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Gamified Formative Assessments for Enhanced Engagement of Engineering English Learners

Dr. M. Sarppa Raje[1], Dr. A. Tamilselvi[2],
[1] Assistant Professor, Department of English, Thiagarajar College of Engineering, Madurai, Tamilnadu
[2] Professor, Department of English, Thiagarajar College of Engineering, Madurai, Tamilnadu
[1] mseeng@tce.edu, [2] tamilselvi@tce.edu

***Abstract*— The COVID-19 pandemic has prompted a significant shift in education, necessitating the adoption of remote and hybrid learning models in schools and universities. This transition poses challenges in maintaining student engagement, particularly in language learning classes due to the interactive nature of language acquisition. This study investigates the efficacy of low-stakes game-based quizzes and polling formative assessments facilitated through platforms like Kahoot, Mentimeter, Quizizz, Plickers, Google Forms, and Moodle in enhancing engagement in language learning. A single-group quantitative post-test-only study was conducted, examining the positive influence of these assessments on 180 engineering students across three years of a Technical English course, encompassing both online and offline semesters. The research assesses the effectiveness of game-based quizzes and polls as formative assessments in promoting active learning and mitigating student disengagement, both during the pandemic and in regular classes. Over the three years, the study highlights students' favorable perceptions of these activities, especially when integrated with multimedia platforms. Grounded in Self-Determination Theory (SDT), the research emphasizes the convenience, high engagement, and accessibility of game-based formative assessments on various devices. Automated assessment results and quantitative analysis of student surveys affirm heightened engagement and participation. This contribution adds to the growing evidence supporting multimedia tools and formative assessments to enhance student engagement in education.**

***Keywords*—Game-Based Quizzes and Polls; Low-stakes Formative Assessment; Self-Determination Theory; Student Disengagement; Technical English Course for Engineering Students.**

***JEET Category*—Practice**

I. INTRODUCTION

Blended learning, digital learning, and gamified learning have been buzzwords in education even before the pandemic (Nuci et al., 2021). However, some teachers remained hesitant to incorporate technology into their teaching methods. Thanks to pandemic panic-gogy (the term combining panic and pedagogy termed by Sean Michael Morris, senior instructor in an interview at the University of Colorado Denver's School of Education and Human Development, about the COVID-19 pandemic's impact on higher education, as cited in Baker 2020), teachers have explored various technical tools and used a myriad of techniques like interactive whiteboards, breakout rooms, and the World of Warcraft (WoW) gaming platform to teach and learn online (Hasram, 2019). One effective initiative was the integration of just-in-time activities such as game-based quizzes and polls (Singh et al., 2019). These activities provided an engaging and fun way for students to test their knowledge and receive immediate feedback (Nikolić et al., 2020). Gamified quizzing and polling activities
came as a rescue to subdue students' passivity and connectivity-related excuses to disconnect themselves from the class (Kolesnikova, 2017). Thus, this research paper explores the need for game-based quizzing and polling as a low-stakes formative assessment.

Traditional forms of assessment, such as exams and essays, often put students under a lot of pressure and fail to provide immediate feedback on their performance (Boboc, 2020). On the other hand, game-based quizzing and polling provide a fun and interactive way for students to test their knowledge, receive instant feedback, and learn from their mistakes (Van der Kleij, Cumming, & Looney, as cited in Singh et al., 2022). One of the main benefits of game-based quizzing and polling is that it engages students and motivates them to learn (Tajeddin and Hedayati, 2021). Games are inherently enjoyable and provide students with a sense of accomplishment when they successfully complete a task or answer a question correctly. This engagement can lead to better retention of information and deeper learning. Besides offering an edutaining experience for the learners, game-based quizzes and polls conducted using technical multimedia platforms produce instantaneous results and immediate feedback, which are crucial features of formative assessment ("Using Quizizz in the Classroom: 10 Inspirational Ideas from Our Community"). Comparative analysis of student performance helps teachers identify areas in which students are struggling and adjust their instructional practices to better meet students' needs (Al-Qaysi and Al-Emran, 2021).

