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Research Paper

Facilitating Secondary School Teachers in Using Game-based Application for Online Summative Assessment

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Abstract

The article presents the utilization of game-based platform as a tool for creating summative assessment. 10 English as Foreign Language (EFL) teachers in secondary schools with less technological skill were guided to create assessment using Kahoot! platform. The assessment was then administered to 150 students to gather their perspectives on its effectiveness. After that, their perceptions were gained through questionnaires as well as teachers' feedback on the use of Kahoot! to assess students' learning. An open-ended interview was conducted at the end of this study. The result shows that teachers were able to do online summative assessments using Kahoot! and included multimedia components, such as pictures, video and audio. Despite the problems they faced due to the increased time and effort required for preparation, teachers reported a strong desire to incorporate Kahoot! into the evaluation process. Meanwhile, for students, Kahoot! was found to be a useful tool for assessing their knowledge but True or False and multiple-choice questions were deemed boring and repetitive. This study implies that hands-on training with game-based learning tools like Kahoot!

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can effectively enhance teachers' confidence and willingness to integrate digital assessments, resulting in more engaging and varied evaluation methods in educational practice.

Keywords: Game-Based Application, EFL, Online Summative Assessment, Kahoot!

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1. Introduction

With the rapid advancement of technology, mobile devices have become increasingly prominent in educational settings. As they become more widely available and affordable, many educators and researchers are incorporating them into their teaching and learning practice. It is clearly perceived that this development creates a situation in which learning can be accessible at any time and from any location via mobile learning, which has developed as an innovative learning feature (Kaliisa & Picard, 2017; Klimova & Polakova, 2020; Qays et al., 2022). Since mobile learning has now essentially become associated with applications and online platforms, studies have demonstrated the implementation of them in teaching English, for instance, using Quizizz in fostering EFL writing skills (Alsmari, 2019; Ma'azi & Janfeshan, 2018), reading comprehension (Razali & Singh, 2023) and EFL self-directed learning (Khodary, 2017), engaging students by establishing good classroom atmosphere via Whatsapp (Çelik & Akyildiz, 2021), Kahoot! (Wang & Tahir, 2020) and Moodle (Wen & Yang, 2020).

An educational paradigm shift has occurred with physical classrooms being replaced by a virtual one in Indonesia (Haling et al., 2024) not only for teaching and learning, but also for evaluation and assessment processes. As a result, educators will need to rethink how they assess students in order to keep up with the changing educational landscape. Rather than relying on the

paper-based assessments that are so prevalent in the traditional educational process, educators should turn to more innovative assessment methods that make use of modern technology. The ability to design and implement assessments is a critical component of their professional development because they are frequently called upon to assess students' progress (Zhang et al., 2021).

Many challenges must have arisen in the transition from face-to-face and blended to full-time online learning. In several studies, the main issue deals with lack of knowledge and training. There has been a negative reaction from teachers to designing assignments on the application and platforms because it requires patience and expertise meanwhile the teachers are lack of technical knowledge (Joshi et al., 2020). In addition to socio-cultural factors, EFL teachers, especially in Indonesia, have a poor understanding of assessment and have difficulty implementing their knowledge into practice (Arrafii & Sumarni, 2018; Puad & Ashton, 2021). They are struggling with the limited technical support and lack of digital technology literacy. Another study implied that using online assessments can be confusing because of the many different ways they are described in the instructions. Meanwhile assessments are needed to ensure that students are meeting their goals after the course conducted (Menezes & Bortolli, 2016). Despite the importance of assessments, there is a lack of awareness of their significance. The preparation for online assessments can be difficult for teachers who are not familiar with technology (Alotaibi, 2021). Teachers need to build skills in utilizing educational technology (Alibakhshi, 2019). Besides, online assessment platforms are not widely known by teachers, they are not well-trained to use them. Most of teachers use the traditional method of assessment, such as the submission of assignments via WhatsApp, Google

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Drive or Form (Joshi et al., 2020), which cannot provide a solution to the absence of real-time evaluation.

Given these challenges, it becomes essential to investigate whether targeted training can effectively equip teachers with the necessary skills to navigate online assessment platforms and integrate them into their practice. This research aims to determine whether providing structured training can help overcome the issues of technical knowledge gaps, limited digital literacy, and the difficulties teachers face in implementing online assessments. By focusing on how training can address these barriers, this study aims to provide practical solutions for teachers, enhancing their capacity to deliver assessments that are both efficient and meaningful in a blended learning environment.

Furthermore, the results of this research could contribute to a deeper understanding of the role of teacher preparation in the successful implementation of online and blended learning strategies. In addition to providing practical insights, this study has the potential to expand theoretical frameworks related to digital pedagogy, particularly in the areas of online assessment design and teacher training. It will provide valuable evidence to support the development of more effective training programs and ultimately improve the quality of education in digital and hybrid learning environments.

Gamification can be used to assess students' understanding of subject matter and their ability to learn in a fun and engaging way. With the help of modern technology, game-based assessment can become an effective method for today's internet generation. It has the potential to improve formative evaluation by involving students in tasks. Teachers, parents, students, and school administrators will all benefit from the task's design if it is conducted properly (Menezes & Bortolli, 2016). It is also possible to receive immediate feedback through the use of gamification techniques including the use of

points, achievements, badges, and rankings. In this way, students are motivated to participate in class and are given the opportunity to complete assignments (Hassan et al., 2021). Students' knowledge can be assessed using the game-based application, such as Kahoot!, which offers a break from the traditional classroom approach to education (Uzunboylu et al., 2020; Wichadee & Pattanapichet, 2018). There are plenty other platforms and game-based applications can be used as alternative assessments due to their real-time feature. Kahoot! Quizziz, and Socrative are just a few examples of online platforms that use game-based learning theories. Although Kahoot! has been a popular platform since its launch in 2013, its utility in the language classroom has yet to be fully explored (Moorhouse, 2020).

