices, a lack of digital literacy or familiarity with the application, and blindly guessing the answers to some questions. Issues that disrupted the order of the process and the outcomes were that (a) some students would become overexcited and loud, distracting others and (b) some students would loudly announce their answers to the classroom, defeating the purpose of the application. Problems caused by teachers consist of providing a short timespan for each question; therefore, the test as a whole, lack of familiarity with the application, and lack of technological "know-how." One problem arising from the application itself was that the questions were displayed only on the main screen and not on the individual devices used by the test takers, causing confusion or even failure. Another problem, that could not be attributed to the teachers, but was more of a technical one, was that the application would often be displayed via a projector, which could not be seen all the time by the students due to light conditions, lack of calibration, or complications with eyesight. While these issues can be solved to some extent by the teacher, they are not solely a teacher's responsibility or fault.

A significant issue reported by both students and teachers was the inconsistency in internet accessibility. This inconsistency not only posed challenges for students, but also had the potential to lead to unfairness in participation, ultimately resulting in decreased motivation and enjoyment. Moreover, students facing issues such as low battery capacity, slower mobile phones, or those without access to mobile devices may encounter difficulties or be unable to fully engage in Kahoot! quizzes. Additionally, considerations of screen brightness and visibility, particularly with projectors, were also highlighted by students as noteworthy factors. Students expressed concerns that Kahoot! consumed their Internet data quotas and posed challenges for those with slow Internet connections, as indicated by a participant from the study by Polat (2019). Additionally, one student pointed out that although the quizzes were intriguing, the network had to be stable for a fulfilling experience, based on the results reported by Amin and Dahnial (2021). Chen (2020) also reports concerns with internet connections and response speed. The interview subjects in Muhridza et al. (2018) acknowledged that having a poor Internet connection presented challenges.

Accessibility poses another challenge, rendering Kahoot! impractical in classrooms lacking projectors, large screens, or stable Internet connections. Although team games can mitigate this, requiring only one mobile device per group, schools with limited access to technological resources and a stable Internet connection may miss out on the benefits of Kahoot!. This issue is particularly prevalent in elementary schools. Problems with projectors were noted by Saracoglu and Kocabatmaz (2019), who mentioned that viewing the projected text was visually unappealing. Similarly, Akkuş et al. (2021) reported that students faced difficulties viewing questions on projections and providing answers via their phones, as the questions and related options were displayed solely on the projection or classroom screens. While Kahoot! effectively encourages student activity, participation, and interaction, and some students raise concerns about the noise it generates in the classroom. Şad and Özer (2019) cited a student who mentioned that they struggled to utilize the given response time owing to the noise level. To address this, they suggest establishing rules and politely instructing students to maintain decorum. Additionally, Holbrey (2020) noted that a significant number of students were distracted and bothered by noise from their peers. The level of students' technological proficiency and familiarity with using such applications may significantly influence their motivation to participate and engage in Kahoot! quizzes, as indicated by Chen (2020). In addition to students' proficiency, teachers' digital literacy also plays a crucial role, as they are typically responsible for creating and overseeing quizzes. This perspective, emphasized by Hadijah et al. (2020), places significant emphasis on the information and communication technology (ICT) skills of teachers. Muhridza et al. (2018) argued that students felt at ease with Kahoot! quizzes. This educator was noted to efficiently oversee the game, provide assistance with internet connectivity for those in need, and motivate teams to strive for higher scores.

A recurring concern raised by the students was the perceived shortage of time and opportunities to engage in discussions about their answers, including both correct and incorrect answers. According to an account provided by Pratolo and Loffi (2021), a

student participant raised an issue regarding the limited opportunity for direct discussion with the teacher. This student pointed out that, due to the timed nature of the game, most questions could not be adequately addressed within the given timeframe. While a lack of discussion about answers and mistakes emerged as a salient theme, it was more frequently noted that Kahoot! quizzes provided ample opportunities and encouragement for students to deliberate their responses. As a result, students found themselves more actively engaged with the material, driven by the competitive nature of Kahoot!. The fact that pupils felt obligated to have discussions with their peers served as an example. According to a study by Adhimata et al. (2022), Kahoot!'s competitive element has heightened students' interest in the subject matter since they are required to work together with one another. It is worth noting that this benefit appears to be particularly pronounced in the team game mode and may not be as visible in quizzes where all students participate as individuals. Fajar and Wenni (2019) made significant observations, noting that students who played individually often found themselves with few opportunities to discuss their answers. In contrast, in team mode, they had the chance to discuss with their teammates before finalizing their responses. This dynamic of interaction and discussion during the quiz was confirmed by the observations of Marbun and Harpain (2016).

