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Students' Perceptions of Wayground Use and Their Learning Performance in Bahasa Indonesia Course: A Correlational Study

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Abstract:
This study investigates the relationship between students' perceptions of using Wayground, a gamified digital quiz platform, and their learning performance in a Bahasa Indonesia course. Wayground is designed to provide an interactive and engaging assessment experience in digital learning environments. Understanding how students perceive this platform and whether such perceptions influence their academic outcomes is essential for evaluating its effectiveness in higher education settings. This research employed a quantitative correlational design involving 84 students from Universitas Bina Sarana Informatika across three campuses: BSD, Tasikmalaya, and Tegal. Data were collected using a Technology Acceptance Model (TAM)-based questionnaire consisting of five constructs: perceived usefulness, perceived ease of use, engagement, clarity, and attitude. Students' Wayground quiz scores were also collected. The data were analyzed using descriptive statistics, normality tests, and Pearson–Spearman correlation analyses. The findings show that students had highly positive perceptions of Wayground, with mean scores ranging from 3.67 to 3.90. They viewed the platform as interactive, user-friendly, and effective for digital evaluation. However, correlation analyses revealed no significant relationship between students' perceptions and their quiz performance ($p > 0.05$). These results indicate that although students appreciated the platform, positive perceptions did not translate into higher learning outcomes. The study concludes that Wayground successfully enhances engagement and digital interactivity in learning environments. Nevertheless, positive perceptions alone are insufficient to guarantee improved academic performance. Achieving optimal learning outcomes may require additional factors such as learner motivation, adequate preparation, and effective instructional design.

Keywords: *gamification; learning performance; student perception; Technology Acceptance Model; Wayground*

Introduction

The rapid advancement of digital technology has reshaped higher education by extending learning beyond physical classrooms into technology-mediated environments. Digital platforms now play a central role in facilitating flexible instruction, interactive learning, and efficient assessment practices. In particular, digital evaluation tools enable faster feedback, data-driven monitoring, and scalable assessment processes. Within the Technology Acceptance Model (TAM), the adoption of such technologies in educational contexts is

primarily influenced by perceived usefulness and perceived ease of use, which shape users' acceptance and continued engagement (Venkatesh, 2015).

In Indonesian higher education, Bahasa Indonesia is a compulsory general course aimed at developing students' language competence, academic writing skills, critical thinking, and communication abilities. Despite its importance, the course is frequently perceived as theoretical and less engaging, resulting in low participation and limited learning motivation (Barahona et al., 2025). To address this challenge, gamified digital platforms have been increasingly adopted to enhance student engagement by integrating assessment with interactive elements such as competition and immediate feedback (Yunus & Hua, 2021; Zulkhaeriyah et al., 2024).

The effectiveness of technology-based assessment, however, extends beyond technical functionality or test scores. From a TAM perspective, students' perceptions, particularly perceived usefulness and ease of use, play a critical role in shaping their acceptance, satisfaction, and learning outcomes (Baby & Kannammal, 2020; Tarhini et al., 2017). Positive perceptions can foster motivation and engagement, whereas negative experiences or usability barriers may hinder performance and reduce learning satisfaction (Alghameeti et al., 2025; Ibrahim & Elhabashy, 2025). Consequently, examining students' perceptions alongside actual performance outcomes is essential for evaluating the pedagogical value of digital assessment tools.

Wayground (formerly Quizizz) has recently been positioned as a more structured and academically oriented gamified assessment platform. Despite its growing use, empirical evidence on its effectiveness and students' perceptions remains limited, particularly within Indonesian higher education and multi-campus learning contexts. Existing studies largely examine gamified platforms in general, often focusing on engagement or motivation alone, with limited attention to Wayground specifically and few investigations linking students' perceptions to measurable learning performance (Páez-Quinde et al., 2023; Zainuddin et al., 2020).