Teachers' online assessment practices are dynamic and context-sensitive. Contextual and experiential factors mediate changes made by teachers at all levels, from the top down to the bottom up. Because of these considerations, teachers who are adapting to new assessment requirements should plan ahead, but also be prepared to deal with issues that may arise, such as students' needs, the classroom environment, internet connectivity, and teaching resources (Zhang et al., 2021). However, there is a lack of training for new strategies and the use of technology for the assessment. The education institutions sometimes lack proper training on assessment techniques, technology and methods that needs to be given to their teachers and examiners. It is possible that teachers will become distracted and the assessment process will be harmed as a result of their struggles with technology. As a result, teachers must be adequately trained in the latest technology and be involved in the development of online assessments.

2. Literature Review

2.1 Online summative assessment

Assessment plays a significant role in supporting the development of education. It is an inseparable part of learning activities since it helps teacher

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determine the level of skills or knowledge of their students (Taras, 2005). Assessment is an ongoing process that encompasses a much wider domain (Brown, 2003). In this regard, it is demonstrated that assessment, as a component of the evaluation process, not only provides information about the learning process and results to diagnose student strengths and weaknesses in relation to classroom instruction, but it also provides students with specific feedback to assist them in their learning. Through the assessment, the teacher can determine the success of the teaching and learning process and student learning outcomes. Hence, teacher's skills in carrying out the assessment affect the overall assessment process.

At the end of each semester each educational institution always carries out a summative test that is used as a tool for evaluating learning activities in schools in one semester. After the summative test is carried out, the results are obtained which are used as an evaluation tool for schools so that the quality of education can increase. In English subject, English teachers should be able to assess and evaluate their students' learning achievement. In order to do that, they should possess adequate knowledge and understanding of assessment. The assessment of language proficiency includes four skills (listening, speaking, reading, and writing) and components (grammatical, vocabulary, and pronunciation). Assessments in language learning must be reflected real-world. It can be performed discretely, interactively, pragmatically, and communicatively. Besides, teacher should be able to construct assessment covering cognitive domain level which not only provides low level questions, but also high-level questions (Fulcher & Davidson, 2007).

Teachers' abilities in dealing with assessment in education are critical to the success of students. When it comes to creating and implementing tests, especially summative ones, teachers must have extensive training and

experience. Some EFL teachers, however, faced problems in assessing their students' proficiency levels. It was discovered that one of the difficulties in implementing classroom assessment in Turkish was EFL teachers' awareness of assessment practice (Alsamaani, 2014). Furthermore, (Mantsose, 2012) discovered that teachers' lack of assessment expertise, overcrowding in the classroom, a lack of resources, and parental participation were all deemed to be issues faced by teachers in South Africa. Teachers in Asian countries also experience difficulties when it comes to performing classroom assessments, according to (Quyen & Khairani, 2016), 80 percent of the studies analyzed revealed inadequate awareness of assessment among teachers in Asia at the micro-level.

Adapting online learning required the assessments modified accordingly. The evaluation process is no longer executed through paper-based assessment. Teachers nowadays carried them out through a variety of applications and platforms. Online applications can be beneficial in measuring students' learning performance, especially as a summative assessment at the end of each course. Discovering methods to incorporate games or game concepts into the classroom can be a productive and unique strategy for educators to engage students in creative learning skills and engaging competition (Zainuddin et al., 2020).

Building teacher competencies, which are professional skills that assist teachers in achieving success in their classrooms, is an essential part of teacher development (Blašková et al., 2014). Without a thorough understanding of learning theories, Bennet (Bennett, 2011) asserts that teachers may have difficulty when conducting assessment for learning activities. A good grasp of evaluation for learning should theoretically lead to teachers carrying out suitable follow-up actions since their comprehension would impact their capacity to properly perform these actions. This will

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provide an opportunity for teachers to provide high-quality instruction while also improving the learning outcomes for students as a result. Furthermore, teachers are required to have digital competencies. They must educate their students not only about how to use current and upcoming digital tools in their professional practice, but also about how to prepare their students to use technology productively (Lund et al., 2014). This is particularly challenging, as it requires students to develop a transformative competence beyond their immediate capability needs, enabling them to interpret into specific instructional, learning design, classroom organization, and assessment practices how to best use digital resources to support their own students' learning.

Kahoot! as

2.2 Assessment tool

It is inevitable that learners at the present time are very much engaged with technology. Education now cannot be separated from the use of technology, particularly the use of digital games as fun and attractive learning media. Gamification approach is becoming more popular in education field and the creation of game that can be used for education are evolving rapidly (Bicen & Kocakoyun, 2018), Kahoot! is one of the recognized game-based learning platforms that is very user friendly for both teachers and pupils. There are two types of logins to the system via Kahoot!. One of them is Playing Game which is typically used by students. Kahoot! ensures that students maintain their motivation by making the learning process to be more fun and interesting. Uzunboylu (Uzunboylu et al., 2020) found that Kahoot! platform is widely beneficial for students and teachers in higher education in Russia since it provides effective learning, offers fun repetition, and encourages students to learn due to its comprehensive competition. In addition, students using Kahoot! to review learning at the end of lessons had a significantly higher learning motivation than those who used a paper quiz

(Wichadee & Pattanapichet, 2018). Teachers in Turkey also claim that this platform will be beneficial not only to help students to understand the lesson better, but also to increase students' interest in the lesson and create a fun and interactive learning atmosphere in the classroom (Bicen & Kocakoyun, 2018).