Healthy competition and a nail-biting finish to watch the dynamic leaderboard scores are sure shots to engage and keep up students' high energy levels (Aravinthan et al., 2021). Game-based digital quizzes can be designed to assess a range of learning outcomes, from basic knowledge recall to complex problem-solving skills. Hence, the study records the benefits of using game-based quizzing and polling as low-stakes formative assessments and provides examples of how it can be used in the classroom. This paper will discuss the need for conducting game-based quizzing and polling as a low-stakes formative assessment by answering the following research questions:

1. How do low-stakes game-based quizzing and polling formative assessments using tech platforms such as

Kahoot, Mentimeter, Quizizz, Plickers, Google Forms, and Moodle affect students' engagement in language learning classes?

2. What are the perceptions of students towards the use of low-stakes game-based quizzing and polling formative assessments in language learning classes?
3. Does the practice of Gamified Formative Assessments in technical English classes improve the students' performance?

The study is expected to reveal that low-stakes, game-based quizzing and polling assessments using technology platforms such as Kahoot, Mentimeter, Quizizz, Plickers, Google Forms, and Moodle significantly enhance students' engagement in language learning classes. Additionally, the study is expected to demonstrate that students perceive these assessments positively and find them to be effective tools for learning. The rest of the paper is organized as follows: it presents the study's theoretical framework and discusses previous research to identify gaps in the literature, describes the methodology, assessment tools used in the study, and the data analysis procedures. This is followed by a discussion of the findings, limitations, and conclusions.

II. Theoretical Background

When it comes to enhancing student engagement in English language learning classes, game-based multimedia quizzing and polling can effectively fulfill the three psychological needs of autonomy, competence, and relatedness, according to Self-Determination Theory (Kelly, 2014).

Firstly, game-based multimedia quizzing and polling can provide students with a sense of autonomy, as they can engage in the learning process in a self-directed and interactive manner. Students can choose to take part in quizzes and polls at their own pace, and the immediate feedback they receive from the game-based activities can help them identify areas where they need to improve, giving them a sense of control over their learning (Hsu et al., as cited in Chiu, 2021).

Secondly, game-based multimedia quizzing and polling can enhance students' competence by providing them with opportunities to demonstrate their knowledge and skills in a low-stakes and engaging environment. The instant feedback and dynamic leaderboard scores can boost students' confidence and motivate them to continue learning and improving their English language skills (Yuza and Yusuf, 2023).

Finally, game-based multimedia quizzing and polling can foster a sense of relatedness among students, as they can interact with their peers in a fun and competitive way. Through healthy competition and collaborative activities, students can feel connected to their classmates and the learning community, leading to a more positive and enjoyable learning experience.

In summary, the use of game-based multimedia quizzing and polling in English language learning classes aligns with the principles of self-determination theory and can effectively enhance student engagement by fulfilling their psychological needs for autonomy, competence, and relatedness.

III. Literature Review

Research has shown that game-based multimedia quizzing and polling can enhance student engagement and motivation. According to Van der Kleij et al. (2016), game-based assessments are more engaging and enjoyable for students, leading to better retention of information and deeper learning. Similarly, Liu and Liu (2020) found that game-based assessments can enhance students' motivation and reduce their anxiety about learning.

Several studies have investigated the impact of game-based multimedia quizzing and polling activities on student engagement and motivation in English language learning classes. For example, a study by Wang et al. (2016) found that using game-based quizzes improved students' motivation and engagement in English language learning, particularly among low-achieving students. Similarly, a study by Turgut (2021) found that using game-based activities, such as quizzes and polls, improved student motivation and engagement in a Turkish EFL classroom.

Furthermore, game-based multimedia quizzing and polling can be used to assess a range of learning outcomes, from basic knowledge recall to complex problem-solving skills. According to Kolesnikova (2017), these assessments can be designed to test various skills, including grammar, vocabulary, listening, and reading comprehension. The use of multimedia elements, such as videos and images, can also make these assessments more engaging and effective (Hasram 2019).