The competition factor is also noted to potentially induce demotivation and anxiety among students. This arises from their desire to secure their position on the leaderboard once the quiz is concluded. In contrast, the theme of encouragement emerged distinctly on six occasions, signifying Kahoot!'s capacity to motivate students to actively participate and engage in studying to excel in the competition. However, the aspect of competitiveness might have a double-edged effect in this situation, which is imperative for teachers to acknowledge. Higher levels of demotivation and anxiety could make it more difficult for students to develop language skills and comprehension. This is particularly true when they find themselves without answers to the questions, yet still aspire to claim the top position. Naturally, the prospect of experiencing anxiety during a quiz can paradoxically serve as a source of motivation, compelling students to actively learn and commit language features to memory.

Additionally, Nadeem and Alfalig (2020) reported that students highly valued teachers pausing the quiz and taking the time after each question to facilitate discussions and explain the correct answers. These findings, drawn from both observations and students' opinions, underscore the critical role that during and post-quiz discussions play in the learning process and how they can significantly enhance the educational impact of the quizzes.

Discussion

As a rapidly developing method for testing, gamification using digitalized applications such as Kahoot! proved to be more effective than conventional methods in almost every aspect. While there are a plethora of questions on the minds of learners, teachers, parents, and education administrators, the technological methods are without a doubt

here to stay. In this study, qualitative findings from 2013, the date of the official release of Kahoot!, to 2022, were qualitatively analysed. Prior to initiating the analysis sequence, it was observed that the number of qualitative studies on the topic had been steadily growing, with only one study in 2016 and 11 studies by the end of 2022. The analysis was performed to answer the following research questions:

1. What are the most frequent and salient findings of the Kahoot! as a language-testing instrument?
2. What advantages and issues have users reported with the application?

As a result, all research questions were answered to some extent. The most commonly observed benefit of the application was that it promoted learners' motivation, retention, concentration, attention, participation, cooperation, and excitement. It was also discovered that learners were provided with entertainment, constructive competition, and a way to revise, recall, and test what they had learned through the modern, practical, digitalized, and interactive game-based testing application Kahoot!. Throughout the analysis, the most frequent and noteworthy finding for the researchers was that the participating students enjoyed Kahoot! and viewed it as an entertaining and exciting game, instead of a classroom task. The majority of studies stated that competition within the application was the main drive for participation. Knowing what they learn in the classroom will contribute to their success in Kahoot! tests, it is predicted that students will be more motivated to learn (and remember what they have learned) in the classroom. In addition, discussions taking place between questions between students were observed to be another major source for the clarification of subjects that students had not completely grasped. Therefore, if prepared with the required consideration and care and applied in the correct manner, with the additional incentive of rewards for winners, Kahoot! could be highly beneficial in ELT classrooms.

However, it should not be ignored that multiple complications were observed with Kahoot! caused by teachers, learners, the application, and the environment in which the tests were conducted. First, access to infrastructure, a stable Internet connection and the required devices, a computer for the teacher, a large screen or projector for display, and mobile devices are required for each classroom. Such facilities may not be available in all regions of the world, in all schools, or for all students. While the number of primary, middle, and high school students who own mobile devices may be higher than in the past decade, many teachers perceive smartphones in the classrooms as a distraction for the students, and this perception appears to become stronger with the age of teachers (O' Bannon & Thomas, 2014). Therefore, in order for a testing instrument such as Kahoot! to be implemented in EFL classrooms, both teachers and students are expected to be equipped with both the devices required and the will to use them for the purpose of education.

Although the competition that occurs during the tests is often observed to be constructive, pushing students to have the highest score, it was also referred to as a negative feature.

Some students were overwhelmed by the tension of appearing on the scoreboard, feeling anxious throughout the test. They would also become demotivated with each wrong answer, as they are shown the correct answer immediately after everyone has answered the particular question. Another issue that students complained of was that during the session, some students would become overexcited and disrupt the classroom or even loudly announce their answers with the excitement of the moment. There were also instances of students declaring that they would blindly guess the answers to questions that they could not answer. Such problems must be solved through cooperation between teachers and students in the classroom. Before the session begins, the teacher should assert that, just like any game, there are certain rules to follow and actions not to be performed.

In addition to problems with access to technological devices, multiple technical issues were reported by both parties. Most schools use projectors to display content in classrooms, although they are often not bright enough, particularly when there is plenty of sunlight entering the classroom, or not visible to everyone, especially students with visual impairments, hindering the visibility of the content displayed. A solution to this problem was provided by Kahoot! (Golubeva, 2021), allowing the users to choose to view the questions and the answers by toggling an option in the settings, although by default the question and multiple choices provided are only displayed on the main screen, while the mobile devices used by the test-takers serve only as remotes with no information about the questions. Again, the responsibility falls on the shoulders of the teachers to follow the updates of the application and notify the students of this option.

It is important to consider the critical value of time in education and the problems caused by its lack. Teachers and candidate teachers at times stated that Kahoot! tests take too much valuable time, and the time spent with the application was not fruitful because of student-sourced disruptions, such as announcing their answers or distracting others. Another issue concerning time was that many students thought that the time provided for each question was insufficient, causing them to either blindly guess their answers, not answer the questions, or become demotivated. While preparing the tests, teachers should consider how much time would be needed to answer each question and provide the required amount of time.