Besides increasing students' motivation, Kahoot! is also effective in improving students' learning performance and result. Students can learn more effectively and result better by the use of Kahoot! Seventy percent of studies with statistical significance tests on learning effect show that Kahoot! significantly improves the final grade or test results compared to other teaching approaches (Wang & Tahir, 2020). Further, an experiment with 96 students at Purdue University in the USA where Kahoot! was used over seven weeks, found that the experimental group did significantly better on the final exam (Bawa, 2019).

Another type of logging in Kahoot! is Creating a Game by logging in as a manager or teacher at kahoot.com This is typically used by teachers in constructing teaching materials and conducting assessment. Kahoot! currently consists of four kinds of game: Multiple Choice, True or False, Puzzle, and Type Answer that can be used as learning and teaching media according to needs and interests. Sabandar et al. (2018), based on their research, concluded that teachers tend to have positive enthusiasm toward the Kahoot! game in the classroom and they also show their satisfaction by creating their own game on Kahoot!. Wang & Tahir (2020) also found that teachers' motivation increased significantly after starting to use Kahoot! as it enhanced their teaching, was entertaining, resulted in better teaching, and increased attention and concentration.

The utilization of Kahoot! as educational media has been studied by a wide range of researchers all over the world. However, most of the studies

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only focus on the effect of Kahoot! on students (Atherton, 2018; Bicen & Kocakoyun, 2018; Licorish et al., 2018). Some studies explored about the use of Kahoot! from teacher point of view, but mostly focused on the use of Kahoot! for teaching or delivering learning materials (Nkhoma et al., 2018; Yapıcı & Karakoyun, 2017) and motivating (Benhadj et al., 2019; Licorish et al., 2018; Smith & Brauer, 2018). Only few researches were conducted on the use of Kahoot! for assessment (Çetin, 2018; Parra-Santos et al., 2018; Pereira de Sousa, 2018; Prieto et al., 2019) and they are not in the field of TEFL. Therefore, this research focus on the implementation of Kahoot! by teachers particularly for creating assessment in EFL classroom.

2.3 Research Questions

This research aims to facilitate secondary school teachers to learn about the use of Kahoot! platform as media for assessing students' learning achievement. EFL teachers in secondary schools were interrogated to find out their perception about the approach. Based on this research objective, there are three research questions:

1) How is the online summative assessment created by EFL teachers in secondary school by using Kahoot! platform?
2) What are the students' perceptions about the use of Kahoot! as assessment media?
3) What are the teachers' perceptions about the use of Kahoot! as media to assess students' learning achievement?

3. Research Method

3.1 Participants

This research was carried out through semiformal training followed by 10 English teachers from 5 different schools in South Sulawesi, Indonesia. Each school was represented by 2 English teachers proposed by the school. The schools were spread in the 5 biggest cities and regencies in South Sulawesi, which are Makassar City, Parepare City, Bone Regency, Maros Regency, and Gowa Regency. The 10 English teachers consisted of 7 female teachers and 3

male teachers aged from 30-42. All of the teachers had limited experience in using digital and online media in their teaching. They were confirmed to not having experience using Kahoot! platform. Additionally, the research involved 150 students, with 15 students chosen from each teacher's class. These students were all currently being taught English by the participating teachers during the ongoing semester. The students varied in grade level and class, spanning from 1st to 3rd grade of senior high school, and their ages ranged from 16 to 21 years old. The teachers selected these students based on their active participation in the learning process and their willingness to take part in the study.

3.2 Procedures

First of all, semiformal training entitled "The Use of Kahoot! Platform as Assessment Media" was introduced and promoted to schools in the area of South Sulawesi, Indonesia. Following the promotion, 10 English teachers registered to participate in this program.

The second step was undergoing the training. The training took place over 5 weeks, with one face-to-face session each week. The sessions from the first to the fourth week were conducted at a senior high school in Bone Regency, while the fifth week's session was held at the participants' respective schools. Each meeting lasted approximately 4 hours. The specification of the training is as follows:

Table 1
Schedule of Training

Meeting	Time	Topics
1st	Week 1	Introduction to Kahoot!
2nd	Week 2	Making the content of assessment
3rd	Week 3	Inputting the assessment into Kahoot!
4th	Week 4	Reviewing and revising the made instruments
5th	Week 5	Implementation

In the first meeting, the presenters, in this case the researchers, presented all about Kahoot! platform starting from the history, function, and more

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about the features. The presentation was completed with visuals effects by using projector. So, the participants were able to see the real appearance of Kahoot! and how to use all the features step by step. The participants were given opportunity to offer question about the presented materials at the end of every session.

Having received information about how to use all the features of Kahoot!, the participants then gathered in the second meeting to decide the content of assessment. In this meeting, the participants arrange the content based on several considerations including the curriculum and teaching materials. Then, the participants make their own assessment instrument by using Kahoot! based on the arranged content they have made previously. The participants were free to choose the domain that they wanted to test, as well as form of test they wanted to use. The participants were required to accomplish constructing the instrument in this third meeting. The researchers as facilitators helped the c guidance and suggestion.