Addressing this gap, the present study examines students' perceptions of Wayground and their relationship with learning performance in Bahasa Indonesia courses across three campuses with differing student characteristics. Specifically, the study investigates: (1) students' perceptions of Wayground usage, (2) students' learning performance based on quiz results, and (3) the relationship between perception and performance. By integrating perceptual and performance data, this study provides empirical evidence on the pedagogical value of Wayground in higher education and offers practical implications for lecturers and institutions seeking to optimize digital assessment practices.

Literature Review

The advancement of digital technologies has substantially reshaped educational assessment practices, particularly through the adoption of gamification-based platforms such as Quizizz. These platforms incorporate game mechanics, time constraints, and instant feedback to increase interactivity and engagement in classroom assessment. Empirical studies have consistently reported positive outcomes, with evidence suggesting that gamified platforms enhance student engagement and academic performance in higher education contexts (Rahmah et al., 2019; Zulkhaeriyah et al., 2024). Features such as leaderboards, scoring systems, and competitive timing are frequently cited as key drivers of motivation and sustained attention.

Despite these positive findings, existing studies tend to prioritize engagement and motivation as primary outcomes, often treating improved learning performance as an assumed consequence rather than a directly examined variable. In many cases, performance is measured indirectly or reported descriptively, without

robust analysis of how students' subjective perceptions of the platform relate to measurable academic outcomes. Consequently, the causal or correlational link between perception and performance in gamified assessment remains insufficiently established.

Furthermore, much of the gamification literature adopts a platform-agnostic approach, generalizing findings across diverse tools without distinguishing between specific system designs or assessment functionalities. While gamification has been broadly associated with increased motivation and achievement (Zainuddin et al., 2020), this generalization overlooks contextual variations related to course objectives, learner characteristics, and assessment purposes. Studies by previous researchers (Páez-Quinde et al., 2023; Raju et al., 2021) for instance, emphasize the motivational and collaborative benefits of gamified learning but offer limited discussion of potential drawbacks, such as cognitive overload, performance anxiety, or unequal participation among students with varying digital competencies. This lack of critical balance suggests that gamification may not function uniformly across learning contexts.

Students' perceptions are increasingly recognized as a central factor influencing the effectiveness of digital learning tools. Research indicates that positive perceptions, such as perceived usefulness, ease of use, and emotional comfort, are associated with higher participation and improved academic performance (Barahona et al., 2025). However, the majority of perception-focused studies examine general attitudes toward active or technology-enhanced learning, rather than perceptions of gamified assessment platforms specifically, and rarely investigate how these perceptions translate into concrete performance outcomes.

In language learning contexts, gamification has shown promising potential. Previous studies report that Quizizz enhances confidence, motivation, and self-assessment in ESL classrooms through immediate feedback and interactive design (Jiemsak & Jiemsak, 2020; Yunus & Hua, 2021). Nevertheless, these studies are predominantly situated in English language education and are often conducted in single-institution or controlled settings. As a result, their findings may not be directly transferable to Bahasa Indonesia courses, which serve different curricular purposes and learner profiles, particularly within multi-campus higher education environments.

More recently, Wayground, an upgraded version of Quizizz with AI-supported features, has been promoted as a more structured and academically oriented assessment platform. Despite its growing adoption, empirical research on it remains scarce. Existing studies continue to rely heavily on earlier Quizizz-based models or general gamification frameworks, leaving a critical gap in understanding how it specifically influences students' perceptions and learning performance in authentic classroom settings.

Addressing these limitations, the present study advances the literature in three key ways. First, it moves beyond descriptive accounts of engagement by empirically examining the relationship between students' perceptions of Wayground and their measurable learning performance. Second, it introduces contextual novelty by focusing on a compulsory Bahasa Indonesia general course across multiple campuses, where student characteristics and learning environments vary. Third, grounded in constructivist learning theory, this study critically evaluates whether positive perceptions of gamified assessment translate into meaningful academic outcomes, thereby providing a more nuanced understanding of the pedagogical value of Wayground in higher education.

