



Magister Pendidikan Bahasa Arab
Pascasarjana UIN Maulana Malik Ibrahim
Malang, Indonesia

KITABA

JOURNAL OF INTERDISCIPLINARY ARABIC LEARNING

Designing Gamified Assessments in Nahwu Instruction: A Theoretical Framework and Practical Guide Using Quizizz

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Article History:

Received: 2026-05-12

Revised: 2026-06-02

Accepted: 2026-07-06

Published: 2026-07-31

Keywords:

Educational Assessment Design;
Gamification; Nahwu Instruction;
Quizizz; Technology Education

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Abstract: The integration of technology into educational assessment has become essential in 21st-century learning. This study presents a comprehensive framework for designing educational assessments using Quizizz, an interactive gamification-based platform. Employing a descriptive-analytical method with a systematic literature review of 25 studies (2020-2026), this research analyzes Quizizz's effectiveness in educational contexts, particularly in Nahwu (Arabic grammar) instruction. The findings reveal that Quizizz significantly enhances student motivation, engagement, and academic performance, provides immediate feedback, and reduces test anxiety. This paper also provides detailed procedural guidance for designing online assessments through Quizizz, including platform features, advantages, limitations, and implementation strategies tailored for Nahwu instruction. The study concludes that Quizizz represents a transformative tool in educational assessment, especially for subjects requiring memorization and conceptual understanding. This research contributes to the growing body of knowledge on technology-enhanced assessment in Islamic education.

INTRODUCTION | مقدمة | PENDAHULUAN

The 21st century has witnessed rapid advancements in information and communication technology, profoundly transforming various sectors, including education. Traditional assessment methods, such as paper-and-pencil tests, are no longer sufficient to measure students' diverse skills and academic achievements, especially in the context of distance learning and the increasing demand for interactive and flexible assessment tools (Muchuweni et al., 2025).

In Islamic education, Nahwu (Arabic grammar) holds a paramount position as the foundational discipline for comprehending the Qur'an, Hadith, and classical Islamic scholarship. Nahwu encompasses the study of syntactic rules governing sentence construction, word classification, and grammatical case endings (i'rab). Mastery of Nahwu is indispensable for accurate interpretation of Islamic texts and for developing proficiency in Arabic language skills (Hidayatullah et al., 2023; Syamsuddin, 2022).

Despite its importance, Nahwu instruction faces persistent pedagogical challenges. The subject is frequently characterized as abstract, rule-intensive, and difficult to master, resulting in student disengagement, low motivation, and heightened learning anxiety (Al-Munawwaroh & Fauzi, 2024). Traditional assessment practices—predominantly written examinations and oral recitation—often fail to provide timely feedback, do not accommodate diverse learning styles, and inadequately measure students' progressive understanding of grammatical concepts (Sulaiman & Ismail, 2023).

In response to these pedagogical challenges, digital platforms have emerged to revolutionize educational assessment. Among these, Quizizz has gained prominence as a gamification-based assessment tool that integrates enjoyment, competition, and learning within a secure digital environment (Sholihah & Miranty, 2025). Quizizz enables educators to create interactive quizzes accessible through any internet-connected device, incorporating gamification elements—including points, leaderboards, avatars, and instant feedback—that create an engaging and less intimidating assessment atmosphere (Dewi, 2025).

Research has demonstrated that gamified assessment tools like Quizizz can significantly enhance student motivation, reduce test anxiety, and improve academic performance across various subjects (Maruanaya et al., 2024; Muchuweni et al., 2025). The platform's capacity to provide immediate feedback and detailed analytics further supports formative assessment practices and data-driven instruction (Syafa'ah, 2025).

Despite the growing body of research on Quizizz effectiveness in general education and language learning contexts (Sholihah et al., 2025; Winahyu & Purwati, 2025), there remains a significant gap in the literature concerning its specific application to Nahwu instruction. The unique characteristics of Nahwu—with its complex rule systems, memorization demands, and conceptual intricacies—require tailored assessment approaches that differ from those used in other subjects. Moreover, systematic procedural guidance for designing Quizizz-based assessments specifically for Nahwu is notably absent from existing literature.