The forth meeting was to ensure that the assessment instruments created by the participants were well designed by seeing the way they utilize Kahoot! features, as well as the result of their assessment. The final step was implementation of the instrument. Each participant gathered 15 students and instructed them to use the assessment instrument they had created.

3.3 Data Collection

After accomplishing all of the training stages, the researchers then collected data about students' perception on the use of Kahoot! as assessment media and teachers' perceptions about the use of Kahoot! as media to assess students' learning achievement. To address the cases, the researcher collected data through questionnaire and interview.

Questionnaire

The initial data collection was carried out through questionnaire. There are two questionnaires prepared by the researchers. The first questionnaire aimed to find out the effectiveness of the assessment instrument from the students' point of view. The second questionnaire was created to investigate secondary school teachers' perspectives of employing game-based application in summative assessment development. These two questionnaires were developed by the researchers and had been validated by one professor in the field of English Language Testing and two professors in the field of Information and Communication Technology (ICT) in Language Teaching. The Cronbach's Alpha internal consistency values for the questionnaires of "Students' perception about the assessment instrument created by EFL teachers in secondary schools" and "EFL teachers' perceptions about the assessment instrument created by using Kahoot! platform" were 0.91 respectively. The questionnaires were also completed with open-ended question to gain deeper data.

Both questionnaires were distributed online via Google Forms. First of all, the researchers contacted all the participants via Whatsapp and ensured that the contacts are correct and connected. After that, the researchers conveyed the intention to gather data and asked for their readiness. Following this, the researchers shared the Google Form link along with a brief explanation about the aim of the questionnaire. The participants were given three days to complete the questionnaire. following this, the result of the questionnaire was analyzed quantitatively by using descriptive data analysis.

Interview

Interview was carried out once the questionnaire data collection was completed. It was conducted offline by directly meeting the teachers and students at their schools. The interview questions were developed by the researchers and had been validated by one professor in the field of English

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Language Testing and one professor in the field of Information and Communication Technology (ICT) in Language Teaching. Each teacher and student was involved through one-on-one interview in order to obtain more detailed data on individual perspectives, as well as to explore nuances, emotions, and personal experiences of the teachers and students. Each interview was recorded and transcribed. The result of the interview was then analyzed by the researchers by using content data analysis.

4 Result and Discussion

4.1Analysis of the Created Assessment Instruments

The following table lists the analysis results of assessment instruments created by EFL secondary school teachers by using Kahoot! platform.

Table 2

Analysis Results of Assessment Instruments

Participant	Language Skills and/or Elements	Multimedia Used in Assessment	Assessment Format	Number of Difficult Questions
Teacher 1	Reading Comprehension	Picture	Multiple Choice, True or False	2
Teacher 2	Vocabulary Mastery	Picture, Video	Type Answer	5
Teacher 3	Reading Comprehension	Picture	True or False, Type Answer	-
Teacher 4	Listening Comprehension	Picture, Audio, Video	True or False	-
Teacher 5	Grammar Mastery	Picture, Video	Puzzle	-
Teacher 6	Vocabulary Mastery	Audio, Video	Multiple Choice, True or False	1
Teacher 7	Vocabulary Mastery	Picture, Audio, Video	Type Answer	-
Teacher 8	Listening Comprehension	Picture, Audio	Puzzle, Type Answer	3
Teacher 9	Vocabulary Mastery	Video	True or False	-
Teacher 10	Reading Comprehension	Picture	Multiple Choice	-

The table illustrates that the English skills and elements tested by the participants included reading comprehension, listening comprehension,

vocabulary, and grammar mastery. It also shows that all 10 EFL secondary school teachers successfully used the Kahoot! platform as an assessment tool. The instruments created by the participants incorporated multimedia components, such as images, videos, and audio. However, five participants relied on only one type of multimedia. The assessment formats utilized by the participants included Multiple Choice, True or False, Puzzle, and Type Answer questions. Among these formats, True or False questions were the most frequently used. During the interviews, many EFL secondary school teachers indicated that they found it easier to create True or False questions compared to other types of tests. Additionally, among the 30-question tests created by each participant, four tests contained difficult questions, as indicated by the reports generated by Kahoot!. Figure 1 provides an example of a report obtained by a participant after their assessment instrument was completed by students.

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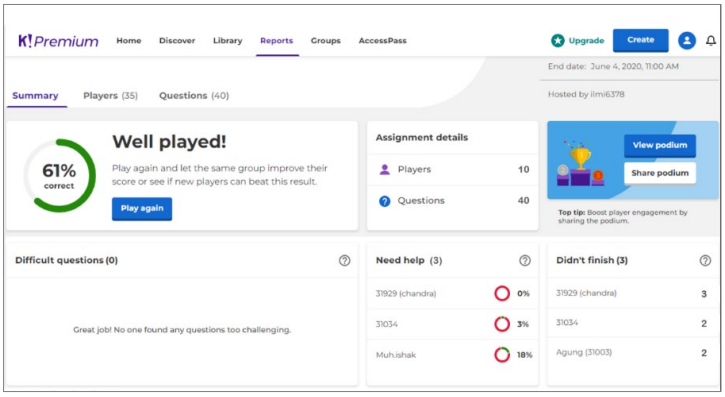

Figure 1. Example of report obtained by participant

4.2 Students' feedback of the Created Summative Assessment Instruments

Table 3 presents the students' responses to the game-based summative assessments created by secondary school teachers in South Sulawesi, Indonesia. The teachers were required to reflect on their students' feedback. A total of 150 students, 57 male and 93 female, with an average age of 17 years, shared their experiences with the assessment instruments.