Method

This research employs quantitative analysis with correlational research design. This design is selected to know the relation between the students' perception on the use Wayground and learning performance in Bahasa Indonesia course. Correlational research is selected to see how far the transformation on a certain

variable relates to the changes on other variables without manipulating the condition (Alghameeti et al., 2025; Ibrahim & Elhabashy, 2025). In this context, the researchers do not give specific treatments but analyze the students' perceptions data gathered through questionnaires and the result of the quiz from Wayground. The use of correlational approach is commonly applied in educational psychology and technology-related perception studies to understand how motivational and attitudinal factors relate to academic achievement (Baert et al., 2020).

Research Participants

This research is conducted at Universitas Bina Sarana Informatika, specifically at three different locations and those are one class in Tegal, two classes in BSD (Tangerang), and one class in Tasikmalaya. On the other hand, the respondents are UBSI students who currently enroll in Bahasa Indonesia course during the odd semester 2025/2026 academic year and have used Wayground as a learning evaluation tool in the course. In total, there are 203 students registered in Bahasa Indonesia from four classes majoring in information system, informatics, and information technology with 10 students from Tegal campus, 67 students from Tasikmalaya campus, and 126 students from BSD campus. Unfortunately, there are only 84 respondents who filled the questionnaires with distributions: 17 respondents from BSD campus, 39 respondents from Tasikmalaya campus, 9 respondents from Tegal campus, 2 respondents mentioned three campuses, and 17 respondents did not mention their campuses. The used data sampling technique is total sampling of participants who filled out the questionnaire voluntarily. Therefore, all respondents who completed the questionnaire are regarded as valid research sampling (Faramarzpour et al., 2025).

Research Procedure

There are three stages in data gathering in this research and those are preparation (1), data gathering (2), and display and analyzing (3). At first, a questionnaire was formulated based on TAM theory proposed by Davis (1989) which was later developed and refined by numerous researchers to explain behavioral intention in adopting e-learning tools (Baby & Kannammal, 2020; Tarhini et al., 2017; Venkatesh, 2015). Then, the respondents voluntarily filled out the questionnaire which was shared through Google form once they finished the quiz on Wayground which was distributed before the classes began. Each student has one opportunity to do the quiz by login to the app and use their student's ID as username. Moreover, it has 20 questions with 30 seconds for each question to answer. In data display and analyzing, the incomplete data are removed, including those who answered never use Wayground. Scores in negative questions are reversed coded and total score perceptions are calculated as mean for all items (Chismar & Wiley-Patton, 2003; Malhotra & Galletta, 2002).

Data Analysis

The data were analyzed descriptive quantitative and inferential with two stages, namely descriptive analysis and inferential analysis. Descriptive analysis is done to calculate mean, percentage and deviation standard for each students' perception indicators and to determine the perception category based on following interval score: very positive (4.21-.00), positive (3.41-4.20), enough (2.61-3.40), negative (1.81-2.60) and very negative (1.00-1.80) (Barahona et al., 2025).

Furthermore, there are three tests in inferential analysis and those are normality test, correlation test and significance test. Normality test is done to know whether the questionnaire data (perception on Wayground and quiz result) is normally distributed or not. The Kolmogorov-Smirnov test is used because the number of respondents is more than 50. Then, correlation test is done to know the relation between students' perception on the use of Wayground and learning performance on Bahasa Indonesia course. Last,

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significance test is done to ensure whether the found relation is statistically significant or simply occurs by chance (Azizi et al., 2023; Smith & Brown, 2003). Correlational and significance testing are essential in quantitative educational research to validate the association between behavioral perception and measurable academic performance (Yang & Liu, 2025).