The primary purpose of this study is to present a comprehensive theoretical and practical framework for designing educational assessments using the Quizizz platform, specifically tailored for Nahwu instruction. Specifically, this research aims to: (1) define the concept of technology-based educational in the context of Nahwu instruction; (2) provide a complete description of the Quizizz platform, including its features, advantages, and limitations; (3) offer step-by-step procedures for designing and implementing assessments using Quizizz for Nahwu learning; and (4) review and synthesize existing literature on the effectiveness of Quizizz in educational contexts, with particular emphasis on its application in Arabic grammar instruction.

To achieve these objectives, this study addresses the following research questions: (1) How can educational assessments be effectively designed using the Quizizz platform for Nahwu instruction? (2) What is the empirical evidence regarding Quizizz effectiveness in enhancing student motivation, engagement, and academic performance? (3) What are the advantages and limitations of implementing Quizizz in Nahwu assessment?

This research contributes to the growing body of knowledge on technology-enhanced assessment in Islamic education in several ways:

For Educator : Provides practical guidance for integrating Quizizz into Nahwu instruction, enabling more engaging and effective assessment practices.

For Student : Offers insights into how gamified assessment can enhance motivation, reduce anxiety, and improve learning outcomes

For Curriculum Developpers : Informs the design of technology-integrated curricula for Islamic education.

For Researchers : Identifies gaps in current literature and suggests directions for future research.

METHOD | منهج | METODE

This study employed a descriptive-analytical research method combined with a systematic literature review (SLR). This approach was chosen to: (1) describe the Quizizz platform features, procedures, and implementation strategies; (2) analyze empirical evidence from previous studies; and (3) synthesize findings to develop evidence-based recommendations for practice.

Research Design

The research design consists of three phases: (1) Description Phase: Comprehensive description of Quizizz platform features, procedural steps, and implementation strategies, (2) Analysis Phase: Critical evaluation of existing literature on Quizizz effectiveness through systematic review, (3) Synthesis Phase: Integration of findings from multiple studies to present evidence-based recommendations.

Data Sources

A systematic search was conducted across the following academic databases: Google Scholar, Scopus, ERIC (Education Resources Information Center), DOAJ (Directory of Open Access Journals), Garuda (Indonesian journal portal).

Search Keywords

The following keyword combinations were used: (1) "Quizizz" AND "education" OR "learning", (2) "Quizizz" AND "assessment" OR "evaluation" (3) "Quizizz" AND "gamification" AND "motivation", (4) "Quizizz" AND "Nahwu" OR "Arabic grammar".

Inclusion Criteria

Studies were included if they met the following criteria: (1) Peer-reviewed journal articles or conference proceedings, (2) Published between 2020 and 2026, (3) Written in English, Indonesian, or Arabic, (3) Focused on Quizizz use in educational contexts, (4) Written in English, Indonesian, or Arabic, (5) Reported empirical data on Quizizz effectiveness.

Exclusion Criteria

Studies were excluded if they: (1) Were non-peer-reviewed sources (blogs, news articles, opinion pieces), (2) Did not focus on Quizizz as the primary intervention, (3) Were theoretical papers without empirical data, (4) Were published before 2020.

Search and Selection Procedure

The systematic review followed these steps: (1) Initial database search using specified keywords, (2) Screening of titles and abstracts for relevance, (3) Full-text review of potentially eligible studies, (4) Final selection based on inclusion/exclusion criteria, (5) Data extraction and quality assessment.

Data Analysis

Data were analyzed using thematic analysis, identifying recurring themes across studies: (1) Motivation and engagement, (2) Academic performance, (3) Test anxiety reduction, (4) Practical benefits for educators, (5) Limitations and challenges.

Data Synthesis

Findings from the reviewed studies were synthesized using a narrative synthesis approach, which involved: (1) Organizing findings by theme, (2) Comparing and contrasting results across studies, (3) Identifying patterns and consistencies, (4) Developing evidence-based recommendations.

Quality Assessment

The quality of included studies was assessed using the following criteria: (1) Clarity of research objectives, (2) Appropriateness of research design, (3) Adequacy of sample size, (4) Validity and reliability of instruments, (5) Consistency of findings with existing literature.

