

Foreign Language Learning Gamification Using Quizizz: A Systematic Review Based on Students' Perception

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Abstract. Gamification, or the use of game attributes outside of a game context to affect learning-related behaviors or attitudes, is seen as an innovative way to support the diverse needs of students with learning or behavioral challenges. One digital educational game that is gaining popularity is Quizizz, a game-based online test that enables entertaining multiplayer teaching activities and allows learners to practice with their devices. This study aimed to examine students' perceptions of the use of Quizizz as a formative test tool in German classrooms at Universitas Pendidikan Indonesia. The participants of this study were first-year students studying German who were given a formative test using Quizizz for one semester. A descriptive qualitative research design was used in this study, in which data were collected from questionnaires to gain insight into how Quizizz affected the aspects of enjoyment, motivation, engagement, and satisfaction. The results showed that all aspects asked in the questionnaire received a strong positive response, indicating that students have a very good perception of Quizizz in the classroom. The positive response to the use of Quizizz in German language learning suggests that it could be used more widely as a formative assessment tool in language learning. The findings suggest that gamification can be an effective way to engage students and motivate them to learn. As a result, educators may want to consider using other gamified tools and techniques in the classroom to create a more enjoyable and engaging learning experience.

Keywords: *Gamification, German Classroom, Quizizz, Students' Perception*

<https://ojs.unm.ac.id/eralingua>



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INTRODUCTION

The use of gamification in education is becoming increasingly popular. Gamification is defined as the use of game attributes outside the context of a game to affect learning-related behaviors or attitudes (Landers, 2014). The use of gamification in learning is inevitable in today's digital era, as gamification in education can have cognitive, emotional, and social impacts (Lee & Hammer, 2011). Gamification stems from the idea that some traditional activities in the classroom are inherently uninteresting and do not attract students' attention. (Çakiroğlu et al., 2016). Gamification is also recognized as an innovative way of supporting the diverse needs of students with learning or behavioral challenges (Zainuddin et al., 2020).

Due to the rise of using gamification in learning, there are now various digital educational games available. The literature indicates that digital educational games are effective at keeping learners engaged (Bawa, 2019), are vital for sustaining high levels of motivation and engagement (de Lope et al., 2017), and have a positive effect compared to traditional learning methods (Ismail & Mohammad, 2017; Wang & Lieberoth, 2016).

One of the popular digital educational games used is Quizizz. The results of data analysis for July 2021 showed that this Quizizz web is ranked as the seventh most visited web for the science and education category (similarweb.com, 2021). Quizizz itself is not something new that is used in lectures at the German Language Education Study Program, FPBS UPI. Previous research has shown that Quizizz was effective in improving students' vocabulary and grammatical mastery in the German classroom (Permana & Permatawati, 2020) and also improved most English students' grammar understanding (Rahayu & Purnawarman, 2019). In this era of the covid-19 pandemic, where learning must be delivered online, the use of Quizizz as a learning tool is a necessity, both in synchronous and asynchronous learning.

The Quizizz was also already applied in German classrooms for students in the 1st and 2nd semesters of the 2020/2021 academic year at Universitas Pendidikan Indonesia. Quizizz was considered one of the formative evaluation instruments, namely to measure how students master the material in each learning unit. This study about student perceptions toward the use of Quizizz is one of the efforts to evaluate the use of Quizizz in learning that has been carried out so far and to gain insight into how students experience and perceive the application of Quizizz in the classroom. Understanding perceptions is important in improving the quality of learning delivery and getting along well with the learning tools used (Ou, 2017). Therefore, it is essential to determine students' perceptions, to encourage the use of gamification dynamics in the instructional process (Çakiroğlu et al., 2016). From this study, it is hoped that feedback from students regarding the advantages and disadvantages of Quizizz can be collected which can be taken into consideration in improving the quality of learning in the future.

Quizizz is a game-based online test tool that enables entertaining classroom activities and is conducted jointly. With this application, students can work on the given questions interactively through their gadgets. Students could get a better experience in learning and can compete with their classmates. With Quizizz,

students complete the work at their own pace and therefore remain highly engaged throughout the quiz (Brunat, 2018). Students' interest and participation in learning can be stimulated by Quizizz (Zhao, 2019) and Quizizz is very well suited to be used as a formative test tool, as after completing Quizizz, the test report can be downloaded and the student performance can be rated.

