

The Correlation between Teacher Role and Student Perception of Kahoot! Usage in Reading Instruction

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Abstract. The traditional approach to teaching reading texts in senior high schools has often been met with a lack of enthusiasm from students. Moreover, learning and comprehending numerous English texts in the classroom might be very boring. Thus, students must complete tedious assignments, such as understanding the text, extracting the key ideas from each paragraph, and answering questions based on the given texts. As a result, educators are increasingly exploring alternative strategies to make reading instruction more interactive and engaging. Technological innovations have led to the development of diverse learning models, along with tools that can enhance the efficacy of the language teaching and learning process. Gamification is becoming increasingly widespread, particularly in technology-enhanced training, to motivate and engage students in the learning process. This study examines the integration of technology into classroom activities. Some teachers have initiated this technique to engage and stimulate student engagement in classroom activities, particularly during reading class. Kahoot! is a technology platform that has demonstrated significant value in the language classroom. It can serve as both a teaching instrument and an evaluative measurement. This study aims to evaluate the implementation of Kahoot! This quiz aims to enhance student engagement in reading assignments and examine how the teacher's role can effectively encourage student interaction by implementing Kahoot! This study presents a small-scale survey conducted with 63 students at SMAN 1 Cilacap, documenting their language learning experiences while utilizing the Kahoot! Quiz for reading assignments. The research employed a questionnaire with twenty items on a five-point Likert scale. The results indicate that nearly all participants had positive experiences while learning to understand the texts using Kahoot! quiz. The majority of participants reported being actively involved in language learning while using Kahoot! This platform facilitates student engagement and active participation in the language acquisition processes. As a result, it offers a more profound and enriching language acquisition experience.

Keywords: Gamification, ICT In Language Learning, Kahoot!, Reading Assignment, Student Engagement

Introduction

Reading is a lifelong skill that starts at school and continues beyond formal education (Küçükoğlu, 2013). For students, it plays a significant role since it equips them with the ability to access knowledge. It not only functions as a technical skill but also as a cognitive process since it encourages students to analyse, comprehend, and apply new information. Moreover, Kuntari (2011) highlights that reading serves as a bridge to connect the students' prior knowledge and newly acquired concepts. Further, reading also supports students' deep understanding of the subject and academic success (Daulay et al., 2026; Agustina & Ro'isatin,

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2024). In the EFL context, reading becomes more crucial as it serves as a gateway for students to increase their language learning quality (Hazaea, 2025). Taken together, reading is not only essential for academic success but also a basis of successful language learning.

Nevertheless, one of the unshakable issues in reading instruction is students' engagement. Despite this central importance, reading is often noticed as the least engaging skill to enhance (Hidayat, 2024; Pan et al., 2025). EFL students repeatedly struggle with a limited vocabulary that hinders their comprehension of the texts (Azimah & Sujannah, 2024), the complexity of the text that involves high-order processing (Hartshorn et al., 2017; Muñoz & Valenzuela, 2020), and complicated grammar that causes disorientation (Hassan & Dweik, 2021). Furthermore, a lack of background knowledge prevents the students from contextualizing the text (Al-Jarrah & Ismail, 2018). These difficulties collectively lead to the students' disengagement in the classroom reading activity. When engagement is subdued, students are more likely to consider reading as a monotonous activity that leads to frustration and anxiety. Consequently, promoting sustained engagement in reading instruction is crucial for both EFL teachers and students.

To address these challenges, EFL teachers have progressively employed technology as a promising tool to make reading instruction more engaging and motivating. It is supported by Anggraini et al (2023) that technology-based learning applications contribute significantly to the learning and teaching process by providing varied, multimodal, and accessible resources. Among these innovations, gamification has gained EFL teachers' interest in terms of integrating technology into teaching reading skills as it improves learner engagement by converting boring courses into an enjoyable activity (Abdelhamid, 2023; Ali et al., 2024; Cavus et al., 2023; Muthmainnah et al., 2026). This not only creates an enjoyable learning process but also guides students to endure through difficulties by rewarding effort and progress. By doing so, gamification boosts interest, motivation, and strengthens students' engagement. In this way, gamification can transform the traditional classroom into engaging experiences.

Within this domain, Kahoot! has impressed EFL teachers due to its accessibility, real-time interaction, and promotion of students' engagement (Correia & Santos, 2017; Forssell et al., 2023; Neureiter et al., 2020; Zhang & Yu, 2021). It allows teachers to create quizzes and interactive tasks that not only check the students' understanding but also enhance the students' involvement. Many research has focused on the effectiveness of Kahoot! in teaching language skills (Benzizoune & Chibi, 2024; Katemba et al., 2022; Muslimin et al., 2024; Rowiyah, 2024; Yürük, 2020).

There have been previous studies that discussed about the use of Kahoot to improve reading skills such as Putri Desmala Sari (2019) conducted research entitled "The Use of Kahoot! Media in Teaching Reading at the University of Sumatera Utara, Setiawan (2020) carried out study entitled "Students' Perception on The Use of Kahoot! Application in Reading Narrative Text at SMAN 3 Makassar," while Chotimah and Rafi examined "The Effectiveness of Using Kahoot! as a Media in Teaching Reading in STKIP PGRI Jombang." Their findings demonstrate that most of students have improved in their comprehension skills through the utilization of Kahoot! as a medium. Unfortunately, research is scarce about the implementation of Kahoot! related to students' engagement in reading assignments and the role of teachers as facilitators of Kahoot! Further, limited attention has been paid to the relationship between teachers' and students' roles in the use of Kahoot! in reading instruction, and to how teachers facilitate its use to enhance students' engagement in reading instruction.