RESULTS | نتائج | TEMUAN

The review of previous studies revealed consistent findings regarding Quizizz effectiveness across various educational contexts. The table below summarizes key findings from recent studies:

Table 1. Summary of Previous Studies on Quizizz Effectiveness

No	Authors (Year)	Sample	Research Design	Key Finding
1	Muchuweni et al. (2025)	25 studies	Systematic Review	Quizizz enhances active participation and motivation in mathematics learning.
2	Sholihah et al. (2025)	45 students	Quasi-experimental	Improved grammar performance from 7.97 to 8.51; 20% increase in mastery.
3	Winahyu & Purwati (2025)	32 students	Classroom Action Research	Mean scores increased from 73.96 to 86.91.
4	Dewi (2025)	25 students	Case Study	Quizizz facilitates formative assessment and immediate feedback.
5	Sholihah & Miranty (2025)	60 students	Mixed-methods	Quizizz increases intrinsic motivation in English learning.
6	Refania et al. (2026)	68 students	Quasi-experimental	Significant improvement in Nahwu learning outcomes ($p < 0.05$).
7	Mariati et al. (2025)	30 students	Classroom Action Research	Mastery learning increased from 43.33% to 86.67%.

Source: Compiled from the references cited in the bibliography.

Key Findings Synthesis

The synthesis of results from reviewed studies reveals several consistent patterns:

Motivation and Engagement: Quizizz significantly enhances student motivation and engagement across multiple studies. Gamification elements—including points, leaderboards, and competitive features—create an enjoyable learning environment that encourages active participation (Muchuweni et al., 2025; Sholihah & Miranty, 2025).

Academic Performance: Studies consistently report improvement in academic performance following Quizizz implementation. The platform's immediate feedback and self-paced learning features appear to contribute to better understanding and retention of content (Sholihah et al., 2025; Winahyu & Purwati, 2025).

Reduced Test Anxiety: The game-based format of Quizizz reduces the traditional stress associated with testing. Students perceive the platform as more playful and less intimidating than conventional paper-based assessments (Dewi, 2025).

Practical Benefits for Educators: Quizizz provides valuable data to inform instruction through detailed analytics and reporting features. This enables teachers to identify areas where students struggle and adjust their teaching accordingly (Maruanaya et al., 2024; Syafa'ah, 2025).

Thematic Analysis Results

To provide a more comprehensive understanding of Quizizz effectiveness, the reviewed studies were analyzed thematically. The following themes emerged from the analysis:

1. Motivation and Engagement (15 studies/60%)

The majority of reviewed studies (60%) reported significant improvements in student motivation and engagement following Quizizz implementation. Gamification elements—including points, leaderboards, avatars, and memes—were consistently cited as key factors contributing to increased participation and sustained interest in learning activities. Students perceived Quizizz as more enjoyable and less intimidating than traditional assessment methods (Muchuweni et al., 2025; Sholihah & Miranty, 2025; Hernanz et al., 2024).

2. Academic Performance (12 studies/48%)

Nearly half of the studies (48%) documented measurable improvements in academic performance. The average score increase ranged from 8.55 to 12.95 points across different subject areas. In Nahwu instruction specifically, Refania et al. (2026) reported significant improvements ($p < 0.05$), while Mariati et al. (2025) documented a 43.34% increase in mastery learning achievement. These improvements were attributed to immediate feedback, self-paced learning, and repeated exposure to content through Quizizz.

3. Eight studies (32%) highlighted Quizizz's effectiveness as a formative assessment tool. The platform's immediate feedback feature enables students to identify and correct mistakes in real-time, while teachers gain access to detailed analytics and reports that inform instructional decisions. This data-driven approach supports differentiated instruction and targeted intervention for struggling students (Dewi, 2025; Alam & Kholid, 2024; Jamhuri & Kasih, 2024).

4. Reduced Test Anxiety (6 studies/24%)

Six studies (24%) reported that Quizizz reduced test anxiety among students. The game-based, low-stakes format creates a playful assessment environment that decreases stress and increases confidence. Students perceived Quizizz as more enjoyable and less threatening compared to paper-based tests, leading to more authentic demonstration of knowledge (Dewi, 2025; Sholihah & Miranty, 2025).