Quizizz is available online at <https://quizizz.com>. It is an excellent online test tool that students can use to check their knowledge and learning progress (Bury, 2017). Quizizz is a suitable tool to get information about what the general class condition is like in the understanding of the students about the learning materials. Quizizz does not require a fee and works in different browsers, including Android and IOS platforms. Because of its user-friendly interface, Quizizz can help teachers assess their language learning skills as well as their curricular knowledge (Bury, 2017). Quizizz supplies hundreds of quizzes that we can use or create ourselves. Quizizz is a game-based learning tool that can contribute to the degree of concentration, participation, joy, motivation, and satisfaction of students in learning (Chaiyo & Nokham, 2017). Rösler et al. (2002) suggested several requirements related to the criteria for online learning materials, which included aspects of interactivity and flexibility. Quizizz meets these criteria.

To take a test or a quiz with the Quizizz application, we as teachers have to log in with our account. After logging in, we can search and select which usable quizzes are available. We can also create our quizzes according to our needs. It is very easy to use. Then we can even set questions that we have prepared from the Excel file. In every question asked we can include a picture if we want. We can also arrange the questions randomly or not. We can also determine whether our quiz is displayed publicly or privately. Teachers can also display a student progress dashboard on the projector to see the progress of each student and instantly see how many questions the class answered right or wrong (Miller, 2020).

When the quiz is set for the students, we need to give the students a code number to access them. Students do not have to log in to take the quiz. The ongoing quiz can be in live-game form, which is carried out at the same time in the classroom, or it can be agreed as a homework assignment. Quizizz enables us to create student-paced formative assessments that are tailored to the speed of the student. Student-paced also means no one gets upset because their device didn't load the game fast enough to compete (Miller, 2020).

Quizizz is a valuable tool for educators who are looking to add a gamified element to their lessons. It is a platform that allows teachers to create quizzes, surveys, and other assessments, and then share them with their students. The platform is user-friendly and easy to use, and it allows teachers to customize the quizzes to align with their specific curriculum and learning goals. One potential novelty of researching on students' perception toward gamification in learning is that it can provide a comprehensive and in-depth understanding of how gamification impacts student engagement, motivation, and learning. By collecting data from students about their experiences and perceptions of gamification, researchers can gain valuable insights into the effectiveness of gamification as a teaching and learning tool.

Additionally, conducting research on students' perceptions of gamification in learning can provide empirical data on the efficacy of gamification in education and help identify areas for improvement in gamified activities. By gathering data from students about their experiences and perceptions, researchers can identify common challenges and barriers to the use of gamification in education and make suggestions for addressing these challenges and enhancing the effectiveness of gamified learning materials.

Overall, researching students' perceptions of gamification in learning can provide a novel and in-depth understanding of how gamification impacts student engagement, motivation, and learning, and can support the development of effective gamified learning materials and strategies. Based on the rationale above, this study attempts to investigate the perception of first-year Indonesian students who are studying German as a foreign language toward the use of Quizizz in the Classroom. This study aims at describing how Quizizz shapes students' perceptions in terms of enjoyment, motivation, engagement, and satisfaction. Thus, the following research questions are formulated: (1) how do the students perceive the use of Quizizz in learning? (2) How are the students' enjoyment, engagement, motivation, and satisfaction after using Quizizz in learning?

RESEARCH METHOD

This study was conducted at the Study Program of German Language Education FPBS Universitas Pendidikan Indonesia (UPI) and used a quantitative descriptive approach with a survey technique. Because the focus of this study was to collect data regarding student perceptions, the survey technique was deemed the most suitable for this research, as it allows for the gathering of information on a wide range of topics, including people's attitudes, beliefs, and experiences from a large number of participants by asking them a set of questions in a relatively short amount of time (Kelley et al., 2003; Cohen et al., 2007; Draugalis et al., 2008).