Instruments

The main instrument in this research is questionnaire about students perception on the use of Wayground, designed based on Technology Acceptance Model (TAM) by Davis (1989) which cover five dimensions and those are perceived usefulness or PU (1), perceived ease of use or PEU (2), engagement and motivation or ENG (3), clarity of instruction and interface or CLA (4), and attitude and satisfaction or ATT (5). Questionnaire has 21 closed-ended statements on 5 Likert scale with some questions are in reverse-coded to avoid the agreement tendency bias (Camilleri & Montebello, 2011; Venkatesh, 2015). Moreover, the result of the Wayground quiz is used as a learning performance indicator. This follows the previous design of perception-performance studies in educational technology where user experience and performance are statistically compared (Raju et al., 2021; Zainuddin et al., 2020; Zulkhaeriyah et al., 2024).

Results

1. Descriptive Analysis of Students' Perceptions

Descriptive statistics were calculated for the five TAM constructs, namely Perceived Usefulness (PU), Perceived Ease of Use (PEO), Engagement (ENG), Clarity (CLA), and Attitude (ATT). Table 1 below presents the mean and standard deviation values.

Table 1. Mean and Standard Deviation of TAM Constructs

Construct	Mean	Standard deviation
PU	3.81	0.70
PEO	3.90	0.81
ENG	3.88	0.91
CLA	3.67	0.83
ATT	3.68	0.68

All constructs scored above 3.60, indicating an overall positive perception of Wayground. The highest score was obtained by PEO (M = 3.90), suggesting that students found Wayground easy and convenient to use. Engagement also demonstrated a high mean value (M = 3.88), showing that Wayground's interactive features supported involvement of the students.

Perceived usefulness scored is 3.81, indicating that students felt Wayground provided learning benefits. Meanwhile, clarity scored the lowest (3.67), suggesting that certain students experienced minor difficulties related to instructions or interface. Attitude obtained a positive mean score (3.68), reflecting overall satisfaction with Wayground as a digital evaluation tool.

2. Normality Test

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The normality test was conducted using the Kolmogorov–Smirnov (KS) method to examine whether the research variables were normally distributed. Based on the p-value threshold (≥ 0.05 = normal distribution), the results are presented in Table 2 below.

Table 2. Normality Test Results

Variable	KS Statistics	p-Value	Result
PU mean	0.1764	0.0198	Abnormal
PEO mean	0.1460	0.0837	Normal
ENG_mean	0.2376	0.0005	Abnormal
CLA mean	0.1944	0.0074	Abnormal
ATT mean	0.1308	0.1559	Normal
Quiz score mean	0.1018	0.4166	Normal

The results show that Perceived Usefulness (KS = 0.1764, p = 0.0198), Engagement (KS = 0.2376, p = 0.0005), and Clarity (KS = 0.1944, p = 0.0074) have p-values below 0.05, indicating that these variables do not meet the normality assumption. Meanwhile, Perceived Ease of Use (KS = 0.1460, p = 0.0837), Attitude (KS = 0.1308, p = 0.1559), and Quiz Score (KS = 0.1018, p = 0.4166) have p-values greater than 0.05, indicating that they are normally distributed.

These results confirm a mixed distribution pattern among the research variables. Therefore, in the subsequent correlation analysis, Pearson correlation was applied to variables that met the normality assumption (PEO, ATT, and Quiz Score), while Spearman rho correlation was employed for variables that were non-normally distributed (PU, ENG, and CLA). This analytical decision ensures compliance with statistical assumptions and increases the validity and reliability of the correlation findings.

3. Correlation Analysis

Correlation analysis examined the relationship between the students' perceptions (TAM constructs) and quiz scores. Table 3 below summarizes the results.

Table 3. Correlation between Perceptions and Quiz Score

Construct	Method	Correlation (r)	p-value	Interpretation
PU	Spearman	-0.1688	0.1563	Not significant
PEO	Pearson	-0.2109	0.0754	Not significant (closer to significant)

ENG	Spearman	-0.1219	0.3077	Not significant
CLA	Spearman	-0.2026	0.0879	Not significant (closer to significant)
ATT	Pearson	-0.0728	0.5441	Not significant

As presented in Table 3, all constructs show p-values greater than 0.05, indicating that there is no statistically significant correlation between students' perceptions and quiz scores. Specifically, Perceived Usefulness ($r = –0.1688$, $p = 0.1563$), Engagement ($r = –0.1219$, $p = 0.3077$), and Attitude ($r = –0.0728$, $p = 0.5441$) demonstrate weak and non-significant relationships with quiz performance.