5. Limitations and Challenges (5 studies/20%)

Despite its benefits, several limitations were identified in the reviewed studies. These included: internet dependency (requiring reliable connectivity), device requirements (each student needs a connected device), limited question types (primarily objective questions), and potential for academic dishonesty during unsupervised assessments. However, some studies noted that Quizizz's Paper Mode provides a partial solution to connectivity challenges (Maruanaya et al., 2024; Tarigan et al., 2024).

DISCUSSION | مناقشة | DISKUSI

Definition and Working Mechanism of Quizizz

Quizizz is an online educational platform founded in 2015 that allows educators to create interactive, game-based quizzes for their students (Maruanaya et al., 2024). Unlike traditional testing platforms, Quizizz incorporates gamification elements that make learning and assessment more engaging for students across various educational levels.

The assessment process through Quizizz operates as follows: the teacher creates a free account on the website (quizizz.com), then creates a quiz by adding questions, answers, and

images. The teacher obtains a unique PIN code for each quiz. Students access quizizz.com/join, enter the code, and answer questions at their own pace (self-paced) (Tarigan et al., 2024).

Quizizz offers several key features: teacher dashboard for centralized management; question bank access to pre-made quizzes; multi-device compatibility (smartphones, tablets, laptops); flexible delivery modes (live and homework); self-paced learning; immediate feedback with explanations; detailed analytics and reports; and Paper Mode for offline participation (Maruanaya et al., 2024; Syafa'ah, 2025).

The advantages of Quizizz include free access with sufficient features for most educational purposes; user-friendly interface accessible to both teachers and students; engaging learning experience through gamification; formative assessment capability; data-driven insights; and time efficiency through automated scoring (Dewi, 2025; Sholihah & Miranty, 2025).

However, Quizizz also has limitations: internet dependency (though Paper Mode offers a partial solution); device requirements (each student needs an internet-connected device); limited question types (primarily objective questions); and potential for cheating during unsupervised assessments (Maruanaya et al., 2024; Tarigan et al., 2024).

Designing Assessments with Quizizz

Based on the literature review and platform analysis, the following procedural framework is proposed for designing assessments using Quizizz in Nahwu instruction:

Step 1: Preparation and Planning

- Identify specific learning objectives to be assessed
- Determine appropriate question types (multiple choice, true/false, fill-in-the-blank)
- Establish the number of questions aligned with available time
- Configure test settings (response time, leaderboard visibility, answer reveal options)

Step 2: Account Creation

- Access the Quizizz website at <https://quizizz.com>
- Click "Sign up" and select the "Teacher" role
- Complete registration via email or Google account

Step 3: Creating a New Quiz

- Navigate to the dashboard and click "Create"
- Select "New Quiz" and add a title (e.g., "Nahwu Arabic Grammar Quiz")
- Add a cover image (optional)

Step 4: Adding Questions

- Click "Add Question" and select question type
- Enter question text and answer options (2-5 choices)
- Mark the correct answer with a checkmark
- Add an explanation (optional) to provide feedback
- Repeat for all questions

Example of a Nahwu Question:

Question: What is the grammatical case (I'rab) of the word "الكتاب" in the sentence "قرأت الكتاب" (I

read the book)?

Options:

- a) مرفوع (Nominative)
- b) منصوب (Accusative) ✓
- c) مجرور (Genitive)
- d) مجزوم (Jussive)

Step 5: Configuring Test Setting

Table 2. Quizizz Test Settings Configuration

No	Setting	Available Options
1	Time per Question	5 seconds - 5 minutes
2	Number of Attempts	Single or multiple
3	Display Correct Answers	Yes / No
4	Show Leaderboard	Yes / No
5	Background Music	Yes / No

Source: Quizizz Platform Interface (2026)

Step 6: Publishing and Sharing the Quiz

- Click "Play" and select delivery mode: Live (simultaneous participation in the classroom) or Homework (asynchronous assignment)
- Obtain the unique 6-digit PIN code
- Share the PIN with students (via smart board, WhatsApp, Google Classroom)
- Students access quizizz.com/join and enter the PIN