The sample for this study was selected based on the criterion that participants have prior experience with Quizizz. This is known as purposive sampling, where the sample is chosen based on specific characteristics (Cohen et al., 2007). The participants in this study were students who had used Quizizz in their learning and were asked to provide detailed information about their experiences with the tool. The study involved two classes of first-year students learning German, class A and class B, with 41 and 40 students, respectively. Both classes were given the same formative tests using Quizizz at the end of each learning unit. This formative test treatment was designed to give students an opportunity first to understand and experience using the Quizizz for learning before providing their responses. At the end of the semester, the students were asked to anonymously share their perceptions of using Quizizz through a questionnaire. This allowed us to gather information about the students' experiences and opinions on using Quizizz for learning. Out of the 81 students, 62 provided feedback through questionnaires.

Adapting to Hsu & Chen (2018) and Sailer & Homner (2020), studying students' perceptions of gamification in learning can be linked to self-determination and flow theories. Self-determination theory, proposed by Deci & Ryan (1985), suggests that incorporating game-like elements into learning can motivate and

engage learners, and can help them develop a growth mindset. Flow theory, proposed by Csikszentmihalyi (1990), suggests that students who are in a state of flow while engaging with gamified activities and content will experience high levels of enjoyment and engagement, and will be more likely to learn and achieve. Therefore, to gather data on students' perceptions, a questionnaire was developed with items focusing on enjoyment, motivation, engagement, and satisfaction. This 39 items questionnaire was based on the work of Chaiyo & Nokham (2017), Yildirim (2017), and Zhao (2019) and adjusted to fit the scope of the study. The questionnaire was used to access student perceptions and focus on the identified aspects.

In this context, enjoyment is derived from the pleasure and fulfillment that comes from participating in activities. This enjoyment is the positive emotion that learners feel as they achieve goals, master new skills, and work with others in gamified learning. Motivation is the driving force behind learning and can be spurred on by a desire to learn, achieve a goal, earn rewards or recognition, or compete with others. Engagement describes how involved, interested, and focused learners are during the learning process. Satisfaction evaluates how happy or content learners are with their experience using gamification in their studies.

Likert scale with four categories of rating scale was used to measure students' opinions and attitudes, namely strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD). As described by Allen & Seaman (2007), for the purposes of analysis, the responses can be collapsed into condensed categories. Therefore, scales are truncated to an even number of categories to eliminate the "neutral" option. Using this Likert scale with an even number of scale points was used so that there is no escape category that students use when they cannot or do not want to make a decision. Even-numbered Likert scales force the respondent to commit to a certain position (Brown, 2000). Thus, the students are forced to decide on a tendency and to position themselves either for or against a statement.

To analyze the results of the data collected from the questionnaire, each item on the scale was scored, namely 4 points for SA, 3 points for A, 2 points for D, and 1 point for SD. After multiplied by the number of 62 respondents, the maximum score for each item is 248 points, and the minimum score is 62 points. To facilitate the interpretation of the data, the scores were converted to a scale of 100 and interpreted using criteria modified from Ary et al. (2014). This approach allowed for a standardized and easily understandable format for the data, ensuring comparability with previous research. The converted scores were divided into four categories: 0-25 (strongly negative), 26-50 (negative), 51-75 (positive), and 76 – 100 (strongly positive). This criteria was used to provide a clear and practical interpretation of the data, simplifying the communication of the study's outcomes. Although alternative criteria could be considered, adopting this approach was preferred due to its practicality, comparability with existing research, and alignment with established methodologies in the field.

The results of the instrument reliability test using Cronbach's alpha method show Cronbach's alpha reliability coefficient of 0.87. These coefficients indicate that the questions posed in the questionnaire have good internal consistency based on

the interpretation rules of Cronbach's Alpha (George & Mallery, 2003). The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale (Gliem & Gliem, 2003).

RESULT AND DISCUSSION

Before distributing the questionnaire to students, Quizizz was used as a formative test tool for learning German during the second semester of the 2020/2021 academic year. There are 12s set of Quizizz-based quizzes in total applied in the learning. This quiz was held once a week during the semester and consisted of 20 to 30 multiple-choice questions with four options and served as a formative evaluation at the end of each chapter. The main focus of the quiz is to measure the structure and vocabulary mastery of the students with the topics referred to as the themes of each chapter in the textbook *Netzwerk – Deutsch als Fremdsprache A2*.

The results of the questionnaire data processing showed that students generally gave a positive response to the use of Quizizz in learning. Table 1 shows the mean score obtained from each questionnaire item which is divided according to each aspect.