Table 3

Students' Perception on Online Summative Assessment

No	Statements	SDA	DA	A	SA
1.	The assessment content in this app is readable	0	25	72	3
2.	The assessment direction is understandable	5	17	53	25
3.	The assessment topic suits to lessons that I have learned	2	9	71	18
4.	This app is easy to use	0	6	41	53
5.	The interface design of the app is attractive	0	2	15	83
6.	This app can boost my motivation to answer the questions correctly	4	18	66	12
7.	I think the app is very practical and it eases the assessment process	0	1	94	5
8.	I am expecting the assessments of other subjects are by using this app	0	26	55	19

9.	I am willing to play the quizzes in this app outside school time	7	52	29	12
10	I am willing to recommend my peers to use this app	1	3	71	25

The table shows that the majority of students found the assessment readable and considered the directions clear and understandable. They believe that the assessment items accurately reflected what they had learned in the subject. Most students also stated that the platform interface design was simple, user-friendly, and visually appealing. Additionally, several students noted that the application boosted their competitive spirit, motivating them to answer the questions correctly. They believed the software was very useful in helping them respond to the assessment more efficiently. When asked about their intention to use the application again, many students reported that the game-based assessment was engaging, and they expressed a desire to use it for all school subjects. However, the intention to play the quiz again was somewhat low, which could be attributed to the students' generally low motivation for learning. Furthermore, according to responses to the open-ended question, the quiz formats—mainly 'True or False' and multiple-choice questions—were neither challenging nor intriguing, leading to boredom and monotony. This might explain the low likelihood of students returning to the quiz. Nevertheless, students were eager to recommend the application to their friends.

The result of open-ended interview to students are described below:

Students' Response on the Assessment Content

"I think the assessment is good. I can read and understand the question easily"

"I found no burden to read the question in the application"

"The font is big enough and the colour is clear. I can read it well"

"I can directly understand the instruction when I read it"

"I don't need to ask question about the direction, neither my friend"

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Students' response on the application

> "the application is really good. We don't need to use pen and paper anymore"
> "I feel more enthusiastic doing exam by this application"
> "doing examination by this application makes me feel like I am playing game"
> "I am so proud to get the highest score. By this application, we can directly see our score. It makes me feel challenged and want to answer all the questions correctly"
> "I can't believe that I have done examination. I think I just played a game"
> "I always feel nervous to face examination day. Surprisingly, I don't feel nervous doing examination this semester. May be because the examination was executed by Kahoot!"

The data indicates that the majority of students expressed positive feelings about the assessments created by the secondary school teachers. Previous studies have also indicated that students generally have favorable attitudes toward game-based learning platforms (Bicen & Kocakoyun, 2018; Licorish et al., 2018; Smith & Brauer, 2018). Most students were satisfied with the assessment content and the use of the application as a medium for summative evaluation. However, it was noted that students' willingness to retake the quizzes outside of class time was somewhat low (see Table 3, question 9), suggesting that the Kahoot! quizzes did not fully capture their interest. Furthermore, most of the assessments created by the teachers were primarily multiple-choice questions (see Table 2), highlighting a potential weakness in the test design. In summary, future research should consider expanding the variety of question types in the Kahoot! application to enhance engagement. The positive feedback from students motivates secondary school teachers to continue using this application for assessment. Additionally, students' responses encourage teachers to rethink the design of their game-based assessments to make them more appealing and engaging.

This experience has also boosted teachers' confidence in creating more varied assessments beyond multiple-choice and True/False questions, and even in exploring other game-based applications for developing summative assessments.

4.3 Teachers' feedback of the created summative assessment

Table 4

Teachers' Feedback of the Created Summative Assessment

No	Statement	SDA	DA	A	SA
1	Kahoot! can foster students' learning motivation	0	1	36	13
2	Kahoot! can improve students' learning outcome	0	5	42	3
3	I am willing to use Kahoot! platform in developing assessment	0	9	37	4
4	It's not difficult for me to operate the features of Kahoot!	0	7	34	9
5	Kahoot! platform is suitable for teachers who just started to use educational technology / technology-based education media	0	0	43	7
6	I feel satisfied with the assessment I created by Kahoot!	0	2	44	4
7	The discussion and demonstration of my peers was useful to me when developing my assessment	0	6	38	6
8	I think the development of this game-based assessment was worth doing though it cost me much time and effort	0	29	16	5
9	I gained much confidence when I finished my game-based assessment	0	3	35	12
10	I am willing to recommend my peers to use Kahoot! platform	0	0	48	2

Table 4 highlights the responses of secondary school teachers to the questionnaire. The questionnaires were created to elicit information on secondary school teachers' intentions to use Kahoot! to develop assessment instruments. They reasoned that the Kahoot! application could increase students' motivation to learn and so improve learning achievement. However, not all teachers are willing to update their evaluation process by utilizing the Kahoot! platform. Based on the result of interview, this is because the use of Kahoot! platform does not really support authenticity and security of test.

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One student intentionally inputted other student's name and number then answered the questions wrongly. This leads to the wrong reflection of student ability. Further, in interviews, secondary school teachers stated that they have no difficulty operating the features of Kahoot!

