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# Developing AI Enhanced Gamified Assessments to Improve Student Mastery of English Tense

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## Abstract

The integration of Artificial Intelligence (AI) with gamified learning platforms demonstrates strong potential to enhance student engagement and improve learning outcomes in English language education. This study aims to develop and evaluate AI-supported gamified assessments focusing on students' mastery of English verb tenses, including Simple Present, Simple Past, and Simple Future. The research employed a Research and Development (R&D) approach using the ADDIE model, which consists of Analysis, Design, Development, Implementation, and Evaluation stages. The study was conducted at Institut Teknologi dan Bisnis Asia Malang involving undergraduate EFL students. The learning tool was developed through the *Wayground* (*Quizizz*) platform and supported by AI features such as adaptive feedback, randomized questions, and automated performance monitoring. Validation was carried out by media and subject-matter experts using Likert-scale questionnaires to ensure pedagogical and technical quality. The implementation results showed that 87% of students achieved the expected learning outcomes. These outcomes included the ability to accurately identify, analyse, and apply English tenses in various grammatical and communicative contexts. In addition, students demonstrated increased participation, greater learning motivation, and improved confidence when completing grammar-related tasks. The findings indicate that AI-enhanced gamified assessments effectively support grammar instruction by promoting learner autonomy, improving comprehension, and creating a more engaging learning environment. Therefore, the integration of AI-powered gamified assessments can serve as an innovative and effective approach to enhancing English grammar learning in higher education EFL contexts.

**Keywords**
AI, gamification, interactive learning, English Tenses.

## Introduction

The ongoing advancement of digital technology, particularly artificial intelligence (AI), continues to reshape the educational landscape, transforming how instructional tools are developed and delivered. Heriyawati & Romadhon (2025) added that artificial intelligence (AI) integration is becoming more and more common as higher education changes to keep up with technology breakthroughs. In this era of immersive online

platforms and intelligent systems, global education, including in Indonesia, has shifted from conventional classroom instruction to more flexible, AI-integrated learning environments. However, these transitions have also introduced significant challenges such as reduced engagement in asynchronous learning, limited student-teacher interaction, and persistent difficulties in sustaining learners' motivation and focus (Rahmawati & Umam, 2019; Sujarwo et al., 2022).

To respond to these pedagogical challenges, educational institutions are increasingly integrating AI-supported interactive solutions into their instruction. One such digital platform is *Wayground* (*Quizizz)*, an online assessment tool that gamifies learning through real-time feedback, multimedia-enhanced questions, and dynamic scoring systems (Fakhruddin & Nurhidayat, 2020; Zhao, 2019). When enhanced with AI features and instructional design, such platforms offer not only engaging assessments but also adaptive learning pathways that support students' mastery of complex language elements, particularly English verb tenses (Liu et al., 2023).

This study aims to develop and validate an AI-enhanced tenses learning test using Quizizz as a digital, gamified platform. The test is designed to address grammatical challenges in a more personalized and motivating format. Employing the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) instructional model, the study outlines a structured process for creating and evaluating interactive grammar assessments. By integrating AI-supported feedback and gamification into grammar instruction, this research proposes an innovative and practical pedagogical solution to improve English language instruction in digitally mediated learning environments.

### Peer Feedback in EFL Contexts

Peer feedback remains a pivotal pedagogical approach in EFL writing instruction, particularly when supported by digital or structured environments. Although originally developed in the 1970s (Hyland & Hyland, 2006), its contemporary relevance continues to evolve in technology-integrated classrooms. Recent studies demonstrate that scaffolded and qualified peer feedback can enhance writing performance and revision quality. Gonzalez-Torres & Sarango (2023) found that peer feedback, when structured and facilitated with digital tools, led to measurable improvements in writing outcomes. Nevertheless, recent scholarship notes that learner beliefs and digital competence significantly influence feedback success. Huisman et al., (2018) highlighted how trust in peer competence, clarity of rubric use, and training in giving/receiving feedback are central to productive feedback engagement. This suggests the value of integrating intelligent systems or AI to enhance peer-review clarity and reliability.