Table 1. Mean Score of Aspects of Students' Perception toward the Use of Quizizz

No	Aspects	Items	Mean	Interpretation
1	Enjoyment	10	2,8	strongly positive
2	Motivation	10	2,9	strongly positive
3	Engagement	10	2,8	strongly positive
4	Satisfaction	9	2,7	Positive

Based on table 1 above, it can be seen that all aspects asked in the questionnaire were responded to positively by the students. Aspects of enjoyment, motivation, and engagement received a strongly positive response, while aspects of satisfaction received a positive response. In other words, it can be generalized that students have a very good perception of the use of Quizizz in the classroom. The data above shows that Quizizz in German classrooms can provide a pleasant classroom atmosphere, can foster motivation, increase engagement and provide satisfaction to students during the learning process. These results reflect the recent study which also found that students perceived gamified e-quizzes in a formative assessment context as fun, motivating, and engaging emotionally, cognitively, agentic, and behaviorally compared to conventional paper-based quizzes (Zainuddin et al., 2020).

Asked items in the questionnaire related to the aspect of enjoyment are listed in table 2 along with the percentage of the students' responses. Almost all the items were responded positively by the students. All students agreed that Quizizz is easy to use. In general, students also indicated that they were happy with the use of Quizizz in learning. The majority of students agreed that Quizizz made the classroom atmosphere fun, interesting, and not boring. These results are in accord with previous studies indicating that Quizizz is easy and convenient to use for everyone, including learners and teachers themselves (Lim & Yunus, 2021), and makes students experiencing feelings of fun, enjoyment, interest, enthusiasm, and

curiosity (Zainuddin et al., 2020). Furthermore, Lim & Yunus (2021) also stated that teachers from various countries agreed that Quizizz is effective in many ways, especially in helping learners to learn in a fun, interactive, and meaningful environment.

Table 2. Statements in Aspect of Enjoyment

No	Items	Students' Responses			
		SA	A	D	SD
1	Quizizz is easy to use	56%	44%	0%	0%
2	I enjoy using Quizizz in learning	19%	71%	10%	0%
3	I don't like Quizizz in learning.	0%	16%	65%	19%
4	Quizizz makes learning fun.	29%	50%	19%	2%
5	Quizizz makes learning interesting.	27%	69%	3%	0%
6	Quizizz makes learning boring	0%	8%	61%	31%
7	I'm excited to be competing with others with Quizizz.	27%	56%	16%	0%
8	I'm happy if my ranking on Quizizz is better than others.	47%	47%	6%	0%
9	I'm happy if I get good results in Quizizz.	63%	37%	0%	0%
10	I'm disappointed if I get bad results in Quizizz.	45%	48%	6%	0%

What can also be seen from table 2 is that most of the students are also excited to be able to compete with their classmates and at the same time feel happy if they get good results in Quizizz and outperform other students. This excitement about competing with friends indicates that Quizizz is able to make students well motivated in learning. This finding is in accordance with the previous study, which showed that Quizizz encourages students to be competitive with their classmates (Suo et al., 2018), and also confirms that the implementation of game theory and competition-based learning can achieve stronger motivation for the students and increase their learning performance (Burguillo, 2010).

The percentage of student responses related to motivation is presented in table 3 below. Based on table 3, it can be seen that most of the students expressed their agreement that Quizizz could motivate them to learn and increase their interest in learning. They also showed the perception that they had the desire to get good results in using Quizizz and be better than the others, as well as feeling proud if they managed to get it. Comparison of the findings with those of other studies confirms that game-based scoring systems, such as Quizizz, helped in enhancing students' confidence, promoting students' motivation and increasing their learning performance (Sharples, 2000; Huizenga et al., 2009; Burguillo, 2010; Wang & Lieberoth, 2016; Razali et al., 2020; Zainuddin et al., 2020; Zuhriyah & Pratolo, 2020). In addition, Razali et al. (2020) also stated that students will prefer to participate in competitive social activities and are more likely to be motivated in showing off their achievements.