One major issue to highlight regarding the studies on Kahoot! is that many were conducted through interviews or observations on a one-shot basis. Consequently, prolonged engagement was lacking in many of these studies. Without such longitudinal evaluation, making sweeping generalizations about its effectiveness is challenging. Additionally, the absence of prolonged engagement hinders the collection of rich data and the attainment of a deep understanding of the subject. Reduced rapport with the participants, in turn, affects the ability to achieve a contextually rich understanding and comprehensive explanations.

Recommendations to teachers

A complete understanding of the dangers and requirements related to the integration of Kahoot! into the classroom setting should be given a high level of significance in the context of teacher education. The Kahoot! quiz is orchestrated by the teacher, who takes on a multifaceted role and needs to be skilled in managing multiple elements. First, it is crucial for teachers to manage the classroom atmosphere carefully when a Kahoot! quiz is taking place. This covers a wide range of duties, ranging from helping students connect to Kahoot! and ensuring the reliability of their connections to effectively facilitating team-building activities when some students may not have mobile devices with reliable connectivity. Additionally, it is crucial to maintain an atmosphere of discipline and foster an enabling yet competitive environment. To maximize engagement and involvement, the educator must ensure that the overall experience is visually and acoustically pleasing. Meticulous preparation of quiz questions that are targeted to meet students' developmental needs is crucial for the comprehensive development and retention of course materials. This includes prioritizing the comprehensive revision and retention of the learned language elements. In addition, it is the responsibility of the teacher to give time for discussions on students' responses, which encourages a higher level of comprehension and critical thinking. Equal significance should be placed on the review of the reports produced by Kahoot! following quizzes. Teachers can use these reports as helpful instruments for directing and enhancing their pedagogical approach in subsequent classes and Kahoot! quizzes. This continuous procedure should place noticeable emphasis on students experiencing difficulties and questions that pose noticeable challenges. In conclusion, it is encouraged that educators who incorporate Kahoot! into their instructional toolbox follow these essential guidelines. By doing so, they can create a rich learning environment that makes the most of this dynamic technology, thus enhancing their students' educational experiences.

Limitations

Systematic analysis of the data acquired throughout the course of this investigation was performed using a specific method. A carefully chosen set of keywords was used to accelerate the process of revealing significant themes in the findings of numerous studies. These keywords were deliberately chosen to act as navigational points, thereby guiding the researchers through a dense body of data. Although this method helped structure the review process, it is crucial to realize that it could also have some limitations. By design, the emphasis on particular keywords may have unintentionally affected the magnitude assigned to some themes. As a result, this methodological approach could have resulted in the under-representation of significant themes that the chosen keywords might not have been clearly conveyed. Because of this, despite the fact that the research was conducted thoroughly and methodically, this particular aspect of the technique needs to be taken into account and acknowledged as a potential limitation.

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References

- Adhitama, M. J., Nadia, H., & Rafidiyah, D. (2022). Implementation of Kahoot! to full lesson for X grade high school students. *Eduinfo Media*, 2(1), 1-5. <https://doi.org/10.55756/eim.v2i1.101>
- Aidoune, Y., Nordin, N. R. M., Kaur, M., & Singh, P. S. (2022). Effect of online English learning game 'Kahoot' on L2 undergraduate learners in a Malaysian University. *Journal of Intercultural Communication*, 22(3), 13-18. <https://doi.org/10.36923/jicc.v22i3.66>
- Akkuş, İ., Özhan, U., & Çakir, H. (2021). Student views on the use of online student response systems: The Kahoot! case. *Journal of Qualitative Research in Education*, 25, 235-254. <https://doi.org/10.14689/enad.25.10>
- Alawadhi, A., & Ayyash, E. A. (2021). Students' perceptions of Kahoot!: An exploratory mixed-method study in EFL undergraduate classrooms in the UAE. *Education and Information Technologies*, 26, 3629-3658. <https://doi.org/10.1007/s10639-020-10425-8>
- Alfaruqy, D., & Setyawan, H. (2021). A learning with KAHOOT! as advantageous learning experience in EFL classroom. *JEE (Journal of English Education)*, 7(1), 56-64. <https://doi.org/10.30606/jee.v7i1.812>
- Alharthi, S. (2020). Assessing Kahoot's impact on EFL students' learning outcomes. *TESOL International Journal*, 15(5), 31-64. <https://eric.ed.gov/?id=EJ1329509>
- Alharthi, S. (2020). Assessing Kahoot's Impact on EFL Students' Learning Outcomes. *TESOL International Journal*, 15(5), 31-64. 10.21125/iceri.2018.0264
- Amin, Z., & Dahnil, I. (2021). Utilization of the Kahoot-it application as a learning vehicle based on massive open online course (MOOC) during the Covid-19 Pandemic. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 4(4), 12812-12820. <https://doi.org/10.33258/birci.v4i4.3343>
- Batıbay, E. F. (2019). *The impact of web 2.0 applications on motivation and success in Turkish course: The example of Kahoot*. [Unpublished doctoral dissertation]. Hacettepe University Institute of Educational Sciences.
- Bhuana, G. P. (2022). The benefits and drawbacks of Kahoot: students' perspective. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 10(2), 2224-2232. <https://doi.org/10.24256/ideas.v10i2.3508>
- Bicen, H., & Kocakoyun, S. (2018). Perceptions of students for gamification approach: Kahoot as a case study. *International Journal of Emerging Technologies in Learning*, 13(2). <https://doi.org/10.3991/ijet.v13i02.7467>