Since teachers' instructional decisions and facilitation strategies directly shape students' experiences, particularly engagement. Investigating these aspects provides critical insight into expanding the benefits of Kahoot! for EFL reading instruction.

Given these considerations, the present study aims to investigate the relationship between the role of teachers and students in the use of Kahoot! in reading instruction and how teachers can facilitate the use of Kahoot! in enhancing students' engagement in reading instruction. By focusing on both teachers' and students' perspectives, this research intends to provide a more complete understanding of how Kahoot! can be effectively employed in EFL reading instruction. The essential purpose of this research is to create insights into Kahoot! as

a pedagogically meaningful tool to foster sustained engagement. In doing so, the research aims to contribute to both the theoretical discussion of gamification in language education and the practical strategies for EFL teachers.

Theoretical Framework

Reading engagement in EFL contexts

For many students, particularly in EFL classrooms, reading often becomes tiresome and stressful since they have to deal with the unfamiliar vocabulary, complicated sentences, and unknown context (Al-Jarrah & Ismail, 2018; Hassan & Dweik, 2021). These negative perceptions definitely lead to the students' disengagement. In addition, it will weaken their understanding of the text and their overall language learning progress (Mystkowska-Wiertelak, 2022). Therefore, the students' engagement in reading instruction plays a vital role.

When the students are engaged in the reading activity, they will readily comprehend the instructions effectively (Barber & Klauda, 2020). Saito (2025) also suggests that if the students are engaged in the reading, they will tackle the texts with curiosity and persistence rather than frustration. This allows the students to sustain effort even when texts are challenging. Thus, reading engagement not only supports comprehension but also builds a positive attitude toward language learning as a purposeful and rewarding process.

Kahoot! in EFL Reading Instruction

Kahoot! is widespread as a game-based activity that turns the classroom atmosphere into a more interactive and engaging one (Wang, 2015). Unlike the traditional reading instructions that focus on comprehending the text and feel monotone, Kahoot! brings the elements that capture students' attention. Furthermore, Wang & Tahir (2020) state that Kahoot! has three purposes: increasing students' engagement, motivation, pleasure, and concentration, which can enhance the learning outcomes. By creating more attractive reading instruction, Kahoot! not only does it support comprehension, but it also develops a dynamic classroom setting that fosters engagement through participation and collaboration.

Research has constantly shown the benefits of integrating Kahoot! into the language classroom, particularly reading instruction. As a game-based learning platform, it stipulates active participation, engagement, and collaboration (Cameron & Bizo, 2019; Holbrey, 2020). Kahoot! also allows teachers to design interactive media to transform classroom activity into an enjoyable activity (Kaur & Nadarajan, 2020; Plump & LaRosa, 2017). Empirical studies also noticed that features in Kahoot! can sustain and motivate the students in the learning process. Anggraini et al (2023), in their research on tenth-grade students of a Vocational high school, highlight the students' perception of Kahoot! as an assessment tool that can motivate the students and create a fun classroom ambience. Furthermore, Marsa et al (2021) notice the high impact on the students' engagement and positive attitude toward using Kahoot! for reading instruction.

While some studies present the positive effects of Kahoot! as a learning platform, studies to examine the relationship between teachers and students in the use of Kahoot! are still limited in number. Even less is known about how teachers implement it to gauge the students' engagement in the reading instructions. Therefore, this study seeks to fill the gap by investigating both the relationship between teachers and students in the use of Kahoot! and the specific strategies on how teachers utilize it to promote students' engagement in EFL reading instruction.

Hypothesis Development

The formation of hypotheses in this research is founded upon Bandura's (1986) in the Social Cognitive Theory, which posits that teachers' role as a learning agent is extremely influential in determining students' perceptions and motivation in adopting learning media. We are of the view that teachers' active participation in output support, facilitation, and motivation will enhance students' favorable perceptions toward Kahoot!'s use in teaching reading. Moreover, Vygotsky's constructivist view of teaching and learning, as cited in 1978, values

social interaction and teacher direction in effective learning processes, which will enhance student participation and interest. Founded upon these underlying theoretical bases as well as prior research findings indicating a favorable correlation between teachers' role and students' perceptions in technology-driven learning contexts (Johnson & Aragon, 2003; Liaw, 2008), in this research, the hypothesis is defined in the following manner:

1. H1 (Directional): There is a positive and significant relationship between the teacher's role and students' perception of using Kahoot! in reading assignments.
2. H0 (Null): There is no significant relationship between the teacher's role and students' perception of using Kahoot! in reading assignments.

Material and Method

The research applies a mixed-method design with an explanatory sequential approach, where quantitative and qualitative data are collected sequentially. The rationale for the choice of this approach is to gather a complete understanding of how the role of the teacher and students' attitudes towards Kahoot! contribute to learning to read. This mixed-method approach is based on the view of Creswell (2014), which holds that a combination of quantitative and qualitative data could provide a rich and valid description of the phenomenon under study.