One of the key benefits of game-based multimedia quizzing and polling is that they provide immediate feedback to students (Jauregi and López, 2021). According to Singh et al. (2022), immediate feedback is crucial in formative assessment as it helps students learn from their mistakes and adjust their learning strategies accordingly. Additionally, these assessments can help teachers identify areas in which students are struggling and adjust their instructional practices to better meet students' needs (Van der Kleij et al., 2016).

Another advantage of game-based multimedia quizzing and polling is that they can create a sense of healthy competition and motivation among students. According to Mayer et al. (2009), competitive quizzes can increase student motivation and engagement in language learning classes. Moreover, the use of leaderboards and rewards can provide an additional incentive for students to participate and perform well (Kolesnikova, 2017).

Other studies have explored the impact of specific types of game-based multimedia activities on student engagement and motivation. For example, a study by Kolesnikova (2017) found that using game-based polls improved student engagement in an online English language learning course. Similarly, a study by Liu and Liu (2020) found that using a mobile game to teach English vocabulary improved student motivation and engagement. Wang et al. (2016) and Licorish et al. (2018) compared the effect of paper-based quizzes and Kahoot game-based quizzes and concluded that Kahoot quizzes engaged students better. Wang and Lieberoth (2016) compared digital quizzing platforms such as Kahoot, Quizizz, and Google Forms, finding that Kahoot performed better than

Quizizz and Quizizz better than Google Forms. Mokhtar (2016) investigated the effect of online quizzes on learning performance, while Davis (2011) reported the use of the Edmodo application, which reduced students' test anxiety. Hampels and Pleines (2013) evaluated learner engagement and learner perceptions using the Moodle platform for two consecutive years, reporting increased student engagement and interaction.

In this study, six different multimedia platforms were used to conduct game-based quizzing and polling assessments, namely Kahoot, Mentimeter, Quizizz, Plickers, Google Forms, and Moodle. These platforms were chosen based on their acknowledgment as superior platforms by previous literature and ease of use for both the researcher and students.

Limitations of game-based multimedia quizzing and polling should also be considered (Rausch and McKenna, 2021). Although game-based multimedia quizzing and polling activities have numerous advantages, there are also some limitations and concerns associated with their use. For example, some students may not be familiar with the technology required to participate in these assessments (Hasram et al., 2021). Additionally, there may be concerns about the validity and reliability of these assessments (Singh et al., 412). Therefore, it is essential to address these potential limitations and concerns. Future research should focus on developing effective and reliable game-based multimedia quizzing and polling assessments that can support language learning (Sánchez et al. 2017).

IV. Methodology

The study utilized an experimental research design to quantitatively analyze the impact of multimedia quizzing and polling activities on enhancing students' engagement while covering the Technical English course syllabus. Implementation of the activities was carried out during the first year of the study, with subsequent editing of the questions and reimplementation in the following two years. A pilot study was conducted during an online class to identify any critical issues that gave a sense of direction for the main research study conducted during the onset of regular offline classes after the pandemic break. The research objective was to understand the effect of these activities on students' engagement, and a single-group design was employed where all participants within the group received the same treatments and assessments.

To collect data, user logs were examined, and a total of ten formative, low-stakes quizzes, polls and post-test were facilitated during six continuous weeks of technical English classes in all three years. The lessons assessed included homophones and homonyms, connectives, listening comprehension, concord, misspelled words, reported speech, reading comprehension, active and passive voice, conditional clauses, and American and British English. In addition to the automated results obtained from the quiz and poll apps (Sample Reports Shown in Fig.1), a feedback questionnaire was collected and analyzed.

The results produced due to the conduct of multimedia quizzing and polling assessments had the same increased outcome on students' engagement in both the online and offline modes, as observed during the study.