- Bozkurt Türk, H. (2019). *The effect of Kahoot! as a student response system on the attitudes and success of university students in learning English vocabulary* [Unpublished master's thesis]. Düzce University.
- Çetin, H. S. (2018). Implementation of the digital assessment tool Kahoot in elementary school. *International Technology and Education Journal*, 2(1), 9-20. <https://files.eric.ed.gov/fulltext/EJ1301424.pdf>
- Chen, Y. M. (2022). Understanding foreign language learners' perceptions of teachers' practice with educational technology with specific reference to Kahoot! and Padlet: A case from China. *Education and Information Technologies*, 27(2), 1439-1465. <https://doi.org/10.1007/s10639-021-10649-2>
- Chiang, H. H. (2020). Kahoot! in an EFL reading class. *Journal of Language Teaching and Research*, 11(1), 33-44. <http://dx.doi.org/10.17507/jltr.1101.05>
- Çınar, A., Erişen, Y., & Çeliköz, M. (2022). A mixed-method research on the effectiveness of using gamification elements in an online English course. *International Journal of Educational Research Review*, 7(4), 280-291. <https://doi.org/10.24331/ijere.1140960>
- Ebadi, S., Rasouli, R., & Mohamadi, M. (2021). Exploring EFL learners' perspectives on using Kahoot as a game-based student response system. *Interactive Learning Environments*, 31(4), 2338-2350. <https://doi.org/10.1080/10494820.2021.1881798>
- Ekinci, M. (2020). Kahoot for good: Firing competitive learning for EFL learner. *International Journal of Languages' Education and Teaching*, 8(4), 305-318. [10.29228/ijlet.46623](https://doi.org/10.29228/ijlet.46623)
- Emecen, S. (2019). *A case study in ninth grade students at a state school; differences between Kahoot! and traditional activities in terms of vocabulary retention*. [Unpublished master's thesis]. Ufuk University.
- Fajar, R., & Wenni, S. (2019). Perception of stie Muhammadiyah Jambi students toward Kahoot! as medium for learning English. *Journal of Language Education and Development (JLed)*, 2(1), 213-223. <https://doi.org/10.52060/jled.v2i1.180>
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education* (8th ed.). McGraw-Hill.
- Golubeva, D. (2021, March 4). Based on popular requests: Now students can see questions and answers on their devices in a live Kahoot! <https://kahoot.com/blog/2021/03/04/questions-answers-on-a-single-device/>
- Guzzo, R. A., Jackson, S. E., & Katzell, R. A. (1987). Meta-analysis analysis. *Research in Organizational Behavior*, 9, 407-442.
- Hadijah, H., Pratolo, B. W., & Rondiyah, R. (2020). Interactive game "Kahoot!" as the media of students' vocabulary assessment. *Journal on English as a Foreign Language*, 10(1), 84-102. <https://doi.org/10.23971/jeffl.v10i1.1670>
- Hamed, A., Fakhraee Faruji, L., & Amiri Kordestani, L. (2022). The Effectiveness of using formative assessment by Kahoot application on Iranian intermediate EFL Learners' vocabulary knowledge and burnout level. *Journal of new advances in English Language Teaching and Applied Linguistics*, 4(1), 768-786. <https://doi.org/10.22034/jeltal.2022.4.1.5>
- Holbrey, C. E. (2020). Kahoot! Using a game-based approach to blended learning to support effective learning environments and student engagement in traditional lecture theatres. *Technology, Pedagogy and Education*, 29(2), 191-202. <https://doi.org/10.1080/1475939X.2020.1737568>