### Technological and AI-Enhanced Feedback Approaches

To address the limitations of manual peer feedback and enhance student engagement, researchers have turned to AI-supported tools. Guo, et al (2024) investigated the use of an AI-powered chatbot named Eva in EFL writing classes in China. Results revealed that AI integration significantly improved the quality of peer feedback and fostered deeper reviewer engagement, indicating AI's role in strengthening both feedback literacy and performance outcomes. Furthermore, such systems reduce teacher workload by automating formative feedback while allowing personalization and repetition based on learner needs.

### Gamification and Quizizz in EFL Grammar Learning

Gamified digital platforms like Quizizz have shown growing promise in supporting EFL grammar learning, including the mastery of English tenses. Zhang & Crawford (2024) demonstrated that formative assessments through Quizizz significantly enhanced learner motivation, autonomy, and task engagement. In Indonesia, Fahada & Asrul (2024) revealed that students perceived Quizizz as helpful in increasing vocabulary and grammar retention while reducing boredom and anxiety. Arifudin, Rizkina, & Pujiastuti (2024) further reported that Quizizz supported interactive and low-stress assessments that benefited struggling grammar learners. Rahayu & Widayanti (2018) found that fun learning media and methods are very important in the

process of delivering lecturers' materials. Rahayu & Suwastika (2018) argued that in the teaching and learning process, the utilization of learning media in the form of games as learning media plays an important role.

A broader view concluded that Quizizz ranks among the most widely adopted gamified tools in EFL classrooms, effectively supporting reading skills, digital literacy, and language motivation. However, while engagement is high, the cognitive depth of learning, especially regarding grammar mastery, still depends on instructional design and question types used within the platform. Grabe (2009) emphasized the importance of reading skills in second language learning as a foundation for effective instruction. Similarly, Haswani (2014) highlighted the essential role of technology in enhancing interactivity in EFL classrooms. During the COVID-19 pandemic, Haryati et al. (2021) observed that online learning posed both challenges and opportunities, requiring adaptive teaching strategies. In line with this, Kurniawati et al. (2022) found that teachers' subjective well-being significantly influenced students' creativity.

In gamified learning environments, Goksun and Gursoy (2019) demonstrated that tools like Quizizz and Kahoot increased student engagement and success. Namara and Murphy (2017) compared online and offline perspectives on gamified learning, revealing that online platforms offer more flexibility but demand higher self-regulation. Additionally, Narca and Caballes (2021) emphasized that motivation strategies are crucial to sustaining student engagement in virtual learning environments.

### Engagement, Motivation, and AI Synergy

Gamified platforms inherently promote effective and behavioral engagement. Rachmania, Mustafa, & Setyarini (2026) implementing gamification to teach telling-time expressions in elementary-level English as a Foreign Language (EFL) classrooms is highly effective for boosting student engagement. Children learn more quickly through physical activities, visual aids, and healthy competition. These findings align with meta-analyses by Sailer & Homner (2020) and Huang et al. (2020), which report small-to-medium effect sizes for gamification on educational motivation and achievement. During the COVID-19 pandemic, students faced various obstacles in both online and blended learning environments, including limited access to technology and reduced motivation (Adnan & Anwar, 2020; Aji et al., 2020).

The synergy of AI with gamification opens new possibilities. Karagoz (2025) demonstrated that AI-driven personalization within gamified apps leads to improved feedback accuracy, real-time adaptation to learner errors, and better engagement. Emerging systems such as Neural-AWE and chatbot-based learning assistants, now enable feedback loops that mirror human scaffolding while maintaining consistency and objectivity. The use of digital media such as Quizizz has a positive impact on students' perceptions and engagement in EFL learning (Chaiyo & Nokham, 2017; Anggia et al., 2023; Darmayanti et al., 2026).