The majority of secondary school teachers believed that Kahoot! is appropriate for teachers who are just beginning to employ educational technology/media-based education. This finding is consistent with earlier research indicating that teachers with less expertise with instructional technology were favorable toward the Kahoot! platform (Uzunboylu et al., 2020; Yapıcı & Karakoyun, 2017). With regards to their experiences developing game-based summative assessments, secondary school teachers expressed satisfaction with the tests they generated. Their peers' guidance and suggestion aided them in developing the assessment. On the other hand, they believed that developing their game-based assessment took an inordinate amount of time and effort. However, it instills a sense of confidence in them as they complete the assessment. They are often eager to promote the Kahoot! platform to their peers. It may be inferred that the usage of Kahoot! as a summative evaluation medium was well received by the secondary school teachers. Based on the open-ended interview to the teachers, they reflected that the training, particularly the process of producing game-based assessment, was a unique and inspiring experience for them. The entire project development process, which culminates in a useful product.

The teachers' responses are reflected in the following statements:

> "This training really influences me as an educator. I never imagined before that I can create assessment by using technological education media, like Kahoot!"
> "after accomplishing all the process, until now I can see a game-based assessment that I made by myself, I realize that using technological education media is not as difficult as I thought before. I think, I will use Kahoot! as assessment media from now on"

> "Frankly, the process of developing this assessment instrument is not easy for me. However, after seeing my students' enthusiasm in doing the assessment, I think it is worth it"
> "I regretted that I used only multiple-choice question while Kahoot! actually consist of some other forms of test. My students didn't show really high motivation in doing the assessment, and they said that it's just like the usual tests"
> "in my point of view, Kahoot! platform is a great media for assessment as it has beautiful design and can trigger competition atmosphere that leads to high student outcome. However, I think it will be better if Kahoot! adds feature that can ensure authenticity and security. When I administered the assessment to my students, shamely one of students cheated. He used his friend identity and intentionally answer the question with wrong answers to ruin his friend."

The previous comments indicate that the teachers have just realized the essence of using educational technology. They also finally realized that using educational technology is not as complicated as they thought before. The key aspect of educational technology is the ability of teachers to effectively use the latest educational devices and software, which are essential for instruction (Alibakhshi, 2019). Another point highlighted by the teachers is the importance of considering the novelty of the test, whether in terms of question format, design, or other features, when creating game-based assessments. This is crucial for capturing students' interest and boosting their motivation to engage with the assessments. Additionally, when using Kahoot! as an assessment tool, teachers need to exercise caution and maintain strict control over the process to prevent security and authenticity issues that could compromise the assessment results.

5. Conclusion

Teachers' attitudes and intentions for utilizing Kahoot! have been altered as a result of hands-on experience with the tool during training. They were

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able to design online summative assessment using Kahoot! platform and they utilized many multimedia components in their apps, such as pictures, audios and videos. Before the training, all of the teachers were unfamiliar with Kahoot!; however, following the training, teachers' attitudes regarding Kahoot! were favorable, and they expressed a strong desire to include Kahoot! into the learning process, especially in assessing students' achievement despite the challenges they faced regarding an inordinate amount of time and effort for preparation. As a consequence of the findings, Kahoot! is a feasible and practical assessment tool for teachers who are new to the use of educational technology in their classrooms.

Furthermore, students also responded positively towards Kahoot! as assessment media. They perceived that the questions provided through Kahoot were readable and understandable with attractive and simple interface design. Using Kahoot! boost their competitive spirit, which will push them to answer the questions properly. However, students found the evaluation given to them uninteresting and monotonous as majority of the questions developed were in the form of 'True or False' and multiple-choice questions, which were often encountered by the students. It was from this experience that the teachers gained the confidence to build more varied summative assessment in formats other than multiple-choice and True/False questions, and even to employ other game-based applications to produce summative assessment.

Having teachers who are aware of and interested in adopting cutting-edge technology in their classrooms is a huge step forward for education. More educational technology courses taken as part of a training program can help secondary school teachers learn about various game-based platforms and digital tools. It is in this way that a new generation of teachers will be able to adapt to the needs of today's students.

The positive shift in teachers' attitudes and intentions towards using Kahoot! reflects a growing enthusiasm for incorporating technology into education. Hands-on training has proven effective in overcoming initial unfamiliarity and resistance, motivating teachers to embrace innovative tools in their teaching practices. With increased confidence in using Kahoot!, teachers are now more equipped to design diverse and engaging assessment formats beyond traditional methods like multiple-choice and True/False questions. This opens up opportunities for creating more comprehensive evaluations that capture student understanding. The research also highlights the importance of ongoing professional development, especially in educational technology, to ensure teachers have the skills to explore various game-based platforms and digital tools, keeping them adaptable to the ever-changing educational landscape.

The results of this study demonstrate the significant impact of hands-on training in changing teachers' attitudes and intentions toward integrating game-based learning tools such as Kahoot! include in their assessment practices. The positive shift in perceptions of both teachers and students highlights the potential of such tools to increase engagement and diversify assessment methods in educational settings. However, the focus of the study is on Kahoot! represents a limitation because it limits exploration of other digital tools that might provide different benefits or challenges. Future research should consider a comparative analysis of multiple game-based platforms to gain a more comprehensive understanding of their effectiveness and which tools best meet different educational goals. Additionally, the study shows that teachers use Kahoot! have gained self-confidence. For more diverse assessments, student feedback regarding the monotony of question formats suggests that further innovations in assessment design are needed. Future studies could examine how different question types or more complex

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interactive elements within these tools can stimulate student interest and better assess deeper learning outcomes. Finally, continued professional development in the field of educational technology remains critical to ensure that teachers continue to develop their use of digital tools and adapt to the diverse and changing needs of their students.