Step 7: Analyzing Results

- View results directly on the platform
- Download the report as an Excel file
- Analyze individual student performance (number of correct/incorrect answers)
- Identify challenging questions for the class
- Calculate average scores

Effectiveness of Quizizz in Nahwu Instruction: Empirical Evidence from Recent Studies

Recent studies have specifically examined the effectiveness of Quizizz in the context of Nahwu (Arabic grammar) instruction and have shown significant results. Refania, Fazera, and Julianti (2026), in their quasi-experimental study, found that there was a significant improvement in Nahwu learning outcomes among students taught using Quizizz compared to the control group using conventional methods. In addition to improving learning outcomes, the study also noted that Quizizz was able to increase student motivation, engagement, and active participation. The study concluded that Quizizz is an effective medium for enhancing both learning outcomes and student engagement in Nahwu instruction.

Further reinforcing these findings, Mariati, Zuhriyah, and Wahyuningsih (2025) conducted a classroom action research study that demonstrated a significant improvement in students' mastery of Arabic grammar (Qowa'id) through the use of Quizizz. The study reported an increase in mastery learning from 43.33% to 86.67%, representing a 43.34% improvement after the implementation of Quizizz in learning. This indicates that Quizizz is not only effective as an

assessment tool but also as a learning medium capable of improving material mastery. The study recommended that Quizizz be integrated into regular Arabic grammar instruction to enhance student outcomes.

A qualitative study by Habib, Afrilianti, and Huda (2025) on the utilization of Quizizz based on Nahwu in teaching maharah kitabah (writing skills) to postgraduate students at UIN Malang provided similar evidence. The results showed that Quizizz usage increased student participation, motivation, and understanding of Nahwu concepts. The assessment instrument for Quizizz media by students obtained scores between 4 and 5 (on a 5-point scale), indicating very good quality, with assessments covering aspects of content accuracy, material relevance, accessibility, and ability to increase interest and learning motivation. This study confirmed that Quizizz is a valuable tool for enhancing both cognitive and affective learning outcomes.

The Impact of Quizizz on Student Motivation and Learning Engagement

Beyond Nahwu-specific studies, broader research has examined the impact of Quizizz on student motivation and engagement. Hernanz et al. (2024) conducted a study involving 179 students from three different study programs and found that students in the field of education (pre-service teachers) had the most positive perceptions of learning enhancement through gamification with Quizizz. The study found that Quizizz significantly increased self-efficacy, intrinsic motivation, satisfaction, and academic performance among university students. The study emphasized that gamification elements such as avatars, leaderboards, and instant feedback create a learning environment that supports autonomy, competence, and relatedness.

This aligns with the findings of Muchuweni, Jojo, and Kariyana (2025) in their systematic review analyzing 25 studies on Quizizz in mathematics learning. The review consistently found that Quizizz encourages active participation and motivation, with gamification features such as avatars, leaderboards, and self-paced learning creating interactive environments that support learner autonomy, competence, and connectedness. The review concluded that Quizizz is particularly effective in increasing student engagement in subjects that are traditionally perceived as difficult or less engaging.

Furthermore, Sholihah and Miranty (2025) investigated the impact of gamified diagnostic assessment using Quizizz on Indonesian ESL students. The study found that Quizizz increased students' intrinsic motivation and made English language learning more enjoyable. Students reported feeling less anxious and more confident when completing assessments through Quizizz compared to traditional paper-based tests. The study recommended that educators consider gamification as a strategy to enhance motivation and reduce test anxiety.

Quizizz as a Formative Assessment Tool

From the perspective of formative assessment, Alam and Kholid (2024), in their study at SD IT Abata Lombok, described Quizizz as an effective game-based assessment tool for increasing student engagement and motivation. The study found that Quizizz's instant feedback feature enables students to immediately identify and correct their mistakes, while teachers can identify areas requiring special attention. The gamification elements, including points and leaderboards, created a competitive yet enjoyable learning environment that motivated students to improve their performance.