This study examines the population of the study sample, which comprised two groups of participants. First, the students enrolled in English courses at SMA Negeri 1 Cilacap in Central Java. There were 62 participants selected by the purposive sampling method. The selection criteria for the students are those who have low motivation and engagement toward reading materials. Thus, the researcher uses Kahoot! as media in the learning process to see the correlation between teachers' role and students' perspective for reading instruction. Thus, it is based on the principle of purposive sampling, which emphasizes participants' selection on the basis of relevance to the area of study (Patton, 2015). Second, certain students were also selected for interviews by means of purposive sampling on the basis of experience by using Kahoot!

The research instrument was a survey questionnaire and a semi-structured interview guide. The survey questionnaire is designed in line with Bandura's (1986) Social Cognitive Theory, which emphasizes the importance of the agents' role (teachers in this study) in influencing individuals' perception and motivation (students). The construct of the teacher's role was measured by a series of items that required support, facilitation, and motivation from the teacher, whereas the construct of student perception was measured by items requiring interest, engagement, and ease of use of Kahoot!. All items possess a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The tools were tested and found reliable to ensure data quality, following measurement principles in quantitative research (Hair et al., 2017). The semi-structured interview guide is meant to ask teachers about their experience facilitating the application of Kahoot!. This includes the challenges encountered and the efforts made to increase student engagement through a constructivist theory-based approach (Vygotsky, 1978) that emphasizes the social interactionist aspect of learning.

Table 1.
The Instruments Indicators

Respondent	Instructional Guidance	Content Alignment	Question Design	Motivation and Fairness	Frequency of Kahoot! Use	Students' Perception
1	4,48	4,52	4,44	4,48	3,96	4,49
2	4,47	4,52	4,44	4,47	3,94	4,49
3	4,46	4,51	4,43	4,46	3,93	4,48
4	4,47	4,53	4,43	4,47	3,91	4,48

5	4,47	4,53	4,43	4,47	3,91	4,48
6	4,46	4,54	4,46	4,46	3,9	4,49
7	4,46	4,53	4,46	4,45	3,88	4,5
8	4,46	4,54	4,46	4,45	3,88	4,49
9	4,47	4,53	4,46	4,44	3,86	4,49
10	4,46	4,52	4,45	4,43	3,84	4,49
11	4,47	4,53	4,44	4,44	3,84	4,48
12	4,49	4,54	4,45	4,44	3,81	4,49
13	4,48	4,53	4,45	4,43	3,8	4,5
14	4,49	4,54	4,44	4,44	3,78	4,49
15	4,48	4,53	4,45	4,43	3,75	4,49
16	4,47	4,52	4,44	4,41	3,72	4,48
17	4,46	4,51	4,43	4,4	3,7	4,47
18	4,47	4,52	4,41	4,41	3,69	4,46
19	4,48	4,53	4,42	4,42	3,68	4,47
20	4,49	4,55	4,43	4,43	3,67	4,46
21	4,48	4,54	4,44	4,42	3,64	4,47
22	4,46	4,52	4,43	4,4	3,61	4,46
23	4,48	4,54	4,41	4,41	3,59	4,45
24	4,49	4,58	4,41	4,42	3,59	4,45
25	4,47	4,57	4,44	4,41	3,55	4,47
26	4,46	4,57	4,42	4,41	3,53	4,46
27	4,47	4,58	4,42	4,42	3,5	4,46
28	4,46	4,57	4,43	4,4	3,46	4,48
29	4,5	4,62	4,41	4,41	3,46	4,46
30	4,48	4,61	4,47	4,39	3,41	4,5
31	4,48	4,59	4,45	4,38	3,36	4,48
32	4,5	4,61	4,45	4,39	3,44	4,47
33	4,52	4,63	4,47	4,4	3,42	4,49
34	4,5	4,62	4,48	4,38	3,41	4,5
35	4,52	4,63	4,47	4,38	3,41	4,49
36	4,5	4,61	4,45	4,35	3,37	4,49
37	4,48	4,6	4,43	4,33	3,33	4,49
38	4,46	4,58	4,4	4,3	3,26	4,47
39	4,44	4,56	4,38	4,27	3,25	4,46
40	4,41	4,54	4,35	4,26	3,22	4,45
41	4,39	4,52	4,37	4,23	3,23	4,45
42	4,4	4,52	4,39	4,21	3,24	4,44
43	4,38	4,5	4,4	4,23	3,2	4,46
44	4,37	4,47	4,43	4,24	3,16	4,46
45	4,39	4,5	4,39	4,25	3,22	4,46
46	4,41	4,53	4,39	4,26	3,24	4,48
47	4,44	4,56	4,41	4,25	3,25	4,49
48	4,47	4,57	4,44	4,23	3,2	4,51
49	4,43	4,54	4,43	4,21	3,11	4,52
50	4,42	4,54	4,43	4,27	3,12	4,54