- Karsli, V. (2022). The effects of using gamified assessment strategies on the vocabulary learning processes of EFL Students. *Takvim-i Vekayi*, 10(1), 1-20. <https://dergipark.org.tr/en/download/article-file/2465980>
- Kaur, P., & Nadarajan, R. (2020). Language learning and teaching using Kahoot. *International Journal of Modern Education*, 2(5), 19-28. <https://doi.org/10.35631/IJMOE.25003>
- Khatibi, M. B., & Badeleh, A. (2021). The potential of using Kahoot to empower EFL learners: An experience of game-based learning. *Research in English Language Pedagogy*, 9(Special Issue of NTLL Conference), 44-60. 10.30486/relp.2021.1930824.1273
- Kim, H. S. (2019). The use of Socrative and Kahoot! in English grammar. *Multimedia-Assisted Language Learning*, 22(4). <https://doi.org/10.15702/mall.2019.22.4.57>
- Kurnia, M., Rahmawati, M., & Fitriyana, W. (2021). Playing e-quizzes with KAHOOT!: Students' behavioral engagement on reading comprehension through KAHOOT!. *English Ideas: Journal of English Language Education*, 1(1), 28-39. <https://journal.unsika.ac.id/index.php/IDEAS/article/view/4177>
- Lestari, T. W. (2019). Kahoot! and Quizizz: A comparative study on the implementation of E-Learning application toward students' motivation. *Karya Ilmiah Dosen*, 2(2), 13-22. <https://journal.stkippgitrenngalek.ac.id/index.php/kid/article/view/150/97>
- Licorish, S. A., Owen, H. E., Daniel, B., & George, J. L. (2018). Students' perception of Kahoot!'s influence on teaching and learning. *Research and Practice in Technology Enhanced Learning*, 13(1), 1-23. <https://doi.org/10.1186/s41039-018-0078-8>
- Lin, D. T. A., Ganapathy, M., & Kaur, M. (2018). Kahoot! It: Gamification in higher education. *Pertanika Journal of Social Sciences and Humanities*, 26(1), 565-582. [http://www.pertanika.upm.edu.my/resources/files/Pertanika%20PAPERS/JSSH%20Vol.%2026%20\(1\)%20Mar.%202018/34%20JSSH-2477-2017-3rdProof.pdf](http://www.pertanika.upm.edu.my/resources/files/Pertanika%20PAPERS/JSSH%20Vol.%2026%20(1)%20Mar.%202018/34%20JSSH-2477-2017-3rdProof.pdf)
- Mahbub, M. A. (2020). An investigation into undergraduate students' perception of Kahoot mediated e-assessment. *JEELS (Journal of English Education and Linguistics Studies)*, 7(2), 269-296. <https://doi.org/10.30762/jeels.v7i2.2060>
- Marbun, T. M., & Harpain, H. (2016). The application of Kahoot! to improve classroom dynamics and learning process in English structure class. *Linguistika: Jurnal Pendidikan Bahasa Inggris Universitas Bandar Lampung*, 7(2), 500290. <http://jurnal.ubl.ac.id/index.php/Linguistika/article/view/1363>
- Marsa, S. S., Kuspiyah, H. R., & Agustina, E. (2021). The effect of Kahoot! game to teaching reading comprehension achievement. *Journal of English teaching*, 7(2), 133-149. <https://eric.ed.gov/?id=EJ1300238>
- Muhridza, N. H. M., Rosli, N. A. M., Sirri, A., & Samad, A. A. (2018). Using game-based technology, Kahoot! for classroom engagement. *LSP International Journal*, 5(2), 37-48. <https://doi.org/10.11113/lspi.v5n2.77>
- Nadeem, N. H., & Al Falig, H. A. (2020). Nadeem, N. H., & Al Falig, H. A. (2020). Kahoot! quizzes: A formative assessment tool to promote students' self-regulated learning skills. *Journal of Applied Linguistics and Language Research*, 7(4), 1-20. <https://www.jallr.com/index.php/JALLR/article/view/1117>
- Nguyen, T. T. T., & Yukawa, T. (2019). Kahoot with smartphones in testing and assessment of language teaching and learning, the need of training on mobile devices for Vietnamese teachers and students.