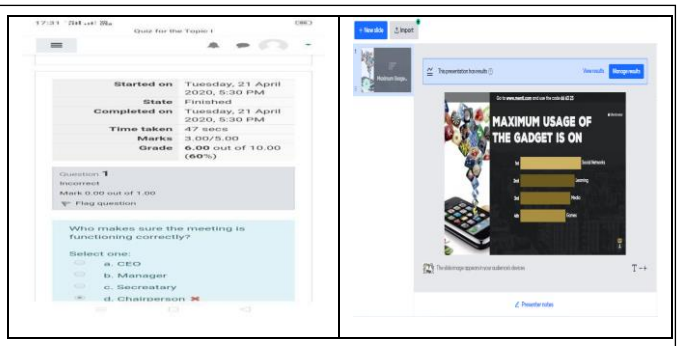

Fig 1: Sample Automated Reports Generated on Apps

V. Discussion

The first research question "How do low-stakes game-based quizzing and polling formative assessments using tech platforms such as Kahoot, Mentimeter, Quizziz, Plickers, Google Forms, and Moodle affect students' engagement in language learning classes?" is a critical aspect of this research article. The justification for this research question lies in the fact that there is a growing need to explore innovative and effective teaching methods that can increase students' engagement and motivation in language learning classes. Low-stakes game-based quizzing and polling formative assessments using tech platforms such as Kahoot, Mentimeter, Quizziz, Plickers, Google Forms, and Moodle have emerged as promising approaches to achieve this goal. However, despite the growing popularity of these tools, there is still limited research on their impact on students' engagement in language learning classes (Li and Gao, 2019).

Thus, this research question aims to address this gap in the literature by exploring the effectiveness of low-stakes game-based quizzing and polling formative assessments using tech platforms such as Kahoot, Mentimeter, Quizziz, Plickers, Google Forms, and Moodle on students' engagement in language learning classes. The findings of this study can have significant implications for language educators, instructional designers, and policy-makers as it can inform the development of effective teaching methods and strategies to enhance students' engagement and motivation in language learning classes, particularly in the context of the COVID-19 pandemic. Therefore, this research question is important and relevant to the field of language education and can contribute to the existing body of literature on the use of technology in language teaching and learning.

The following Table 5.1 exemplifies the chosen apps' features, format, types of feedback, accessible platforms, and the cost involved in their implementation in classes to bring about effective student learning. Table 5.2 shows the major benefits involved in the implementation of the chosen apps. Table 5.1 – Various Features of the Chosen Apps to be considered for implementation:

TABLE I
VARIOUS FEATURES OF THE CHOSEN APPS TO BE CONSIDERED FOR IMPLEMENTATION

App Name	Features	Format	Feedback	Accessibility
Kahoot	Game-based learning, interactive quizzes and discussions	Online platform	Real-time feedback	Available on web and mobile
Mentimeter	Polling and presentation tool, interactive quizzes and presentations	Online platform	Real-time feedback	Available on web and mobile
Quizziz	Learning platform, engaging quizzes and assessments	Online platform	Instant feedback, progress tracking	Available on web and mobile
Plickers	Polling tool, multiple-choice questions with printed cards	Offline and online	Immediate feedback	Requires printed cards and smartphone app
Google Forms	Survey tool, quizzes and assessments	Online platform	Real-time feedback	Available on web and mobile
Moodle	Learning management system, online courses and assessments	Online platform	Real-time feedback	Available on web and mobile

TABLE II
ELEMENTS INVOLVED IN THE IMPLEMENTATION OF CHOSEN APPS

App Name	*Kahoot!*	*Mentimeter*	*Quizziz*	*Plickers*	*Google Forms*
Various Question Types Possibility	Yes	Yes	Yes	Yes	Yes
Unlimited Number of Questions per Quiz	No	No	Yes	Yes	Yes
Time Limit on Answers	Yes	Yes	Yes	No	No
Unlimited Number of Participants	Yes	Yes	Yes	Yes	Yes
Easily Accessible	Yes	Yes	Yes	Yes	Yes
Student Pace	Yes	Yes	Yes	Yes	Yes
Leaderboard	Yes	No	Yes	No	No
Easily Exportable Reports	Yes	Yes	Yes	Yes	Yes
Team Mode	Yes	Yes	Yes	No	No
Feedback	Yes	Yes	Yes	Yes	Yes
Extremely Easy to Play	Yes	Yes	Yes	Yes	Yes