51	4,38	4,5	4,46	4,25	3,25	4,53
52	4,32	4,45	4,42	4,18	3,14	4,54
53	4,35	4,5	4,36	4,2	3,15	4,5
54	4,39	4,56	4,4	4,22	3,28	4,54
55	4,5	4,56	4,44	4,38	3,13	4,59
56	4,57	4,57	4,56	4,36	2,93	4,65
57	4,67	4,67	4,5	4,58	3,17	4,66
58	4,8	4,6	4,58	4,7	3,6	4,73
59	4,75	4,5	4,7	4,75	3,88	4,72
60	4,67	4,33	4,63	4,67	4	4,65
61	5	4,5	4,5	5	4,5	4,53
62	5	5	4,75	5	5	4,8

Based on the above table, it can be seen that the number of respondents is 62 students. There are six instrument indicators, they are instructional guidance, content alignment, question design, motivation and fairness, frequency of Kahoot! use, and students' perception. The research instrument was a survey questionnaire and a semi-structured interview guide. The survey questionnaire is designed in line with Bandura's (1986) Social Cognitive Theory, which emphasizes the importance of the agents' role (teachers in this study) in influencing individuals' perception and motivation (students). The construct of the teacher's role was measured by a series of items that required support, facilitation, and motivation from the teacher, whereas the construct of student perception was measured by items requiring interest, engagement, and ease of use of Kahoot!. All items possess a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The tools were tested and found reliable to ensure data quality, following measurement principles in quantitative research (Hair et al., 2017). The semi-structured interview guide is meant to ask teachers about their experience facilitating the application of Kahoot!. This includes the challenges encountered and the efforts made to increase student engagement through a constructivist theory-based approach (Vygotsky, 1978) that emphasizes the social interactionist aspect of learning.

Table 2.
The Questionnaire Guidance

Indicator	Statement
Instructional Guidance	2 statements
Content Alignment	2 statements
Question Design	2 statements
Motivation & Fairness	2 statements
Frequency of Use	1 statement
Students' Perceptions	9 statements

Based on the above table, it can be seen that there are six instrument indicators, consisting of the instructional guidance, content alignment, question design, motivation fairness, frequency of use, and students' perception. The first indicator relates to how effective teachers' instruction helps students understand the materials and solve technical problems. The second indicator is whether the text is suitable for the topic discussed in class and whether the questions are designed to be challenging and interesting for students. Further, it discusses the fact that multiple-choice questions help students to understand more about the materials.

The third indicator discusses whether or not the question is for Kahoot! Quizzes are designed to be challenging and interesting enough for students. Thus, the multiple-choice form is chosen to help students have a better understanding of the text. The fourth indicator mentions teachers' fairness in giving the same opportunity and motivation to students who participate actively in the quiz.

The fifth indicator states the frequency of teachers in using Kahoot! for daily learning. Some teachers tend to use Kahoot! while the others are not. The last indicator relates to students' perception of Kahoot! as a learning medium. It includes students' motivation and engagement, instant feedback, time limitation that leads to effective reading, and tight completion that will make the class more engaging.

Table 3.
The Questionnaire Guidance

No	Focus	Statement
1	General Experience	1 statement
2	Teachers' role (Instruction)	1 statement
3	Teachers' Role (Motivation)	1 statement
4	Learning Perception	1 statement
5	Material Understanding	1 statement
6	Challenge	1 statement
7	Expectation	1 statement

Based on the above table, the interview guidance has 7 focuses. They are general experience, teachers' role (instruction and motivation), learning perception and material understanding, the challenge, and the hope.

The first interview focuses on students' general experience in using Kahoot! as a medium of learning reading. The next focus relates to teachers' role as the ones who give clear instructions while applying Kahoot! in the classroom, and the motivation they give to the students to maintain students' enthusiasm. Next, the students' perception discusses whether the features of Kahoot! help the students to understand the materials, or it makes them depressed.

Moreover, the next indicator is how Kahoot! can give contribution toward students' material understanding. The last indicators mention the challenge of using Kahoot! in reading class, such as signal problems, time constraints, and curriculum demands. Thus, some students expect the teacher to use Kahoot! as often as possible because they prefer a more modern medium in reading class rather than the traditional one.

Quantitative data collection entailed the online transmission of questionnaires through the Google Forms medium to students for 3 weeks. Qualitative data were collected through face-to-face interviews with the students, which were later taped and transcribed for analysis. This enables the implementation of Creswell's (2014) protocols for data collection in a mixed-method study. Quantitative analysis was conducted using Structural Equation Modeling with Partial Least Squares (SEM-PLS). This was because it can analyze the relationship between latent constructs and non-normally distributed data that do not necessarily have to be normally distributed (Hair et al., 2017). The test includes construct validity and reliability testing, path coefficients estimation, t-statistical value testing for significance, and R-square value testing to determine intensity levels of the relationship between variables. Qualitative data were analyzed using thematic analysis techniques (Braun & Clarke, 2006) in order to determine key themes with regard to the role of teachers in Kahoot! Usage and students' perceptions of the effect of their role on learning participation.

Results and Discussion

Results

The relationship between the role of teachers and students' perceptions of the use of Kahoot! in reading instruction.