Motivation and engagement play a central role in shaping student learning outcomes. Ryan and Deci (2017), through Self-Determination Theory, emphasized the importance of fulfilling basic psychological needs, autonomy, competence, and relatedness to enhance motivation and well-being. In marginalized educational settings, Utomo et al., (2019) highlighted that understanding teaching motivation is crucial for sustaining quality learning experiences. In terms of digital integration, digital technologies positively influence students' research writing process, as Wiranda et al., (2020) reported that vocational English teachers widely adopt ICT to support the learning process.

## Method

### *Pedagogical Setting & Participants*

The present study was conducted at the Faculty of Economics and Business, Institut Teknologi dan Bisnis Asia Malang, Indonesia. This faculty was selected as the research context due to its ongoing integration of digital tools in language instruction and the accessibility of English-major and non-English-major students enrolled in general English courses. The participants were undergraduate students who had previously encountered difficulties in mastering English grammar, particularly verb tenses, as reflected in institutional diagnostic records and faculty evaluations.

A purposive sampling method was used to recruit participants for the study. This sampling strategy was chosen to ensure the inclusion of students who demonstrated challenges with English tenses and were actively participating in digital learning environments. The final sample consisted of 42 undergraduate students (aged 18–22) enrolled in General English courses during the academic year 2024/2025. All participants provided informed consent before the commencement of the research.

### *Design of the Study*

This research employed a Research and Development (R&D) design to create and evaluate an instructional media product aimed at enhancing students' understanding of English tenses. Syahrul, Mustami & Ondeng (2025) define R&D in education as a systematic method of developing educational products such as curricula, instructional materials, or assessment tools through iterative testing, revision, and expert validation. The primary product developed in this study was an AI-enhanced Quizizz-based digital learning module focused on verb tenses. The study adopted the ADDIE instructional design model (Analysis, Design, Development, Implementation, and Evaluation) as its framework for developing and refining the digital game-based learning tool. This approach ensured a comprehensive instructional design process grounded in pedagogical needs and iterative feedback.

### *Data collection & analysis*

Data were collected through questionnaires, expert validation forms, and student performance assessments. The questionnaire was administered in the initial Analysis phase to gather data on students' learning experiences, challenges, and prior knowledge related to English tenses. Items were structured to explore learners' self-perceived difficulties, frequency of grammar errors, and preferred learning modalities. In the Development and Evaluation phases, expert validation sheets were used to assess the content accuracy, interface design, pedagogical relevance, and language quality of the Quizizz-based learning product. Experts included English language instructors and instructional technology specialists. For the Implementation phase, students interacted with the digital learning module over two weeks, during which they completed guided activities, self-assessment quizzes, and final evaluation tasks. Pre-test and post-test data were collected to measure learning gains in the mastery of verb tenses.

Quantitative data were then analyzed using descriptive statistics (mean scores and standard deviations) and paired sample t-tests to determine the effectiveness of the intervention. Qualitative responses from open-ended questionnaire items were analyzed thematically to extract patterns related to student motivation, usability, and perceived impact of the digital game. By combining both formative and summative assessments in the R&D framework, this study aimed not only to measure the product's effectiveness but also to refine it based on real-world feedback, thus ensuring practical relevance and academic rigor.

### *The procedures in the ADDIE stages*

The development process followed the ADDIE model, consisting of Analysis, Design, Development, Implementation, and Evaluation stages. Firstly, during the analysis stage, content analysis was conducted to identify target materials from the syllabus and curriculum that aligned with the learning outcomes related to English tenses. In addition, a needs analysis was carried out to identify learning difficulties experienced by students and to determine suitable digital tools to address these challenges, leading to the selection of Quizizz as an interactive platform for grammar learning.