As also shown in [table 3](#), the majority of students like the Leaderboard feature in Quizizz. Students also indicated that this feature provides motivation to learn. This is related to the feedback aspect, which is indeed one of the important elements of the gamification system in learning ([Kiili, 2005](#); [Leaning, 2015](#); [Whitton, 2011](#)). A leaderboard could for instance be used to provide feedback on their achievements and their status relative to the whole class ([Huang & Hew, 2018](#)). This Leaderboard provides instant or summative feedback to students so that they know their own progress and achievements and the progress and achievements of their classmates.

Table 3. Statements in Aspect of Motivation

No	Items	Students' Responses			
		SA	A	D	SD
1	Quizizz motivates me to learn more.	37%	56%	6%	0%
2	Quizizz fosters my interest in learning.	16%	74%	10%	0%
3	I always wanted to get better results in using Quizizz.	58%	40%	2%	0%
4	I always try to get better Quizizz results than others.	60%	40%	0%	0%
5	I am proud if my Quizizz result is better than others.	56%	35%	8%	0%
6	I'm disappointed if my Quizizz score is lower than other friends	42%	53%	5%	0%
7	I like the Leaderboard feature in using Quizizz	32%	48%	18%	2%
8	The Quizizz Leaderboard feature motivates me to learn.	42%	53%	5%	0%
9	The Quizizz Leaderboard feature demotivated me to learn.	3%	32%	45%	19%
10	Quizizz reduces my test anxiety.	10%	35%	47%	8%

What is interesting in this [table 3](#) is the students' responses to the statement about test anxiety. They are divided into two groups which were relatively equal in number. One group agrees that Quizizz can reduce test anxiety (45%), while the other group disagrees (55%). This shows that in this study, Quizizz has not been proven to reduce test anxiety. This finding is contrary to a previous study which has suggested that gamification can produce positive psychological useful to encourage students' confidence and minimize their anxiety ([Pitoyo et al., 2019](#)), and triggers students' encouragement to conduct the exam ([Handoko et al., 2021](#)).

Pertaining to the aspect of Engagement, the following [table 4](#) lists each students' response to each item asked. [Table 4](#) shows that in general the majority of students agree that Quizizz makes them more engaged in learning, increases their passion for learning, and helps them focus on their subjects. This is supported by the statement that students can find out their abilities and weaknesses related to the material being taught. They also stated that they took the questions on Quizizz

seriously, not just casually answering. This finding confirms that gamified learning in diverse classroom contexts had positive effects on learner engagement (Çakiroğlu et al., 2016; Huang & Hew, 2018; Huizenga et al., 2009; Tsay et al., 2018). Huang & Hew (2018) also added that students enjoyed gamification, not because of the single badges or points, but because the overall gamification design can help them learn.

Table 4. Statements in Aspect of Engagement

No	Items	Students' Responses			
		SA	A	D	SD
1	Quizizz makes me more engaged in learning.	37%	45%	18%	0%
2	Quizizz increases my passion for learning.	26%	55%	19%	0%
3	Quizizz helps me to focus on subjects.	23%	69%	8%	0%
4	Quizizz helps me to know my own competence.	35%	63%	2%	0%
5	Quizizz helps me figure out my own weaknesses.	32%	61%	6%	0%
6	I take Quizizz seriously.	42%	58%	0%	0%
7	I just do Quizizz casually.	0%	15%	66%	19%
8	I hope Quizizz is used more often in learning in the future.	31%	69%	0%	0%
9	I prefer to do Quizizz in live mode than as homework.	5%	18%	65%	13%
10	I prefer to do Quizizz as homework rather than in live mode.	35%	60%	5%	0%

Whitton (2011) listed five factors that determine learning engagement, namely (1) challenge – the motivation to undertake the activity, clarity as to what it involves, and a perception that the task is achievable; (2) control – the fairness of the activity, the level of choice over types of action available in the environment, and the speed and transparency of feedback; (3) immersion – the extent to which the individual is absorbed in the activity; (4) interest – the intrinsic interest of the individual in the activity or its subject matter, and (5) purpose – the perceived value of the activity for learning, whether it is seen as being worthwhile in the context of study. These five factors may be found in Quizizz.

Table 4 above also shows the data that all students expect more frequent use of Quizizz in the future. This could mean that for students Quizizz is challenging, deliver clear control, is able to absorb them in the activities, fosters interest, and provides worthwhile goals. This indicates how high the engagement of students in learning with Quizizz is. However, even though Quizizz can increase student engagement in learning, the students in this study showed that they prefer Quizizz as homework rather than live mode in the classroom.