References

Alibakhshi, G. (2019). In-service Training Professional Development Needs of Iranian Teachers of English as Foreign Language: A Qualitative Research Study. *Teaching English Language*, *13*(2), 95–119. https://doi.org/10.22132/tel.2019.93339

Alotaibi, S. R. (2021). A Novel Framework of Success Using of E-Assessment During Corona Pandemic. *International Journal of Emerging Technologies in Learning*, *16*(12), 215–232. https://doi.org/10.3991/ijet.v16i12.22063

Alsamaani, A. (2014). Evaluating Classroom Assessment Techniques of Novice Saudi EFL Teachers. *Journal of Arabic and Human Sciences*, *7*(2), 63–81. https://doi.org/10.12816/0009602

Alsmari, N. A. (2019). Fostering EFL Students' Paragraph Writing Using Edmodo. *English Language Teaching*, *12*(10), 44. https://doi.org/10.5539/elt.v12n10p44

Arrafii, M. A., & Sumarni, B. (2018). Teachers' Understanding of Formative Assessment. *Lingua Cultura*, *12*(1), 45. https://doi.org/10.21512/lc.v12i1.2113

Atherton, P. (2018). Atherton: More Than Just a Quiz-How Kahoot! Can Help Trainee Teachers Understand the Learning Process. *Cumbria*, *10*(2), 29–39.

Bawa, P. (2019). Using Kahoot to Inspire. *Journal of Educational Technology Systems*, *47*(3), 373–390. https://doi.org/10.1177/0047239518804173

Benhadj, Y., Messaoudi, M. El, & Nfissi, A. (2019). Investigating the Impact of Kahoot! on Students' Engagement, Motivation, and Learning Outcomes: Ifrane Directorate as a case study. *International Journal of Advance Study and Research Work*, *2*(6), 2581–5997. https://doi.org/10.5281/zenodo.3250661

Bennett, R. E. (2011). Formative assessment: A critical review. *Assessment in Education: Principles, Policy and Practice*, *18*(1), 5–25. https://doi.org/10.1080/0969594X.2010.513678

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), 72–93. https://doi.org/10.3991/ijet.v13i02.7467

Blašková, M., Blaško, R., & Kucharčíková, A. (2014). Competences and Competence Model of University Teachers. *Procedia - Social and Behavioral Sciences*, *159*, 457–467. https://doi.org/10.1016/j.sbspro.2014.12.407

Brown, H. D. (2003). Language Assesment Principles and Classroom Practice. *Pearson Longman*, 324.

Çelik, V., & Akyildiz, T. (2021). Creativity in EFL Classes: Examining Turkish Secondary School Teachers' Attitudes and Thoughts. *International Online Journal of Education and Teaching (IOJET)*, *8*(3), 2007–2027.

Çetin, H. S. (2018). Implementation of the Digital Assessment Tool "Kahoot!" in Elementary School. *International Technology and Education Journal*, *2*(1), 9–20. http://itejournal.com/

Fulcher, G., & Davidson, F. (2007). *Language Testing and Assessment: An Advanced Resource Book*. Routledge. https://doi.org/10.1111/j.1540-4781.2010.01050.x

Haling, A., Ilmi, S. N., & Astuty, A. D. (2024). Teaching Practice in a Shifting to Post-Covid 19 Era: A Study from Indonesian Higher Institution. *Qwerty. Open and Interdisciplinary Journal of Technology, Culture and Education*, *0*(0). https://doi.org/10.30557/qw000074

Hassan, M. A., Habiba, U., Majeed, F., & Shoaib, M. (2021). Adaptive gamification in e-learning based on students' learning styles. *Interactive Learning Environments*, *29*(4), 545–565. https://doi.org/10.1080/10494820.2019.1588745

Joshi, A., Vinay, M., & Bhaskar, P. (2020). Impact of coronavirus pandemic on the Indian education sector: perspectives of teachers on online teaching and assessments. *Interactive Technology and Smart Education*, *18*(2), 205–226. https://doi.org/10.1108/ITSE-06-2020-0087

Kaliisa, R., & Picard, M. (2017). A Systematic Review of Mobile Learning Adoption in Higher Education□: the African Perspective. *TOJET: The Turkish Online Journal of Educational Technology*, *16*(1), 1–18.

Khodary, M. M. (2017). Edmodo Use to Develop Saudi EFL Students' Self-Directed Learning. *English Language Teaching*, *10*(2), 123. https://doi.org/10.5539/elt.v10n2p123

Klimova, B., & Polakova, P. (2020). Students' perceptions of an EFL vocabulary learning mobile application. *Education Sciences*, *10*(2). https://doi.org/10.3390/educsci10020037

Licorish, S. A., Owen, H. E., Daniel, B., & George, J. L. (2018). Student perception Kahoot. *Research and Practice in Technology Enhanced Learning*, *13*(9), 1–24.