Descriptive statistics

A descriptive statistical analysis was used in this research to make an initial impression of the data distribution for each research construction. Here, it uses the mean of scores based on the rating of the indicator to identify the general direction of respondents' answers and their variation. A high mean indicates that a majority of respondents give a favorable rating to the indicator, while a relatively small standard deviation indicates the homogeneity of respondent answers. Therefore, the findings from descriptive statistics can inform us about respondents' preferences for teacher roles and students' attitudes towards using Kahoot! for reading learning before proceeding to analyze measurement models and structural models.

Table 4.
Descriptive statistics for key variables.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Instructional Guidance	62	4.32	5.00	4.4919	.12298
Content Alignment	62	4.33	5.00	4.5521	.07644
Question Design	62	4.35	4.75	4.4485	.06847
Motivation and Fairness	62	4.18	5.00	4.4037	.15936
Frequency of Kahoot! Use	62	2.93	5.00	3.5526	.36122
Students' Perception	62	4.44	4.80	4.5060	.07180
Valid N (listwise)	62				

Based on the results of descriptive statistics, it can be seen that each construct studied has a relatively high average score, showing a positive tendency of the respondents towards the role of teachers and the use of Kahoot! in reading learning. Content Alignment obtained the highest average score ($M = 4.55$; $SD = 0.076$), which means that students assess the suitability of the content presented by the teacher with Kahoot! Excellent. Furthermore, Instructional Guidance also received a high score ($M = 4.49$; $SD = 0.123$), confirming that the teacher's guidance in directing students during the Kahoot! was perceived to be effective. Design question ($M = 4.45$; $SD = 0.068$) and Motivation and Fairness ($M = 4.40$; $SD = 0.159$) show that students appreciate the quality of the question design and the sense of fairness and motivation. Meanwhile, the frequency of Kahoot! Use obtained the lowest average ($M = 3.55$; $SD = 0.361$), indicating that the intensity of Kahoot! is not too high or as important as the quality of the implementation. The students' perception in general was recorded as high ($M = 4.51$; $SD = 0.072$), which reinforces the finding that students have a positive perception of Kahoot! in learning to read.

Principal Component Analysis/PCA

Total Variance Explained analysis seeks to determine the degree to which each factor or construct in the research can explain the variability of available data. The higher the percentage of variants explained, the more robust the construct is in capturing the concept being assessed. In this case, eigenvalues, percent of variance, and cumulative variance were considered as a guide to determine each factor's relative contribution. Thus, the result of the total variance explained analysis provides an important foundation to examine the construct validity, since it shows how much information is accurately accounted for by the factors constructed compared to the total data.

Table 5.
Total Variance Explained

Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.015	66.911	66.911	4.015	66.911	66.911
2	.932	15.541	82.452			
3	.739	12.321	94.773			
4	.214	3.569	98.342			
5	.078	1.307	99.649			
6	.021	.351	100.000			

Extraction Method: Principal Component Analysis.

The table shows that only one main component has an eigenvalue greater than 1, which is 4.015, explaining 66.91% of the total variance. Meanwhile, the other components have an eigenvalue below 1 (0.932; 0.739; 0.214; 0.078; 0.021), so they are not considered the main factor based on Kaiser's criteria (eigenvalue > 1). These results show that all indicators used in the research instruments consistently contain one dominant factor. Thus, the construct studied, namely, the role of teachers in the implementation of Kahoot!, can be considered a key dimension that is compelling in explaining student perception. The variance value of 66.91% is relatively high, thus showing that the instrument used has good construct validity. This means that the majority of data variance can be explained by one core factor, which supports the validity of the instrument in measuring the phenomenon being studied.

Measurement model

There are two model-testing stages in structural equation modeling, partial least squares (SEM-PLS) analysis, i.e., the measurement model (outer model) and the structural model (inner model). The measurement model is used to examine the validity and reliability of the indicators for measuring latent constructs. The tests of the measurement model include discriminant validity tests, convergent validity tests, and construct reliability tests, which should confirm that indicators represent constructs reliably and accurately. Indicators with loading factor values, AVE, and composite reliability that satisfy the criterion shall be valid and reliable at this stage. Thus, the measurement model is a central foundation in SEM-PLS because it defines the data quality to be utilized subsequently while estimating structural relationships between constructs in the structural model.

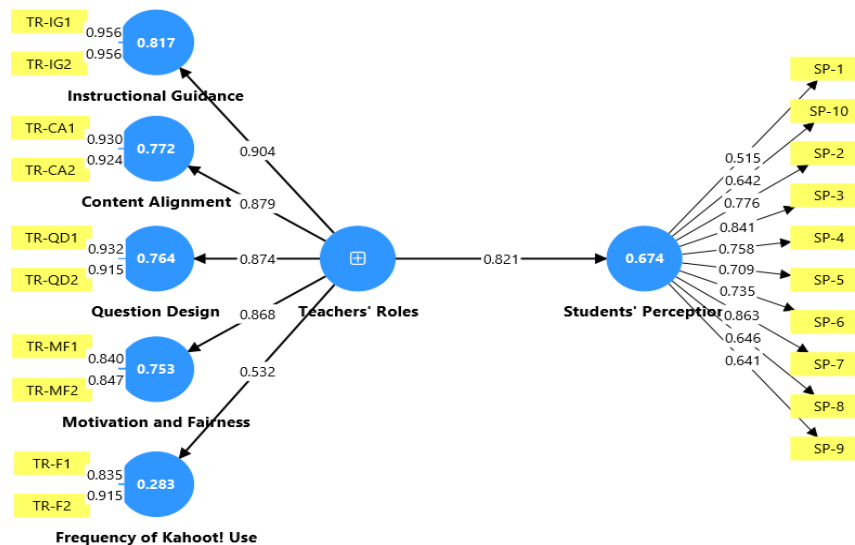


Figure 1.