Secondly, in the design stage, a digital learning module was developed using Quizizz by incorporating materials on the Simple Present, Simple Past, and Simple Future tenses in accordance with the English syllabus of the Management Economics program. The module consisted of 20 multiple-choice questions designed to be completed within 50 minutes and included gamified features such as real-time feedback, visual aids, and score-based competition. Thirdly, during the development stage, the content and

media were validated by material and media experts, including English instructors and instructional designers. Based on their feedback, revisions were made to improve the pedagogical quality, content accuracy, and usability of the module. Fourthly, in the implementation stage, a limited trial involving 12 students was conducted, followed by a larger field trial involving 60 students from four classes. During these trials, students used the Quizizz-based module for two weeks and completed a series of learning activities and assessments integrated into the platform.

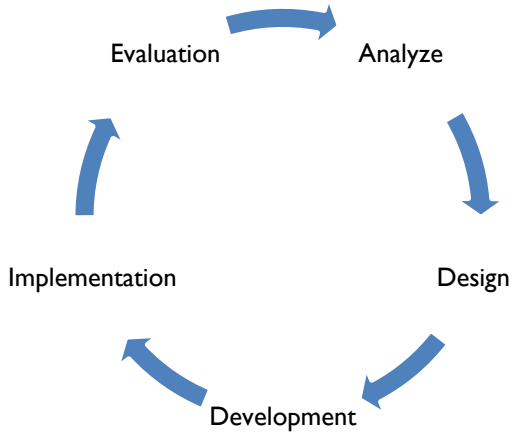



**Figure 1.** ADDIE model

Finally, in the evaluation stage, both formative and summative evaluations were conducted. Formative evaluation involved collecting feedback from expert validators and students regarding the quality and usability of the learning media, while summative evaluation was carried out through learning outcome assessments to measure students' mastery of English tenses and determine the effectiveness of the developed module.

## Findings

The results of this research are presented based on the stages of the ADDIE model used to develop the AI-integrated digital learning media using Quizizz for teaching English tenses. Each phase of the development provides detailed insights into student responses, expert validation, and the overall effectiveness of AI-enhanced grammar learning.

### Analyse

In the analysis phase, the research team conducted a comprehensive needs assessment to identify the requirements for developing AI-enhanced gamified assessments for English tenses learning. The process began with a material analysis that focused on students' needs to master the forms and functions of the Simple Present, Simple Past, and Simple Future tenses. These grammar topics were selected based on the course learning outcomes and their importance in developing students' communicative competence in English. Following the identification of learning needs, a media analysis was conducted to determine the most appropriate digital platform for delivering the assessments. *Wayground* (*Quizizz*) was selected because of its compatibility with AI-supported features, including adaptive question delivery, instant feedback, randomized questions, and learning analytics that enable both students and lecturers to monitor learning progress effectively.

The next step involved analyzing student characteristics. The participants were undergraduate students aged between 19 and 21 years, which, according to Piaget's cognitive development theory, places them in the formal operational stage. At this stage, learners are capable of abstract thinking, logical reasoning, and problem-solving, making them cognitively prepared to understand and apply grammatical concepts (Pakpahan & Saragih, 2022). Subsequently, a concept analysis was carried out to organize and sequence the selected tense materials in accordance with the intended learning outcomes. Finally, a task analysis was conducted to identify learning activities and assessment functions supported by Quizizz, such as immediate feedback, leaderboard-based motivation, and multimodal learning inputs through text, images, and videos. These analyses collectively provided the foundation for designing an effective AI-enhanced gamified assessment system.

## Design

In this stage, lesson plans were aligned with the Management Economics English syllabus. The Quizizz platform was designed to include 20 multiple-choice questions within a 50-minute session. AI integration allowed question randomization, gamification, and automatic feedback. The appearance of the Quizizz application can be seen in the figure 2.