Implementation Components
Confirmation
Inquiry
Problem Identification
- Characteristics of cloud computing,
- Need for Cloud computing
- Real-world Problems which require related tools and technologies to a solution
Background
- Key Technology enablers of cloud computing
- Cloud Services, and Other Cloud-based Platforms
- Necessary cloud and tools required solving the problem chosen
Design of Solutions
- Implementation of sample cloud services to add authentication, database, and storage to a sample application
- Use-case on cloud platform for application
- Selection of necessary cloud services for chosen application
- Identification of cloud services from commercial cloud service providers

As Tables I and II demonstrate, this study primarily focuses on the benefits of implementing game-based quizzes and polls as formative assessments in language learning. These assessments are cost-effective, easily accessible, and have been proven to be an effective way to create engaging and interactive tests that provide immediate feedback to students. This approach can be especially beneficial in subjects like Technical English, where students may struggle to engage with the material due to its technical nature. By incorporating game-based quizzing and polling activities, instructors can create a more enjoyable and engaging learning experience for their students. Additionally, the use of multimedia elements in the assessments, such as images, videos, and sound effects, is particularly effective in capturing students' attention and enhancing their engagement (Martínez-Ortiz and Olmos-Migueláñez, 2020).

The second research question of this study is important to understanding the effectiveness of gamified assessments in language learning. The question is, "What are the perceptions of students towards the use of low-stakes game-based quizzing and polling formative assessments in language learning classes?" While previous research has shown that gamified assessments can increase engagement and motivation, it is also important to understand how students perceive these assessments through a well-structured feedback questionnaire. By investigating students' perceptions, we aim to gain insights into the specific aspects of gamified assessments that are most effective or appealing to students, as well as potential areas for improvement. We chose 10 questionnaire items from popular literature and revised them with subject experts to ensure that the questions were comprehensible, appropriate, and unambiguous. We also established the content validity and reliability of the questionnaire and found them to be significant. The reliability coefficient (Cronbach's alpha) value for the questionnaire was .930, reflecting a high level of internal consistency. Table III displays the questionnaire items and the data collected.

TABLE III
STUDENTS' FEEDBACK ON THE USE OF GAME-BASED QUIZZING AND POLLING FORMATIVE ASSESSMENTS

Items on the Questionnaire	**Mean**	**Mode**	**SD**
1. Game-based quizzing and polling assessments were really engaging.	4.237	4	0.468
2. Game-based quizzing and polling formative assessments helped me understand the course material better.	4.271	4	0.485
3. The multimedia platforms used for the formative assessments were easy to navigate.	4.373	4	0.641
4. I felt motivated to participate in the assessments due to the game-based approach.	4.203	4	0.406
5. Game-based quizzing and polling formative assessments helped me identify areas where I needed improvement.	4.169	4	0.422
6. Game-based quizzing and polling formative assessments helped me retain the course material better.	4.203	4	0.446

Items on the Questionnaire	Mean	Mode	SD
7. Game-based quizzing and polling formative assessments made learning the Technical English course enjoyable.	4.322	4	0.507
8. Game-based quizzing and polling formative assessments helped reduce my anxiety and stress levels during the course.	4.492	5	0.626
9. I recommend the use of game-based quizzing and polling formative assessments in other courses as well.	4.424	5	0.700
10. Overall, I feel better engaged and actively participated in all the game-based quizzing and polling formative assessments.	4.169	4	0.813

Here are some specific observations and insights from the data recorded in Table III:

Engagement: In response to the questionnaire item, "Game-based quizzing and polling assessments were engaging," the majority of students (73%) agreed or strongly agreed. The mean rating was 4.237 out of 5, indicating a relatively high level of engagement. This suggests that the game-based approach was successful in capturing students' attention and motivating them to participate in the assessments, which is consistent with the findings of the study by Wang et al. (2016).