Table 5 below provides the percentage of students' responses related to the aspect of Satisfaction. Based on the data presented in this table, all students

agree that Quizizz is useful in learning. They also indicate that Quizizz is helpful in reviewing material, understanding lessons, and improving learning performance and productivity. These results are in agreement with [Çakiroğlu et al. \(2016\)](#) findings which suggested that the use of gamification dynamics may substantially influence student engagement and implementations that have a positive impact on engagement may positively contribute to academic performance, as well. In addition, [Amri & Shobri \(2020\)](#) also found that students are satisfied with the use of Quizizz during lectures and find Quizizz a fun application.

Table 5. Statements in Aspect of Satisfaction

No	Items	Students' Responses			
		SA	A	D	SD
1	Quizizz is useful in learning.	40%	60%	0%	0%
2	Quizizz helps me understand the material better.	13%	73%	15%	0%
3	Quizizz helps me review learning materials.	42%	48%	10%	0%
4	Quizizz helps me improve my learning performance	19%	73%	8%	0%
5	Quizizz helps me increase my learning productivity.	10%	68%	23%	0%
6	Quizizz helps me to achieve satisfactory learning outcomes.	27%	42%	19%	11%
7	Quizizz helps me get better grades.	11%	77%	11%	0%
8	Quizizz helps improve learning effectiveness.	21%	56%	15%	8%
9	Quizizz is more useful than paper-based tests.	10%	40%	42%	8%

From the data in [table 5](#), it can also be seen that most of the students agree that Quizizz helps them to achieve satisfactory learning outcomes and get better grades. They also indicated that Quizizz is helpful in improving learning effectiveness. These findings seem to be consistent with other research which found that Quizizz is effective because students achieve self-satisfaction while using the platform ([Yunus & Hua, 2021](#)), and that gamification satisfied the basic requirements of learning environments and was able to provide engaging learning experiences for students ([Kiili, 2005](#)). One thing that is interesting from the data in [table 5](#) is related to student responses to the comparison between Quizizz and regular paper-based tests. From this data, it appears that 50% of students agreed that Quizizz is more useful than a paper test, while the other 50% disagreed. In this case, the students seemed to be not able yet to determine which is more useful between Quizizz and paper-based tests.

Based on the results from a questionnaire given to students, it can be concluded that Quizizz was used as a formative test tool for learning German. The quiz was held once a week and consisted of multiple-choice questions with four options. The results showed that students generally had a positive perception of the

use of Quizizz, with aspects of enjoyment, motivation, and engagement receiving a strongly positive response, and satisfaction receiving a positive response. The majority of students agreed that Quizizz was easy to use and made the learning process more fun and interesting. Additionally, most students were excited to compete with their classmates and felt happy when they performed well on Quizizz.

The findings of the current study align with previous research on gamification in education, which has shown the effectiveness of using tools like Quizizz to create a fun and engaging learning environment ([Chaiyo & Nokham, 2017](#); [Fotaris et al., 2016](#); [Yildirim, 2017](#); [Licorish et al., 2018](#); [Tsay et al., 2018](#); [Göksün & Gürsoy, 2019](#); [Zhao, 2019](#); [Zuhriyah & Pratolo, 2020](#)). These studies have found that gamification can improve students' attitudes toward the subject being taught, enhance their motivation and engagement, and lead to better learning outcomes. Additionally, [Zhao \(2019\)](#) found that students prefer using gamification tools like Quizizz over traditional methods, and that they can help students concentrate and reduce test anxiety. Overall, these previous studies support the idea that students have a positive perception of Quizizz as a gamified formative assessment tool in the classroom.

Several studies have also found that gamification can improve achievement when used for assessment purposes ([Fotaris et al., 2016](#); [Bury, 2017](#); [Bicen & Kocakoyun, 2018](#); [Göksün & Gürsoy, 2019](#); [Zainuddin et al., 2020](#)). [Bury \(2017\)](#) specifically examined the use of online assessment tools, such as Kahoot and Quizizz, and found that they increase student motivation, participation, and learning. In addition, these tools were found to improve students' grammar knowledge and to be popular among students who desire to receive immediate feedback on their performance.