Research by Jamhuri and Kasih (2024) on developing Quizizz-based evaluation instruments for Arabic language learning at the Madrasah Aliyah level further confirms this. Validation by material experts and media experts indicated a very high level of product validity, while

assessments from teachers and students rated the product as highly practical and usable without revision. The study concluded that Quizizz is a valid and practical tool for formative assessment in Arabic language instruction.

Dewi (2025) also explored the implementation of Quizizz as a formative assessment tool for young English learners. The study found that Quizizz facilitated ongoing assessment and immediate feedback, enabling teachers to monitor student progress and adjust instruction accordingly. Students reported that Quizizz made assessment more enjoyable and less stressful compared to traditional methods. The study recommended that Quizizz be integrated as a regular formative assessment tool to support student learning.

Practical Recommendations for Nahwu Instruction

Based on the reviewed literature, the following recommendations are proposed for integrating Quizizz into Nahwu instruction:

1. **Align Assessment with Learning Objectives:** Ensure that quiz questions directly measure the grammatical concepts covered in instruction, including both theoretical understanding and practical application.
2. **Vary Question Difficulty:** Include questions at different cognitive levels, from basic recall (identifying grammatical terms) to higher-order thinking (analyzing sentence structures).
3. **Provide Explanatory Feedback:** Use the explanation feature to clarify why an answer is correct or incorrect, reinforcing learning.
4. **Monitor Progress:** Use Quizizz analytics to identify specific grammatical concepts that require additional instruction.
5. **Combine with Other Assessment Methods:** Supplement Quizizz assessments with open-ended questions and authentic tasks to assess higher-order thinking and application skills.
6. **Address Technical Challenges:** Have contingency plans for technical issues, including alternate connectivity options or paper-based backups.

Table 3. Quizizz Implementation Recommendations for Nahwu Instruction

No	Aspect	Recommendation	Rationale
1	Question Types	Multiple choice, true/false, fill-in-the-blank	Best for assessing grammatical rules and memorization
2	Cognitive Levels	Include 30% recall, 40% comprehension, 30% application	Assesses both memorization and conceptual understanding
3	Feedback	Always provide explanations for correct/incorrect answers	Reinforces learning and clarifies misconceptions
4	Timing	30-45 seconds per question	Sufficient time for grammar analysis
5	Frequency	Weekly formative assessments	Continuous monitoring of progress
6	Integration	Combine with traditional assessments	Holistic evaluation of learning outcomes

Source: Authors' compilation based on literature review

Theoretical Framework Connection

The effectiveness of Quizizz in educational assessment can be understood through several established learning theories that explain why gamification-based assessment tools enhance student motivation, engagement, and learning outcomes.

- **Self-Determination Theory (SDT)** : According to Deci and Ryan's Self-Determination Theory (2000), human motivation is driven by the fulfillment of three basic psychological needs: autonomy, competence, and relatedness. Quizizz effectively supports these needs in the

following ways:

Psychological Need	How Quizizz Fulfills It	Evidence from Studies
Autonomy	Self-paced learning allows students to control their learning speed and review content as needed	Muchuweni et al. (2025); Sholihah & Miranty (2025)
Competence	Immediate feedback, points, and progress tracking demonstrate achievement and mastery	Dewi (2025); Maruanaya et al. (2024)
Relatedness	Leaderboards, avatars, and competitive features create social connection and community	Hernanz et al. (2024); Alam & Kholid (2024)

When these three needs are met, students experience increased intrinsic motivation, leading to greater engagement, persistence, and academic achievement (Deci & Ryan, 2000). This theoretical framework explains why Quizizz consistently demonstrates positive effects on student motivation across multiple studies and subject areas.

• **Constructivist Theory**

Quizizz aligns with Vygotsky's (1978) sociocultural theory of learning, which emphasizes the social nature of learning and the importance of interaction in cognitive development. Key connections include: (1) **Social Interaction** : Quizizz's live mode enables simultaneous participation, creating a shared learning experience where students can see peers' progress and engage in healthy competition. (2) **Scaffolding** : The platform's immediate feedback and explanatory features provide scaffolding that supports students in the Zone of Proximal Development (ZPD), helping them move from what they can do independently to what they can achieve with guidance. (3) **Collaborative Learning** : While primarily competitive, Quizizz can be used in team modes that encourage peer discussion and collaborative problem-solving. (4) **Authentic Context** : Gamified assessment creates a meaningful context for applying knowledge, making learning more relevant and memorable.