- International Journal of Information and Education Technology*, 9(4), 286-296.
10.18178/ijiet.2019.9.4.1214
- Nugroho, D. S. (2021). Using Kahoot! Improving seventh-graders' reading comprehension skills of SMPN 2 Tegalrejo. *Journal of English Language and Pedagogy*, 4(1), 89-95.
<https://doi.org/10.36597/jelp.v4i1.10997>
- Nurhadianti, B. W. P., & Pratolo, B. W. (2020). Students' perception toward the application of Kahoot! as an assessment tool in EFL class. *Universal Journal of Educational Research*, 8(5), 2150-2155.
<https://doi.org/10.13189/ujer.2020.080554>
- Nurlaela, N., & Nawir, S. M. (2020). The Implementation of Kahoot in improving students' tenses understanding in higher education. *International Journal for Educational and Vocational Studies*, 2(11), 908-913. <https://doi.org/10.29103/ijevs.v2i11.3004>
- O'bannon, B. W., & Thomas, K. (2014). Teacher perceptions of using mobile phones in the classroom: Age matters! *Computers & Education*, 74, 15-25.
<https://doi.org/10.1016/j.compedu.2014.01.006>
- Oktaria, A. A., Rohmayadevi, L., & Murwantono, D. (2021). Online game quiz "kahoot" in teaching english for students of SMP Muhammadiyah Yogyakarta. *PROJECT (Professional Journal of English Education)*, 4(2), 290-296. <https://doi.org/10.22460/project.v4i2.p290-296>
- O'Rourke, K. (2007). An historical perspective on meta-analysis: dealing quantitatively with varying study results. *Journal of the Royal Society of Medicine*, 100(12), 579-582.
<https://doi.org/10.1177/0141076807100012020>
- Paguay, J. A. N., & Santillán, J. J. (2021). The implementation of the Student Response System (SRS) Kahoot! in EFL classes and its effects on reading comprehension. *INNOVA Research Journal*, 6(2), 1-21. <https://doi.org/10.33890/innova.v6.n2.2021.1655>
- Pahamzah, J., Syafrizal, S., & Nurbaeti, N. (2022). The effects of EFL course enriched with Kahoot on students' vocabulary mastery and reading comprehension skills. *Journal of Language and Linguistic Studies*, 18(1), 643-652. <https://eprints.untirta.ac.id/id/eprint/10130>
- Polat, M. (2019). Yükseköğretimde Kahoot kullanmak ya da kullanmamak: Öğretmen adaylarının Kahoot'la öğretime yönelik görüşleri. *Ulusal Eğitim Akademisi Dergisi*, 3(2), 139-157.
<https://doi.org/10.32960/uead.587469>
- Pratolo, B. W., & Lofti, T. M. (2021). Students' perceptions toward the use of Kahoot! online game for learning English. *Ethical Lingua: Journal of Language Teaching and Literature*, 8(1), 276-284.
<https://www.ethicallingua.org/25409190/article/view/250>
- Puğ, H. (2020). *An investigation into using Kahoot! for grammar practice from learners and instructors' perspectives*. [Unpublished master's thesis]. Bahçeşehir University.
- Putra, O. P., Suseno, M., & Setiadi, S. (2022). the students' point of view toward the use of Kahoot! as the tools of learning English. *Project (Professional Journal of English Education)*, 5(1), 143-148.
<https://doi.org/10.22460/project.v5i1.p143-148>
- Rafidiyah, D., Nadia, H., Hermina, C., Azizah, A., & Adhitama, M. (2022). The effectiveness of using Kahoot! to teach narrative text: a reflective analysis in Indonesia. *Exposure: Jurnal Pendidikan Bahasa Inggris*, 11(2), 251-264. <https://journal.unismuh.ac.id/index.php/exposure>

- Rahman, F., Hidayatullah, R., & Rahmadani, N. (2019, December). Gamification of EFL classroom in a healthcare education context in Indonesia: Kahoot!. In *Proceedings of International Conference on English Language Teaching (INACELT)*, (Vol. 3, No. 1, pp. 91-101). <https://e-proceedings.iain-palangkaraya.ac.id/index.php/INACELT/article/view/86>
- Rajabpour, A. (2021). Teachers' perception of advantages and disadvantages of Kahoot. *English Linguistics Research*, 10(4), 49-61. <https://doi.org/10.5430/elr.v10n4p49>
- Resmayani, N. P. A., & Putra, I. N. T. D. (2020). Gamification: Using Kahoot! to make students love the class from the very Beginning. *Linguistics and ELT Journal*, 7(1), 10-18. <https://doi.org/10.31764/leltj.v7i1.1649>
- Reynolds, E. D., & Taylor, B. (2020). Kahoot!: EFL instructors' implementation experiences and impacts on students' vocabulary knowledge. *Computer-Assisted Language Learning Electronic Journal*, 21(2), 70-92. <http://callej.org/journal/21-2/Reynolds-Taylor2020.pdf>
- Rochimah, H., & Muslim, S. (2021). Students' Perceptions in Using the Kahoot! Game on Reading Comprehension Learning. *AL-ISHLAH: Jurnal Pendidikan*, 13(3), 2213-2222. <https://doi.org/10.35445/alishlah.v13i3.1115>
- Rojabi, A. R., Setiawan, S., Munir, A., Purwati, O., Safriyani, R., Hayuningtyas, N., Khodijah, S., & Amumpuni, R. S. (2022). Kahoot , is it fun or unfun ? Gamifying vocabulary learning to boost exam scores, engagement, and motivation. *Frontiers in Education*, 7(September), 1-11. <https://doi.org/10.3389/feduc.2022.939884>
- Saracoglu, G., & Kocabatmaz, H. (2019). A study on Kahoot and Socrative in line with preservice teachers' views. *Educational Policy Analysis and Strategic Research*, 14(4), 31-46. <https://doi.org/10.29329/epasr.2019.220.2>
- Sartini, S. (2020). Kahoot in maritime English teaching: Its impact on nautical science cadet's oral reproduction and vocabulary. *English Language Teaching Educational Journal*, 3(1), 41-51. <https://eric.ed.gov/?id=EJ1265818>
- Schreiber, R., Crooks, D., & Stern, P. N. (1997). Qualitative meta-analysis. In J. M. Morse (Ed.), *Completing a qualitative project: Details and dialogue* (pp. 311-326). Sage.
- Sercanoğlu, M., Bolat, Y. İ., & Goksu, İ. (2021). Kahoot! as a gamification tool in vocational education: More positive attitude, motivation and less anxiety in EFL. *Journal of Computer and Education Research*, 9(18), 682-701. <https://doi.org/10.18009/jcer.924882>
- Sibatuara, U. D. (2021). The effectiveness of Kahoot in improving vocabulary: The case of a private university English study program. *Edukasi: Jurnal Pendidikan dan Pengajaran*, 8(1), 33-42. <https://doi.org/10.19109/ejpp.v8i1.8285>
- Sitinjak, G., Sinaga, N. T., & Tampubolon, S. (2022). The effect of using Kahoot! game in teaching english to improve students' reading comprehension. *Cendikia: Media Jurnal Ilmiah Pendidikan*, 13(2), 379-384. <https://doi.org/10.35335/cendikia.v13i2.3167>
- Sofyana, A. W., Faridi, A., & Shakiyya, Z. (2020). Implementation of Kahoot as a digital assessment tool in English formative test for students of SMP Negeri 2 Temanggung in the Academic Year of 2019/2020. *English Education Journal*, 10(4), 466-473. <https://pdfs.semanticscholar.org/c7b0/dd5a5d7e1c487822e5af276215f9565cc130.pdf>