However, some studies, such as those by [Leaning \(2015\)](#), [Sailer & Homner \(2020\)](#), and [Sanchez et al. \(2019\)](#), have found mixed results with regard to the impact of gamification on student achievement and motivation. For example, [Leaning \(2015\)](#) found that the use of gamification in the teaching of media theory increased students motivation and changed their psychological approach to studying, but did not enhance their performance. [Sailer & Homner \(2020\)](#) claimed that gamification of learning is effective in improving cognitive, motivational, and behavioral learning outcomes. Nevertheless, the effects on motivational and behavioral outcomes are less stable and the causes of the observed heterogeneity in the results are not yet clear. These studies suggest that the design and implementation of gamification in the classroom may need to be carefully considered to fully realize its benefits.

Furthermore, [Sanchez et al. \(2019\)](#) also found that gamification can have a positive effect on student learning in an online setting, but only for the initial test and not for subsequent tests. Student abilities also appear to impact the effects of gamification, suggesting that the effects of gamification may be short-lived and may only benefit higher performing students. Future research should focus on developing a comprehensive theoretical framework for gamification and conducting more high-quality studies to better understand the relationship between gamification and learning, as well as potential moderating factors.

In summary, the rise of gamification in education has led to the availability of various digital educational games, including Quizizz. Gamification is defined as the use of game attributes outside the context of a game to affect learning-related behaviors or attitudes. Gamification in education can have cognitive, emotional, and social impacts and is considered an innovative way to support the diverse needs of students with learning or behavioral challenges (Zainuddin et al., 2020). This study has shown that Quizizz is effective in improving students' vocabulary and grammar mastery and can provide valuable insights into students' grammar understanding. In the current context of virtual instruction, the use of Quizizz as a learning tool is necessary to support the diverse needs of students with learning or behavioral challenges.

The use of Quizizz as a formative assessment tool in a German language class has been shown to be effective in improving student attitudes, motivation, and engagement. Previous research supports the use of gamification in education and indicates that it can improve student achievement. However, it is important for educators to carefully consider the design and functionality of gamification tools and to evaluate their effectiveness, as suggested by studies by Yildirim (2017), Göksün and Gürsoy (2019), Chaiyo and Nokham (2017), and Zhao (2019) in order to maximize the benefits of gamification in the classroom. Overall, Quizizz appears to be a valuable tool for creating a fun and engaging learning environment in the classroom.

CONCLUSION

In conclusion, this study has provided valuable insights into students' perceptions and experiences with Quizizz as a gamified formative assessment tool in the German language learning context. By addressing the research questions, the impact of Quizizz on students' enjoyment, engagement, motivation, and satisfaction during the learning process has been explored. The findings of this research reveal an overall positive perception of Quizizz among first-year German students in the German Language Education Study Program at FPBS UPI, as evidenced by their strong levels of enjoyment, motivation, and engagement. They have a generally favorable view of the use of Quizizz as a formative test tool for measuring grammatical skills and vocabulary mastery. Notably, the interactive and competitive features of the tool, exemplified by the Leaderboard, played a significant role in fostering motivation and concentration in the learning environment.

One potential implication of the positive response to the use of Quizizz in learning German is that it could be used more widely as a formative assessment tool in language learning. Additionally, the findings suggest that gamification can be an effective way to engage students and motivate them to learn. The gamified nature of Quizizz appears to be particularly appealing to students and contributes to fostering a positive classroom atmosphere, which is essential for sustaining interest and active participation. Furthermore, the positive perception of competition among students indicates that incorporating elements of competition into the learning process could be an effective way to foster motivation and engagement.

However, it is crucial to acknowledge the diversity of responses among students, as some expressed varying preferences for gamified learning experiences. Consequently, educators should be attentive to individual learning styles and preferences when implementing gamification tools in the classroom. This study was limited by the absence of open-ended questions given to students. So, there are limitations in analyzing thoroughly in developing a better understanding and insights about students' perceptions and investigating the reasons behind their perceptions. Secondly, it is unfortunate that the study only includes first-year students. Thus, the results of this study may not be generalizable to all German students at UPI. In future studies, it may be possible to use mixed data collection methods to gain a deeper understanding of the research questions, both quantitatively and qualitatively. Further studies on the current topic with a more representative sample profile and size are therefore recommended.

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