Interestingly, two constructs; Perceived Ease of Use ($r = –0.2109$, $p = 0.0754$) and Clarity ($r = –0.2026$, $p = 0.0879$); show p-values that are approaching the significance threshold, although they remain statistically insignificant. Both correlations are negative, indicating that higher perceived ease of use and clarity are slightly associated with lower quiz scores. While this tendency cannot be generalized due to the lack of statistical significance, it offers an important insight: positive perceptions of platform convenience and clarity do not necessarily translate into improved academic outcomes.

This finding contrasts with a number of previous studies which reported that gamified platforms and positive technology perceptions tend to enhance motivation and performance. However, the present result suggests that students' academic achievement may be influenced more strongly by other factors such as preparation level, intrinsic motivation, learning strategies, content difficulty, and assessment design rather than solely by their perception of the platform. In other words, technology acceptance does not automatically guarantee better performance outcomes.

Overall, these results emphasize that Wayground is perceived positively and functions effectively as a learning tool, yet perception alone is insufficient to determine academic success. This highlights the need for pedagogical strategies that go beyond technological engagement, ensuring that instructional design, cognitive challenge, and meaningful learning processes are adequately addressed.

Discussion

1. Students' Perceptions Toward Wayground

The descriptive findings indicate that students' perceptions of Wayground are predominantly positive across all TAM constructs, with mean values ranging from 3.67 to 3.90. The highest perception lies in Perceived Ease of Use (PEO), suggesting that students find Wayground accessible, intuitive, and easy to navigate. This aligns with previous research reporting that user-friendly interface and technological simplicity play a central role in students' acceptance of gamified learning platforms (Rahmah et al., 2019; Zulkhaeriyah et al., 2024). Engagement also scored highly, reinforcing existing evidence that gamification elements; such as competition, instant feedback, and interactivity; successfully increase student involvement (Raju et al., 2021; Zainuddin et al., 2020).

However, although perceptions were generally positive, Clarity received the lowest mean score. This suggests that despite technological appeal, a proportion of students still faced challenges related to instruction clarity, navigation guidance, or quiz interface. This finding complements studies such as Páez-Quinde et al. (2023), which noted that gamified systems may still pose usability or comprehension barriers

for certain learners despite being engaging. Thus, while Wayground is largely well-received, its instructional design and clarity components require further pedagogical refinement.

2. Normality and Statistical Assumption Considerations

The normality test revealed a mixed distribution pattern, in which PU, ENG, and CLA were non-normally distributed, while PEO, ATT, and quiz scores fulfilled the normality assumption. Methodologically, this result strengthens the rigor of the study because it justified the combined application of Pearson and Spearman correlation based on appropriate data characteristics. This analytical decision enhances measurement validity and avoids statistical bias, an aspect that is often overlooked in related studies that directly apply Pearson analysis without explicitly confirming data distribution.

3. Relationship between Perception and Learning Performance

A key finding of this study is the absence of statistically significant correlations between all TAM constructs and quiz performance. Despite students' highly positive perceptions, their acceptance of Wayground did not translate into significantly higher quiz scores. This diverges from a number of earlier studies which suggested that positive perceptions, increased engagement, and technological enjoyment tend to be associated with improved learning outcomes (Jiemsak & Jiemsak, 2020; Raju et al., 2021; Yunus & Hua, 2021).