The measurement model results of the study include key variables and their indicators.

Instructional guidance, content alignment, question design, motivation, fairness, and frequency of Kahoot! The five primary components of the teachers' roles construct were extracted from the SEM-PLS analysis results.

The reliability of the Instructional Guidance and Content Alignment dimensions is over 0.77, with their loading value ranging from 0.930 to 0.956. This indicates that in the decision to adopt an instructor's role, teacher leadership and appropriateness of material are primary determinants. The high loading of Question Design (0.915–0.932; reliability 0.764) indicates the significance of the quality of Kahoot! Question design in student engagement. On the other hand, motivation and fairness also contributed significantly (loading 0.840–0.847; reliability 0.753), demonstrating that these variables played a significant part in teachers' work to administer the quiz.

Even though the indicator was very strong (loading 0.835–0.915) and the frequency of the Kahoot! Dimension only had weak construct reliability (0.283), intensity of Kahoot! Did not appear to influence the manner in which the students perceived things greatly. Having a path, A coefficient of 0.821 revealed a strong structural relationship between teachers' duties and students' perceptions. According to the R² value of the Students' Perceptions construct equal to 0.674, 67.4% of students' perceptions towards using Kahoot! in reading instruction is accounted for by the teacher's involvement. There are some low loadings (e.g., SP-1 = 0.515), but the majority of loading values of the Students' Perceptions construct vary from 0.515 to 0.863. In summary, all these findings show that teachers' facilitation in creating quality questions, ensuring that the information provided is relevant, and showing students clear directions is critical to having them enjoy Kahoot! While teaching reading.

Results of this research demonstrate that teachers' role in providing instructional guidance, ensuring content alignment, and designing quality question design has a determining effect on students' perceived positive use of Kahoot! in reading instruction, whereas motivation and fairness dimensions are evidenced as significant in maintaining students' engagement, although frequency of Kahoot! has no substantial effect. The educational effectiveness of Kahoot!'s use is found to be mainly controlled by instructional design quality and teacher facilitation rather than mere frequency of its use. With 0.674 as the value of R², this result confirms that over two-thirds of students' perceived variation is explained by teachers' participation, so integration of gamification technology in reading instruction of EFL is only optimal when teachers can guide, accommodate content, and design questions in effective terms.

Therefore, the quality of teachers' use has a far greater impact than the frequency at which they use Kahoot! Hence, teachers' strategic and active interventions can indeed engage students.

Table 6.
Discriminant validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Content Alignment	0.836	0.837	0.924	0.859
Frequency of Kahoot! Use	0.703	0.748	0.868	0.767
Instructional Guidance	0.906	0.906	0.955	0.914
Motivation and Fairness	0.594	0.594	0.831	0.711
Question Design	0.828	0.835	0.921	0.853
Students' Perception	0.893	0.903	0.913	0.518
Teachers' Roles	0.907	0.925	0.925	0.562

The measurement model test results indicate that every construct in this research possesses a sufficient degree of reliability and validity. Construct Content Alignment has Cronbach's Alpha = 0.836, Composite Reliability = 0.924, and AVE = 0.859. The value exceeds the minimum threshold by a substantial margin, suggesting excellent internal consistency and indicating that the indicator can strongly explain construct variance. Build frequency of Kahoot! The study utilized Cronbach's Alpha 0.703, Composite Reliability 0.868, and AVE 0.767, indicating acceptable reliability and adequate convergent validity.

The Construct Instructional Guidance shows very high reliability with Cronbach's Alpha 0.906, Composite Reliability 0.955, and AVE 0.914. Similarly, the construct of question design is also very robust, with Cronbach's Alpha 0.828, composite reliability 0.921, and AVE 0.853. This reveals that the indicators in the two constructs actually represent the measured variables.

In the Motivation and Fairness construct, Cronbach's Alpha stands at 0.594, which is slightly below the 0.70 cutoff. However, its composite reliability stood at 0.831 and AVE at 0.711, which still met the requirements (Hair et al., 2019). Thus, although internal reliability is quite poor, this construct is still acceptable because it has adequate convergent validity.

Student Perception has a Cronbach's Alpha of 0.893, a Composite Reliability of 0.913, and an AVE of 0.518. An AVE value of more than 0.50 indicates that this construct is still adequate in terms of validity, even though it is close to the minimum requirement. As a comparison, the teachers' role latent variable garnered a Cronbach's alpha of 0.907, a composite reliability of 0.925, and an AVE of 0.562. This score confirms that the indicators used are reliable and valid enough to represent the teacher's role in this research.

Overall, the test results offer evidence that all the constructs in the model possess sufficient internal consistency, reliability, and acceptable convergent validity to be utilized for subsequent structural model testing.