Understanding: When asked if game-based quizzing and polling formative assessments helped them understand the course material better, most students (98%) either agreed or strongly agreed. The mean rating was 4.271 out of 5, indicating a high level of perceived effectiveness. This suggests that the game-based approach was successful in helping students comprehend the course material and grasp key concepts, as identified in the study by Torun and Bulut (2020).

Navigation: In response to the questionnaire item, "The multimedia platforms used for the formative assessments were easy to navigate," most students (92%) either agreed or strongly agreed. The mean rating was 4.373 out of 5, indicating a high level of usability. This suggests that the multimedia platforms used for the game-based assessments were user-friendly and easy to navigate, similar to the findings reported in Dziedzic (2021).

Identification of areas for improvement: In response to the questionnaire item "Did game-based quizzing and polling formative assessments help me identify areas where I needed improvement?" most students (99%) either agreed or strongly agreed. The mean rating was 4.169 out of 5, indicating a high level of perceived usefulness. This suggests that the game-based approach was successful in helping students identify their strengths and weaknesses concerning the course material.

Retention: When asked if game-based quizzing and polling formative assessments helped them retain the course material better, most students (98%) either agreed or strongly agreed. The mean rating was 4.203 out of 5, indicating a high level of perceived effectiveness. This suggests that the game-based approach was successful in helping students retain what they had learned and apply it to future assignments and assessments as elucidated in Sarpparaje (2016).

Enjoyment: In response to the questionnaire item "Did game-based quizzing and polling formative assessments make learning Technical English enjoyable?" most students (98%) either agreed or strongly agreed. The mean rating was 4.322 out of 5, indicating a high level of perceived enjoyment. This suggests that the game-based approach was successful in making the course more enjoyable and engaging for students.

Overall, the data cumulatively answers the second research question of the study that the game-based approach to formative assessments in Technical English was well-received by students and had a positive impact on their engagement, understanding, navigation, motivation, and identification of areas for improvement.

The third research question involves a rigorous examination of the impact of gamified formative assessments on students' performance. The data auto-generated from the gamified assessment tools and the post-test provided a comprehensive view of the students' academic progress and growth. The joint and individual contribution of formative assessments conducted by the researcher during the following lessons: Connectives, Listening Comprehension, Homonyms, Concord, Misspelt Words, Reported Speech, Reading Comprehension, Voice, Conditional Clause and American English and British English using various technological platforms are predicted. For studying the contribution of formative assessment on students' learning outcomes in post-test, the data are analyzed with the help of Multiple Correlations.

As shown in Table IV, the R-value and R2 values are found to be 0.849 and 0.721 indicating a high degree of correlation between the dependent variable (post-test marks) and the independent variable (formative assessment marks). Table V shows p = 0.000 which is less than 0.05 predicting the statistically significant contribution of gamified formative assessments to the improved post-test performance of the students.

TABLE IV
REGRESSION ANALYSIS BETWEEN THE SCORES OF FORMATIVE TESTS AND POST-TEST

Model	R	R Square	Adjusted R Square	Std. the error of the estimate	R Square Change
1	0.956[a]	0.914	0.896	3.149	0.914

a. Predictors: (Constant), American English and British English, Conditional Clause, Reported Speech,Homonyms, Concord, Connectives, Misspelt Words, Voice, Reading Comprehension, Listening Comprehension
b. Dependent Variable: TPOST

TABLE V
REGRESSION COEFFICIENTS OF THE VARIABLES

Model	Sum of Squares		df	Mean Square	F	Sig.
1	Regression	5069.459	10	506.946	51.113	.000[b]
	Residual	476.067	48	9.918		
	Total	5545.525	58			

a. Dependent Variable: TPOST
b.Predictors: (Constant), American English and British English, Conditional Clause, Reported Speech, Homonyms, Concord, Connectives, Misspelt Words, Voice, Reading Comprehension, Listening Comprehension

Therefore, the regression analysis between formative assessment scores and post-test marks indicates that the gamified formative assessments positively influence better learning outcomes of students.