Lund, A., Furberg, A., Bakken, J., & Engelien, K. L. (2014). What does professional digital competence mean in teacher education? *Nordic Journal of Digital Literacy*, *2014*(4), 281–299. https://doi.org/10.18261/issn1891-943x-2014-04-04

Facilitating secondary

Ma'azi, H., & Janfeshan, K. (2018). The effect of Edmodo social learning network on Iranian EFL learners writing skill. *Cogent Education*, *5*(1), 1–17. https://doi.org/10.1080/2331186X.2018.1536312

Mantsose, J. S. (2012). *An Investigation of the Challenges Affecting Teachers' Classroom Assessment Practices*. *June*, 227. http://uir.unisa.ac.za/bitstream/handle/10500/8128/thesis_sethusha_mj.pdf?sequence=1

Menezes, C. C. N., & Bortolli, R. De. (2016). Potential of Gamification as Assessment Tool. *Creative Education*, *07*(04), 561–566. https://doi.org/10.4236/ce.2016.74058

Moorhouse, B. L. (2020). Adaptations to a face-to-face initial teacher education course 'forced' online due to the COVID-19 pandemic. *Journal of Education for Teaching*, *46*(4), 609–611. https://doi.org/10.1080/02607476.2020.1755205

Nkhoma, C., Nkhoma, M., Thomas, S., & Tu, L. K. (2018). Gamifying a Flipped First Year Accounting Classroom Using Kahoot! *International Journal of Information System and Engineering*, *6*(2), 93–115. https://doi.org/10.24924/ijise/2018.11/v6.iss2/93.115

Parra-Santos, T., Molina-Jordá, J. M., Maiorano-Lauria, L. P., & Casanova-Pastor, G. (2018). Gamification for formative assessment in the framework of engineering learning. *ACM International Conference Proceeding Series*, 61–65. https://doi.org/10.1145/3284179.3284193

Pereira de Sousa, B. F. (2018). Engaging students in the evaluation process using co-creation and technology enhanced learning (CC-TEL). *CEUR Workshop Proceedings*, *2190*(September).

Prieto, M. C., Palma, L. O., Tobías, P. J. B., & León, F. J. M. (2019). Student assessment of the use of kahoot in the learning process of science and mathematics. *Education Sciences*, *9*(1). https://doi.org/10.3390/educsci9010055

Puad, L. M. A. Z., & Ashton, K. (2021). Teachers' views on classroom-based assessment: an exploratory study at an Islamic boarding school in Indonesia. *Asia Pacific Journal of Education*, *41*(2), 253–265. https://doi.org/10.1080/02188791.2020.1761775

Qays, S., Ketabi, S., Pirnajmuddin, H., & Amirian, Z. (2022). The Impact of Blended Learning on Iraqi Students' Achievement in English Literature Courses and Their Attitudes towards It. *Teaching English Language*, *16*(1), 119–139. https://doi.org/10.22132/TEL.2022.149211

Quyen, N. T. Do, & Khairani, A. Z. (2016). Reviewing the Challenges of Implementing Formative Assessment in Asia: The Need for a Professional Development Program. *Journal of Social Science Studies*, *4*(1), 160. https://doi.org/10.5296/jsss.v4i1.9728

Razali, H. L. A. M., & Singh, C. K. S. (2023). Acceptance and Attitude Towards Quizziz Usage in Reading Comprehension Lessons Among ESL Secondary Students. *Journal of Advanced Research in Applied Sciences and Engineering Technology*, *31*(1), 156–167. https://doi.org/10.37934/araset.31.1.156167

Sabandar, G. N. C., Supit, N. R., & Suryana, E. (2018). Kahoot!: Bring the Fun Into the Classroom! *IJIE (Indonesian Journal of Informatics Education)*, *2*(2), 127. https://doi.org/10.20961/ijie.v2i2.26244

Smith, A., & Brauer, S. (2018). Use of Kahoot□! game for increased student motivation and understanding in a Thermodynamics course. *ASEE Southeastern Section Conference*. http://www.asee-se.org/proceedings/ASEE2018/papers2018/123.pdf

Taras, M. (2005). Assessment - Summative and formative - Some theoretical reflections. *British Journal of Educational Studies*, *53*(4), 466–478. https://doi.org/10.1111/j.1467-8527.2005.00307.x

Uzunboylu, H., Galimova, E. G., Kurbanov, R. A., Belyalova, A. M., Deberdeeva, N., & 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

Wang, A. I., & Tahir, R. (2020). The effect of using Kahoot! for learning – A literature review. *Computers and Education*, *149*(May 2019), 103818. https://doi.org/10.1016/j.compedu.2020.103818

Wen, J., & Yang, F. (2020). Use of moodle in college English language teaching (Reading and listening) in China: A narrative review of the literature. *International Journal of Information and Education Technology*, *10*(6), 466–470. https://doi.org/10.18178/ijiet.2020.10.6.1408

Wichadee, S., & Pattanapichet, F. (2018). Enhancement of performance and motivation through application of digital games in an english language class. *Teaching English with Technology*, *18*(1), 77–92.

Yapıcı, İ. Ü., & Karakoyun, F. (2017). Gamification in Biology Teaching: A Sample of Kahoot Application. *Turkish Online Journal of Qualitative Inquiry (TOJQI)*, *8*(4), 396–414.

Zainuddin, Z., Chu, S. K. W., Shujahat, M., & Perera, C. J. (2020). The impact of gamification on learning and instruction: A systematic review of empirical evidence. *Educational Research Review*, *30*(February). https://doi.org/10.1016/j.edurev.2020.100326

Zhang, C., Yan, X., & Wang, J. (2021). EFL Teachers' Online Assessment Practices During the COVID-19 Pandemic: Changes and Mediating Factors. *Asia-Pacific Education Researcher*, *30*(6), 499–507. https://doi.org/10.1007/s40299-021-00589-3