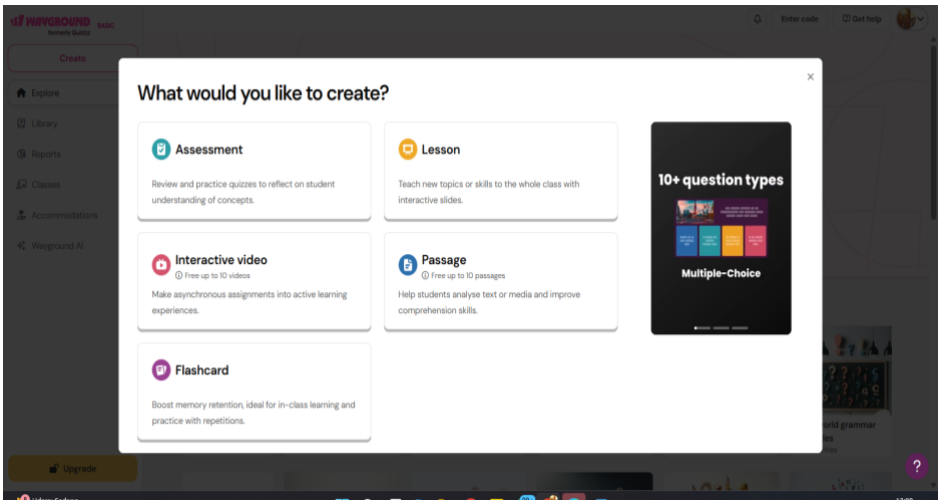



**Figure 2.** The Appearance of Quizizz

Figure 2 presents the updated user interface of *Wayground* AI (formerly known as *Quizizz*), which serves as the primary platform used in this study to develop AI-enhanced tenses learning assessments. As seen in the figures, users are offered several content creations options: Assessment, Lesson, Interactive Video, Passage, and Flashcard. Among these, the Assessment feature was selected to design the English tenses quiz used in the present study.

This platform integrates Artificial Intelligence features such as adaptive question sequencing, automated feedback generation, real-time analytics, and student performance tracking, elements that align directly with the pedagogical goals of this research. In particular, the Assessment tool enabled the researchers to create customized multiple-choice questions focused on the Simple Present, Simple Past, and Simple Future tenses. These were further enhanced by multimedia options, providing a multimodal and engaging experience for learners. The intuitive design and AI capabilities of the platform reflect current trends in educational technology, where learner-centered interactivity, personalized feedback, and data-driven instruction are prioritized to improve grammar acquisition in EFL contexts.