One of the pivotal revelations of this research pertains to the correlation between Gamified Formative Assessments and improved student performance. The trajectory of performance metrics across the study's three-year span is indicative of the transformative power of gamification. Across the span of the study, the students' performance metrics exhibited a noteworthy upward trajectory. This transformation was not limited to a particular mode of learning, as the data indicated similar levels of enhancement in both online and offline contexts. This resonates with previous research that underscores the connection between gamified approaches and heightened engagement levels (Deterding et al., 2011; Hamari et al., 2014).

In essence, the discussion section underscores the transformative potential of Gamified Formative Assessments as a learning catalyst. From heightened engagement to improved performance, the fusion of technology and gamification holds the promise of shaping a more vibrant and effective language learning landscape.

VI. Finding

The research findings unequivocally illuminate the transformative potential of gamification in enhancing student engagement in language learning classes. The use of tech platforms such as Kahoot, Mentimeter, Quizziz, Plickers, Google Forms, and Moodle to conduct gamified quizzes and polls led to increased participation and motivation among students. Additionally, the students' perceptions towards the use of these assessments were generally positive, indicating that these methods can be engaging, and motivating to help students navigate and identify areas of improvement when incorporated into language learning classes. This finding is consistent with previous research Wang et al. (2016) and Sarpparaje et al. (2018) that has suggested that incorporating game-based learning activities into the classroom can improve student engagement and motivation. One pivotal element that contributed to the improved performance was the integration of technology and immediate feedback that elevated students' comprehension, retention, and application of course material as reflected in Pekrun et al. (2009). However, it is important to note that while the results are promising, there may be limitations to using game-based quizzing and polling formative assessments.

VII. Limitations

While game-based quizzing and polling formative assessments can be effective in enhancing student engagement, there are several limitations to consider, as supported by the literature evidence.

Technical Issues: A study by Cordeiro et al. (2017) found that technical issues, such as network instability, device incompatibility, and software problems, can hinder the use of game-based learning in classrooms and limit its effectiveness.

Limited Learning Outcomes: While game-based learning can be engaging for students, it may not always result in deeper learning outcomes. A study by Mayer et al. (2009) found that game-based learning can lead to better performance on tests of factual knowledge, but may not necessarily lead to deeper understanding or transfer of knowledge to real-world situations.

Lack of Participation by Disinterested Students: Despite the potential benefits of game-based learning, some students may not be interested in participating in these activities. A study by Chen and Hsieh (2012) found that while game-based learning can increase student participation, a few may be still uninterested or disinterested in any form of instruction due to one or many personal reasons.

Teacher Training: A study by Garris et al. (2002) found that teachers may require additional training to effectively implement game-based learning in their classrooms. The study found that teachers who received training on game-based learning were better able to design and implement effective learning activities.

Cost: Implementing game-based learning can be expensive, requiring the purchase of hardware, software, and other materials. A study by Van Eck (2006) found that the cost of implementing game-based learning was a significant barrier for some institutions and teachers.

VIII. Conclusion

Given the unprecedented challenges posed by the COVID-19 pandemic on teaching and learning, the use of low-stakes game-based quizzing and polling formative assessments has emerged as a viable option to promote active learning and student engagement (Chen et al., 2019). By creating an interactive and engaging learning environment, these assessments can facilitate language acquisition and help students develop a deeper understanding of the course material (Davis, 2011).

It is recommended that language teachers consider incorporating low-stakes game-based quizzing and polling formative assessments into their pedagogical practices to enhance student engagement, performance and promote active learning (Dicheva et al., 2015). Future research can further explore the effectiveness of these assessments in different language learning contexts and with diverse student populations. Overall, the findings of this study provide valuable insights for language educators and offer a promising approach to addressing the challenges of language learning in the current educational landscape. As such, further research is necessary to determine the effects of using game-based quizzing and polling formative assessments on academic achievement in language learning classes. Future studies should also investigate ways to overcome the limitations of game-based learning and identify strategies to optimize its benefits. For instance, research could examine how to effectively integrate game-based learning activities into the curriculum, identify which types of games are most effective for different types of learners, and explore ways to enhance teacher training in game-based learning.

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