- Şad, S. N., & Özer., N. (2019). Using Kahoot! as a gamified formative assessment tool: A case study. *International Journal of Academic Research in Education*, 5(1-2), 43-57. <https://doi.org/10.17985/ijare.645584>
- Tao, Y., & Zou, B. (2021). Students' perceptions of the use of Kahoot! in English as a foreign language classroom learning context. *Computer Assisted Language Learning*, 36(8), 1668-1687. <https://doi.org/10.1080/09588221.2021.2011323>
- Thach, N. P., & Diem, T. D. (2022). Using Kahoot! in vocabulary learning: Evidence from a Vietnamese higher education context. *VNU Journal of Foreign Studies*, 38(3), 138-152. <https://doi.org/10.25073/2525-2445/vnufs.4849>
- Timulak, L. (2009). Meta-analysis of qualitative studies: A tool for reviewing qualitative research findings in psychotherapy. *Psychotherapy Research*, 19(4-5), 591-600. <https://doi.org/10.1080/10503300802477989>
- Tıraşoğlu, C. (2019). *Web 2.0 tools in Turkish instruction of foreigners to improve vocabulary: Kahoot! example*. [Unpublished master's thesis]. Akdeniz University.
- Ulandari, S. A. K. Y., Artini, L. P., & Myartawan, I. P. N. W. (2022). Investigating the implementation of Kahoot for young learners in remote learning context. *Jurnal Pendidikan Bahasa Inggris Undiksha*, 10(1), 14-22. <https://doi.org/10.23887/jpbi.v10i1.45416>
- Ünal, H. N. (2018). *Comparison between Kahoot! and a traditional exercise in terms of vocabulary retention in EFL learners*. [Master's thesis]. Gazi University.
- Uzunboyu, H., Galimova, E. G., Kurbanov, R. A., Belyalova, A. M., Deberdeeva, N. A., & Timofeeva, M. (2020). The views of the teacher candidates on the use of Kahoot as a gaming tool. *International Journal of Emerging Technologies in Learning*, 15(23), 158-168. <https://doi.org/10.3991/ijet.v15i23.18811>
- Verdiyanti, S. (2019). An observational study on the use of Kahoot! as formative assessment support in higher education. *Concept: Community Concern for English Pedagogy and Teaching*, 5(1), 1-16. <https://garuda.kemdikbud.go.id/documents/detail/2207512>
- Wang, Y., Qiao, Y., & Wang, X. (2021). Effects of gamified learning platforms on students' learning outcomes: A meta-analysis taking Kahoot and quizizz as examples. In *2021 13th International Conference on Education Technology and Computers* (pp. 105-110).