Two constructs; PEO and CLA; showed near-significant tendencies with negative correlation coefficients. This indicates a subtle tendency that higher perceived ease of use and clarity might correspond with slightly lower quiz performance, although the relationship is not statistically conclusive. This unexpected tendency offers an important critical insight. It suggests that when platforms are perceived as very easy and comfortable, students may experience reduced cognitive challenge or become overly reliant on system convenience, potentially lowering their level of academic effort or critical engagement. This perspective aligns with arguments within educational psychology that comfort does not always equal cognitive depth.

Although most existing studies reported positive linear relationships between gamification perception and academic outcomes, this study provides empirical evidence showing that positive perception does not necessarily predict better performance, indicating that technology acceptance alone is not a sufficient determinant of academic success. This contributes a more nuanced and critical understanding that complements, rather than rejects, the optimistic narrative of gamification literature.

The novelty of this study can be highlighted in the sections, and those are (1) Separates technological perception from measurable academic achievement, demonstrating their independence in certain contexts; (2) Reveals a potential negative tendency between ease/clarity perception and performance, which has rarely been highlighted in previous studies; and (3) Situates findings in the context of a Bahasa Indonesia general education course, a context that remains underrepresented compared to STEM or pure language learning settings.

Then, these results of this research imply that while gamified platforms such as Wayground effectively foster positive learning experiences and engagement, pedagogical strategies, assessment design, and cognitive demand remain critical determinants of performance. Educators cannot rely solely on technological attractiveness; they must ensure that learning tasks remain intellectually challenging, instructionally clear, and pedagogically structured to promote deep learning rather than surface participation.

Conclusion

This study demonstrates that students generally hold positive perceptions of Wayground, particularly in terms of ease of use and engagement, indicating that the platform is accessible, intuitive, and capable of sustaining students' interest. Nevertheless, the relatively lower clarity score suggests that technological attractiveness alone does not ensure instructional transparency or navigational certainty, underscoring the need for more pedagogically grounded design and clearer task structuring within gamified assessments.

Methodologically, the presence of mixed normality across variables strengthened the analytical rigor by justifying the combined use of Pearson and Spearman correlation analyses. The findings revealed no statistically significant relationship between students' perceptions and their quiz performance, indicating that favorable attitudes toward a gamified platform do not automatically translate into measurable academic achievement. Notably, the near-significant negative tendencies between perceived ease or clarity and performance suggest that assessment environments perceived as overly simple or comfortable may reduce cognitive challenge, thereby limiting deeper learning engagement.

From a practical perspective, these findings offer several implications for instructional practice. First, lecturers should avoid assuming that high engagement or usability guarantees learning effectiveness. Gamified platforms such as Wayground should be intentionally aligned with learning objectives, incorporating well-calibrated difficulty levels, explicit instructions, and cognitively demanding tasks to ensure that engagement supports, rather than replaces, meaningful learning. Second, instructional designers are encouraged to prioritize clarity of task design and feedback mechanisms, as lower clarity perceptions may hinder students' ability to navigate assessments effectively despite positive overall attitudes toward the platform. Third, institutions considering the adoption of gamified assessment tools should complement technological implementation with professional development that equips lecturers to design pedagogically sound, outcome-oriented digital assessments.

These findings should be interpreted within the study's limitations. The research is context-specific to a Bahasa Indonesia general education course within a particular institutional setting, which may limit its generalizability to other disciplines or educational contexts. Additionally, learning performance was operationalized solely through quiz scores, which may not capture broader learning outcomes such as critical thinking, long-term retention, or productive language skills. The reliance on self-reported perception data also introduces potential bias, as expressed attitudes may not fully reflect actual learning behaviors.

Despite these constraints, this study contributes a nuanced perspective to gamified learning research by demonstrating that technology acceptance and engagement, while beneficial for the learning experience, are insufficient predictors of academic performance. Future research should adopt longitudinal designs, employ multiple indicators of learning performance, and examine mediating factors, such as learning strategies, types of motivation, and instructional alignment, to better explain when and how positive perceptions of gamified platforms translate into academic success. Ultimately, the findings reaffirm that pedagogical quality and instructional design must remain central, even within technologically engaging educational environments.

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