Results of hypothesis testing

In hypothesis testing using PLS-SEM, the null hypothesis (H_0) is that there is no statistically significant association between the variables ($\beta = 0$). The alternative hypothesis (H_1) is the researcher's prediction of a statistically significant effect, either positive or negative, between the constructs. Thus, the following table illustrates and tests just the alternative hypotheses (H_1, H_2, H_3 , etc.), with the null hypothesis being implicitly retained as the statistical baseline to compare against.

Table 7.
The findings of RQ1 (Hypothesis Testing, Direct Effects)

Hypotheses	Relationship	Std. Beta	Std. Error	T values	P values	BCI LL 05%	BCI UL 95%	Decision
H_0	Use of Kahoot! does not affect language engagement.	–	–	–	–	–	–	Rejected
H_1	Use of Kahoot! → Language Engagement	0.615	0.044	14.073	0.00	0.535	0.680	Accepted

Based on the results of the analysis in the outer loadings and path coefficient tables, the hypothesis test was carried out by looking at T-values and P-values. The decision-making criteria refer to Hair et al. (2019), namely:

1. If the T-values ≥ 1.96 and the P-value ≤ 0.05 , then the relationship is considered significant.
2. If the T-values < 1.96 or the P-value > 0.05 , then the relationship is considered insignificant.

In the results of this study, all indicators that connect teachers' roles with various dimensions (content alignment, frequency of Kahoot! use, instructional guidance, motivation, fairness, and question design) and their relationship to students' perception showed a T-value of statistics much greater than 1.96, and all P-values = 0.000 (except TR-F1 with T = 3,000, P = 0.003, which remained significant). This means that all paths of the relationship are positive and significant.

Thus, an alternative hypothesis (H_1) stating that there is a positive and significant relationship between the role of teachers and students' perceptions of using Kahoot! on the reading assignments is accepted, while the null hypothesis (H_0) is rejected. These findings reinforce the theory that teacher involvement in designing, guiding, and facilitating the use of digital learning media such as Kahoot! has a significant contribution to student perception, both in terms of motivation, fairness, and learning engagement.

Teachers' role in facilitating the use of Kahoot! to increase student engagement in reading instruction

Challenges in Learning

Some students stated that the main challenge in using Kahoot is time constraints. The limited game format makes it difficult for them to explore new vocabulary because they don't have time to look up the meaning of words. As one respondent put it, "No, because Kahoot is a game with a time limit, so there's no time to look up the meanings of the vocabulary." [3]. This shows that although Kahoot is fun, it is less supportive of students who take longer to understand the vocabulary material.

Classroom Atmosphere

Kahoot is proven to be able to create a dynamic and enjoyable classroom atmosphere. The competitive element makes the class more lively, full of laughter, and interaction. One student said, *"The competition in Kahoot makes the classroom more lively, with shouting and laughter, especially with the many quiz themes we can use."* [2]. Another respondent added that the atmosphere of the classroom became more intense as the game progressed: *"The classroom grows more intense, with friends shouting in panic. It's really fun!"* [4]. These findings suggest that Kahoot enriches the classroom atmosphere through healthy and enjoyable competition.

Engagement and Motivation

Kahoot gamification increases student engagement and motivation. The leaderboard feature, competition, and personal satisfaction when winning encourage them to be more focused and motivated. One of the students admitted, *"By playing Kahoot, I become more competitive. I strive hard to surpass my friends' scores so I can be the top scorer in the game."* [3]. Another student said, *"I enjoy competing with my friends using Kahoot. It makes the learning process more fun and challenging."* [1]. In addition, the leaderboard is an additional motivational trigger: *"The leaderboard gives extra motivation to do better, as I want to reach the top rank."* [1]. In fact, victory brings its satisfaction: *"I feel challenged when my friends have higher scores, and I must get a higher score. It's really satisfying to be the top scorer."* [4].

Learning Effectiveness

Students assessed Kahoot to be effective in improving reading text comprehension, vocabulary, and retention of main ideas. Question formats such as multiple choice help them understand quickly: *"One feature of Kahoot that helps me understand reading better is the multiple-choice or true/false quiz format, which is designed to test my comprehension of the text quickly."* [1]. In addition, the time limit on reading efficiency is practiced: *"The time limit on each question encourages me to read efficiently without neglecting understanding."* [1]. Instant feedback is also highly appreciated: *"Instant feedback after answering is very useful because I immediately know which answers are correct and wrong, allowing me to correct my understanding."* [1].

Kahoot is also considered easier than traditional methods: *"I find digital learning through Kahoot easier compared to traditional methods. With Kahoot, I can more easily find the correct answers and gain understanding from the materials provided through videos."* [1]. In terms of reading motivation, students admitted that they enjoyed the reading process more: *"Yes, after learning with Kahoot, I now enjoy the reading process more. Kahoot makes learning more interactive and fun."* [1].