The constructivist perspective explains why Quizizz is particularly effective for subjects requiring conceptual understanding, such as Nahwu, where students must apply grammatical rules in various contexts.

• **Gammification Theory**

According to Deterding et al. (2011), gamification involves applying game design elements to non-game contexts to enhance user engagement and motivation. Quizizz incorporates several key gamification elements:

Gamification Element	Implementation in Quizizz	Educational Benefit
Points	Students earn points for correct answers and speed	Encourages effort and accuracy
Badges/Achievements	Visual rewards for milestones	Provides sense of accomplishment
Leaderboards	Ranking of top performers	Creates healthy competition
Avatars	Personalized student characters	Increases emotional connection
Progress Tracking	Visual indicators of progress	Supports self-monitoring and goal-setting
Immediate Feedback	Instant correct/incorrect indicators	Reinforces learning and corrects errors
Memes/Humor	Fun elements after answers	Reduces anxiety and increases enjoyment

The combination of these elements creates a "flow state" (Csikszentmihalyi, 1990) where students become fully immersed in the learning activity, losing track of time and experiencing deep engagement.

Critical Analysis of Previous Studies

While the reviewed studies consistently demonstrate Quizizz's positive effects, a critical analysis reveals several methodological and contextual limitations that should be considered when interpreting the findings.

- **Short-Term Studies**

Issue: The majority of reviewed studies (approximately 40%) measured Quizizz effects over a single semester or less. Only a few studies examined long-term impact beyond one academic year.

Implication: The novelty effect may account for some of the positive outcomes observed. Students may initially respond enthusiastically to a new tool, but engagement may decline over time. The long-term sustainability of Quizizz's benefits remains unclear.

Recommendation: Future research should conduct longitudinal studies spanning multiple years to assess sustained effects.

- **Sample Size Limitations**

Issue: Approximately 32% of reviewed studies had sample sizes of fewer than 50 participants. Small sample sizes limit statistical power and generalizability of findings.

Implication: Results from small-sample studies may not be representative of broader student populations. The high variability in small samples can produce inflated or deflated effect sizes.

Recommendation: Future studies should employ larger, more diverse samples to enhance generalizability.

- **Publication Bias**

Issue: Studies showing positive results are more likely to be published than studies with null or negative findings. This "file drawer problem" may lead to an overestimation of Quizizz effectiveness in the published literature.

Implication: The actual effectiveness of Quizizz may be somewhat lower than reported, as unsuccessful implementations may not be represented in the literature.

Recommendation: Researchers should publish studies regardless of outcomes, and meta-analyses should account for potential publication bias.

- **Contextual Limitations**

Issue: Most studies were conducted in Western educational contexts or specific regions in Indonesia. Findings may not generalize to other cultural contexts, educational systems, or subject areas.

Implication: Quizizz effectiveness may vary based on factors such as classroom culture, teacher training, technological infrastructure, and student demographics.

Recommendation: Comparative studies across different contexts should be conducted to identify contextual factors that moderate Quizizz effectiveness.

- **Research Design Limitation**

Issue: Many studies used quasi-experimental designs without randomization or control groups. While these designs provide valuable insights, they cannot establish causality with certainty.

Implication: Alternative explanations for observed improvements (e.g., teacher effect,

student maturation, or other interventions) cannot be fully ruled out.

Recommendation: Randomized controlled trials (RCTs) and experimental studies should be conducted to provide stronger causal evidence.

- **Assesment Limitations**

Issue: Quizizz primarily supports objective question types (multiple choice, true/false, fill-in-the-blank). Higher-order thinking skills such as analysis, synthesis, and evaluation cannot be fully assessed through these formats.

Implication: For subjects like Nahwu, which require both memorization and higher-order thinking, Quizizz should be supplemented with other assessment methods to ensure comprehensive evaluation.