Genişletilmiş Türkçe Özet

Mobil ve bilgisayar tabanlı uygulamalar, gün geçtikçe artan bir önem kazanmakta olup özellikle COVID-19 salgını sonrasında eğitim ve öğrenme alanlarında daha belirgin roller üstlenmişlerdir. Bu dijital araçlar, dünya çapında öğretmenler ve öğrenciler tarafından eğitimde, özellikle ve yoğunlukla da dil sınıflarında kullanılmaktadır. Bu uygulamalardan birisi de, 2013 yılında piyasaya sürülen ve çeşitli sınıf ortamlarında öğrencilere eğlenceli sınıf içi tekrar sağlanması ve öğrenci kazanımlarının takibi amaçları için yaygın olarak kullanılan sınıf içi veya çevrimiçi bir test ve alıştırma uygulaması olan Kahoot!'tur. Her ne kadar Kahoot!'un dil öğretimi bağlamlarında yaygın olarak kullanılmasına ve sıklıkla araştırılmasına rağmen, özellikle nitel bulgulara odaklanarak yapılmış çalışmalara ilişkin bir meta-analiz henüz yapılmamıştır. Bu çalışmada, Kahoot!'un ilk sürümünün çıkış yılı olan 2013 ile 2022 yılları arasında yayınlanmış nitel araştırma makaleleri bir araya getirilmiş ve literatürde yer alan eğilimler, kısıtlamalar ve eksiklikleri ortaya çıkarmak amaçlarıyla analiz edilmiştir. Çalışmada, dil öğretimi bağlamında Kahoot! ile ilgili tamamen nitel ve karma yöntem kullanan çalışmaların nitel bulgularına odaklanarak, toplam 60 nitel çalışmanın bulguları ile kapsamlı ve sistematik bir yaklaşım benimsenmiştir. Araştırmacılar, bahsi geçen nitel bulgulara erişebilmek amacıyla vaka çalışmaları, mülakatlar, etnografi ve fenomenoloji gibi nitel yöntemlere özgü anahtar kelimeler kullanmışlardır. Makaleleri yöntemsel yaklaşımlara göre sınıflandırarak tüm çalışmalara eşit davranmış ve belirlenen kapsamda değerlendirilebilecek çalışmaları analiz sürecine dahil etmiştir. Veri analizi stratejisi titiz bir çalışma ile yapılmış olup, alan yazını düzenlemek, sınıflandırmak ve takip etmek için bir Google E-Tablolar veri kümesi oluşturulmuştur. Bu yaklaşım, toplanan verilere kapsamlı bir değerlendirme ve karşılaştırma imkanı sunmuştur. Elde edilen bulgular, Kahoot! testleri kullanılarak yürütülen çalışmalara katılım sağlayan öğrenci ve öğretmenlerin çoğunluğunun olumlu görüş bildirdiğini, ancak bu testlerin etkili kullanımına dair bazı endişelerin dile getirildiğini ortaya koymuştur. Çalışma, Kahoot!'un motivasyon, eğlence, kullanım kolaylığı, rekabet, anonimlik, derse katılım, işbirliği, öğrenme, kavrama, kelime dağarcığı, anlık geri bildirim gibi olumlu etkilerin en yaygın temalar olduğunu ortaya koymuştur. 2016 ile 2022 yılları arasında Kahoot! ile ilgili yapılan çalışmalar incelendiğinde, özellikle öğrencilerin bakış açılarına odaklanan ve büyük çoğunluğu üniversite öğrencilerinden oluşan araştırmaların sayısının çoğunlukta olduğu görülmüştür. Öğrencilerin Kahoot!'u eğlenceli bir oyun olarak gördükleri ve öğrenme heveslerinin arttığına olan vurgunun sıklığı gözlemlenmiştir. Bununla birlikte, teknik aksaklıklar, bölünmeler ve Kahoot! testleri esnasındaki tartışmaların sınırlılığı gibi sorunlar da saptanmıştır. Çalışma, gelişmiş bir öğrenme deneyimi için bu sorunların ele alınmasının ve kullanımın ideal hale getirilmesinin önemini vurgulamaktadır.

Bu çalışmada, Kahoot! aracılığıyla eğitimin oyunlaştırılmasının artan popülerliğini tartışılmış ve bunun artan motivasyon, akılda kalıcılık ve öğrenci katılımı gibi faydaları vurgulanmıştır. Ancak teknolojiye erişim, sınıf içi aksaklıklar ve teknik sorunlar gibi sorunlar uygulamanın verimliliğini etkilemiştir. Bu analiz, eğitim ortamlarındaki

öğretimin iyileştirilmesinin doğru karar alma süreçlerine, yetkin sınıf yönetimine, ve nitelikli bilgisayar okuryazarlığına dayandığını göstermektedir. Araştırmacılar, Kahoot!'un potansiyelinden eksiksiz bir şekilde faydalanılabilmesi için öğretmen eğitimi, sınıf yönetimi ve Kahoot! testlerinin öğretmenler tarafından ders içeriğine ve hedeflerine uygun biçimde hazırlanması hususlarına önem verilmesine ihtiyaç duyulduğunu vurgulamışlardır. Bu faktörlerin uygun stratejilerle değerlendirilmesi, eğitim uygulamalarını önemli ölçüde zenginleştirebilir. Sonuç olarak, bu çalışma bağlamında Kahoot!'un öğretmenlerin sınıflara entegrasyonu, sınıf yönetimi, öğrenci iletişimi, disiplinli bir atmosfer oluşturma, dilbilgisi gelişimine uygun Kahoot! testleri oluşturma ve Kahoot! raporlarının öğretim yaklaşımlarını iyileştirmek amacıyla değerlendirilmesi önerilmektedir.

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