In terms of vocabulary, Kahoot motivates students to learn independently: *"Yes, using Kahoot makes it easier for me to learn vocabulary because it presents material in an interactive and fun quiz format, which motivates me to learn more."* [1] *"Yes, during the quiz, I encountered many vocabulary words that I didn't know the meaning of. Afterward, I can look them up and learn their meanings."* [4]. Kahoot also helps identify the main idea of the text: *"Kahoot helps me understand the main idea of the reading text because it presents questions directly and focuses on identifying the main idea of a short text."* [1], and maintaining focus: *"The timed questions help me stay focused and improve my ability to quickly grasp the main idea of a text."* [1]. In fact, repetition of questions helps retention: *"By doing Kahoot quizzes, I can memorize and remember the main ideas of the texts more effectively because this process challenges me to recall the details clearly."* [4].

Learning Preferences

Students show different preferences in using Kahoot. Many prefer this method because it is interactive, visual, and fun: *"Kahoot offers an interactive, fun, and competitive learning experience, which makes me more motivated and focused."* [1]. However, some emphasize the importance of combinations with printed books: *"Printed books still have*

advantages, especially for in-depth and structured explanations. The best approach is a combination of both..." [1]. Learning style preferences also play a role, as one respondent revealed: "Kahoot is very interactive and engaging, with several modes and fun sounds. It makes me more excited to follow the lesson, unlike printed books, which are more text-heavy and boring." [4].

Reading Habits

Students' reading habits vary between digital and traditional media. Some students rarely read apart from textbooks: "I don't read often, just from textbooks." [1]. However, many are actively reading on social media: "I almost read English texts every day on social media, especially Twitter and Medium. I learn a lot of vocabulary from these apps." [4]. This suggests that digital media is the main source of English exposure for most students, although printed books continue to function as a formal learning resource.

Social and Collaborative Learning

In addition to competitions, Kahoot also encourages cooperation between students. Healthy competition creates a collaborative atmosphere when they discuss the wrong answer: "When one of us receives the wrong answer, we often discuss it afterward. This helps us understand better and strengthens our social bonds." [1]. There is also an appreciation for the spirit of healthy competition: "With Kahoot, we can compete healthily. It makes learning more enjoyable." [3].

Technology and Digital Learning

Kahoot is appreciated for its interactive and visual technology features. Students indicated that the poll feature is helpful, along with the study mode, as evidenced by their comment: "Polling feature." [2] "Study feature." [3]. The display of questions on my phone screen is also convenient: "The feature where questions appear on my phone screen is helpful. It's easier for me to follow the questions directly on my screen." [4]. Engaging visualization also increases interest in learning: "The most interesting feature is the appealing visualization, such as the use of images, videos, and bright colors that make learning more visually engaging." [1]. The leaderboard features and game modes add to the excitement: "The leaderboard creates a fun, competitive atmosphere, which motivates me to participate and do my best." [1]. Furthermore, instant feedback speeds up understanding: "The instant feedback after answering helps me understand the meaning of words right away, which allows me to correct my understanding." [1].

Discussion

The findings indicate that while Kahoot! fosters fun and engagement in reading instruction, challenges such as time constraints limit vocabulary discovery, mirroring Wang and Tahir's (2020) systematic review, in which the pressures of time disadvantaged slower learners. Nevertheless, Kahoot!'s interactive and competitive nature significantly enhances classroom atmosphere and participation, in line with earlier research by Zarzycka-Piskorz (2016) and, more recently, by Licorish et al. (2022), who found that gamification increased engagement and enjoyment. Students' perceptions of greater comprehension, vocabulary, and memory are resonant with Bicen and Kocakoyun's (2018) study, which proved Kahoot! Maximizes learning efficiency with instant feedback and question formats. Prior preferential use of mixing digital resources with hardcopy books suggests hybrid learning perspectives (Nguyen et al., 2021), in which multimodal learning resources support diverse learning styles. Furthermore, evidence of group discussion after Kahoot! tests testifies to social constructivist perspectives (Vygotsky, 1978; supplemented by current digital learning literature like Martín-Sómer et al., 2021), which suggest the use of Kahoot! Not only in constructing a healthy level of competition, but also as collaborative sense-making. Overall, these findings suggest that the teachers' role in implementing balances the issues of time, using multimodal resources,

and encouraging competition and cooperation for maximum engagement and learning outcomes.

Conclusion

As the research results indicate, the use of Kahoot! in EFL reading classes greatly increases student interest, motivation, and participation in class activities. It creates a lively classroom atmosphere because it's both competitive and collaborative, and also, "its multiple-choice and quick-response questions help students learn vocabulary, remember main ideas, understand content, and recall information." Most importantly, when using Kahoot and other stimuli, the teacher's role is crucial for constructing the instructional frame, designing gap activities, formulating questions related to the subject content, and clarifying the purpose of the set questions. Of course, worrying indicators like a 20-second time allocation to answer questions are a challenge that suggests other ways to assist in processing time. These results mean that the use of gamification in reading classes, with appropriate teacher support, becomes much more active and purposeful. In the future, research could explore more practical possibilities for addressing time constraints, such as integrating Kahoot! with student independent study or with more traditional study methods. There may be larger conclusions made in comparative studies with other gamification platforms about their effectiveness on learners' different language skills. Further longitudinal studies would be helpful to study the long-term effects of Kahoot! on students' literacy skills and reading motivation. Lastly, further studies could look at the comparative integration of digital and print resources to support different learners.

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