Recommendation: Hybrid assessment approaches should be developed that combine Quizizz's gamified formative assessments with traditional summative assessments and performance tasks.

Limitations and Considerations

Despite its numerous benefits, the use of Quizizz in assessment requires careful consideration of the following limitations:

- **Digital Divide:** Students without reliable internet access or devices may be disadvantaged. Paper Mode can mitigate but not fully resolve this issue.
- **Question Quality:** Creating high-quality assessment questions that accurately measure learning requires time and expertise.
- **Academic Integrity:** Ensuring students complete assessments independently in unsupervised settings remains a challenge.
- **Learning Curve:** Both teachers and students may require initial training to use the platform effectively.

CONCLUSIONS | خاتمة | SIMPULAN

This study has presented a comprehensive framework for designing educational assessments using Quizizz, with specific application to Nahwu instruction. Based on the systematic literature review and analysis of previous studies, the following conclusions can be drawn:

- **Quizizz significantly enhances student motivation and engagement** through gamification elements (points, leaderboards, avatars, and memes). The majority of reviewed studies (60%) reported positive effects on participation and sustained interest in learning activities.
- **Academic performance improves substantially** following Quizizz implementation. Studies documented average score increases of 8-13 points and mastery learning improvements of up to 43.34% in Nahwu and Arabic grammar instruction (Mariati et al., 2025; Refania et al., 2026).
- **Quizizz serves as an effective formative assessment tool**, providing immediate feedback, detailed analytics, and data-driven insights for instructional improvement. This enables teachers to identify areas where students struggle and adjust instruction accordingly (Dewi,

2025; Alam & Kholid, 2024).

- **Test anxiety is reduced** due to the game-based, low-stakes format of Quizizz assessments. Students perceive the platform as more playful and less intimidating than conventional paper-based tests (Sholihah & Miranty, 2025).
- **The procedural framework provided** in this study offers a systematic guide for educators to implement Quizizz-based assessments in Nahwu instruction, from account creation to result analysis.

Implications

For Educators:

- Integrate Quizizz as a regular formative assessment tool in Nahwu instruction
- Provide explanatory feedback for both correct and incorrect answers to reinforce learning
- Use Quizizz analytics to identify specific grammatical concepts needing additional instruction
- Combine Quizizz with traditional assessments for holistic evaluation

For Policymakers and Institutions:

- Support technology infrastructure in educational institutions
- Provide professional development and training for teachers on digital assessment tools
- Encourage the integration of gamification-based assessment in Islamic education curricula

Study Limitations

This study has several limitations that should be acknowledged:

- **Secondary Data:** This study relies on secondary data from previous research. Primary empirical data collection was not conducted.
- **Short-Term Studies:** The majority of reviewed studies (40%) measured effects over a single semester or less. The long-term sustainability of Quizizz's benefits remains unclear.
- **Sample Size:** Approximately 32% of reviewed studies had sample sizes of fewer than 50 participants, limiting generalizability.
- **Language and Source Limitations:** Only English, Indonesian, and Arabic sources were included. Studies in other languages may have been excluded.

Recommendations for Future Research:

Based on the findings and limitations of this study, the following directions for future research are proposed:

- Conduct longitudinal studies to examine the long-term impact of Quizizz on Nahwu learning outcomes.
- Investigate the effectiveness of Quizizz in assessing higher-order thinking skills (analysis, synthesis, evaluation) in Nahwu instruction.
- Compare Quizizz with other gamification platforms (Kahoot!, Blooket, Google Forms) to identify relative advantages and disadvantages.
- Develop and evaluate strategies to address technical challenges, infrastructure limitations, and cheating concerns.

- Examine the effectiveness of Quizizz across different educational levels (primary, secondary, tertiary) and cultural contexts.

ACKNOWLEDGEMENTS | شكر وتقدير | TERIMA KASIH

The authors would like to express their sincere gratitude to the Institut Muslim Cendekia for providing the necessary support and facilities to conduct this research. Special thanks are extended to all colleagues and reviewers who provided valuable feedback and suggestions for the improvement of this manuscript. The authors also acknowledge the contributions of researchers whose previous studies formed the foundation of this work.

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