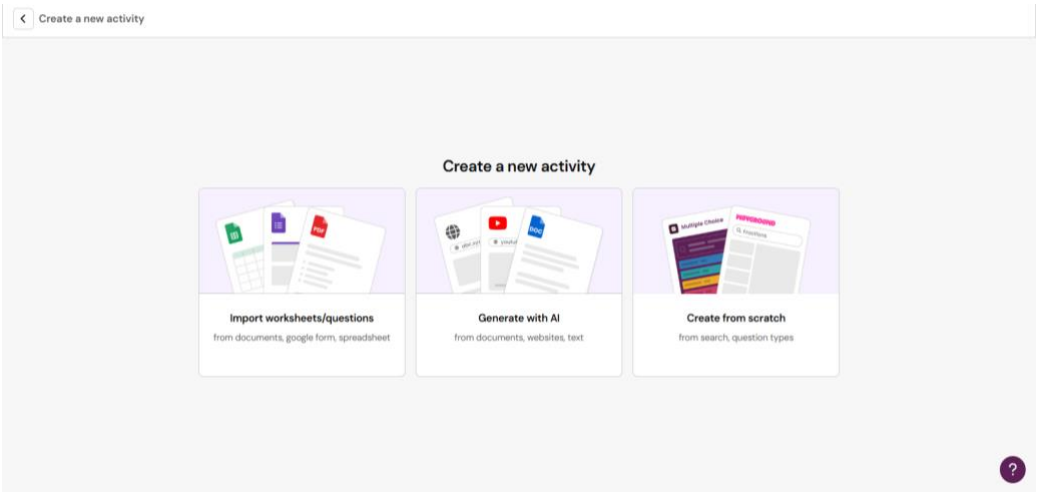



**Figure 3**. *Wayground* (*Quizizz*) Activity Creation Interface

Figure 3 illustrates the interface of *Wayground* AI when initiating the creation of a new digital learning activity. As seen in the figure, users are presented with three main options: Import worksheets/questions, generate with AI, and Create from scratch. For the present study, the "Generate with AI" and "Create from scratch" options were utilized to build a customized tenses assessment. This AI-powered functionality allowed the development of interactive quizzes from existing documents, websites, or textual content. Specifically, the "Assessment" type was selected to design grammar-focused quizzes targeting mastery of English verb tenses. The AI features embedded in Wayground (formerly Quizizz) offered automated question generation, adaptive sequencing, and real-time feedback delivery, enabling personalized and scalable formative assessment practices. This reflects the platform's shift toward AI-assisted instructional design, aligning with the goals of the present study to offer engaging and data-driven grammar learning experiences in English as a Foreign Language (EFL) context. By integrating these tools, educators can easily create assessments that are not only interactive but also tailored to students' performance trends and learning needs.

Figure 4 (the following figure) illustrates the "Text/Prompt" feature available under the Generate with AI option on the Wayground platform (formerly Quizizz). This feature allows educators to directly input custom text, such as grammar explanations or topic outlines, which the AI will process to auto-generate quiz questions. Users can configure several preferences, including the number of questions, subject type, educational level (e.g., university), and output language.

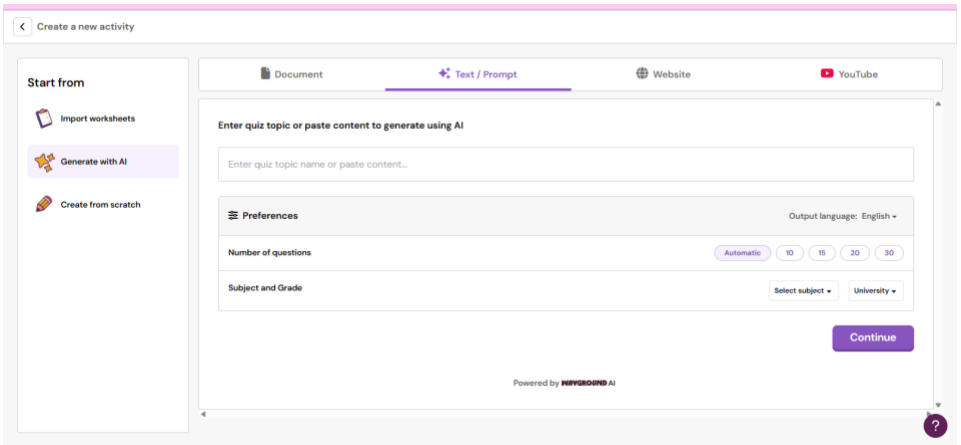



**Figure 4.** *Wayground* (*Quizizz*) Activity Options

In the context of this study, this functionality was leveraged to input tailored content related to Simple Present, Simple Past, and Simple Future Tenses, aligning with the course objectives for English grammar mastery. The decision to utilize the "Text Prompt" method rather than document upload, website scraping, or video input allowed for precise alignment between AI-generated questions and the validated material content.

This step significantly accelerated the development process, showcasing how AI integration in digital learning platforms can support adaptive test creation, learner-centered design, and efficient content personalization in EFL grammar instruction.

## Development

The development process involved content creation and media enhancement based on expert validation. Both media and material experts assessed the learning tool using a 4-point Likert scale to measure dimensions such as accessibility, interactivity, instructional alignment, and digital interface. The assessment of media expert and material expert using a questionnaire consists of four Likert scales, namely Strongly Agree, Agree, Disagree, and Strongly Disagree.

**Table 1. The Aspects Assessed by Media Expert**

| Indicator | Aspect |
|---|---|
| *Accessibility* | Ease of access to digital games |
| | Clarity of instructions for using digital games |
| | Effectiveness of digital game features |
| *Language* | Ease of understanding the language |
| | Accuracy of language and spelling |
| | Ease of understanding tenses material |
| *Display* | The font type is read easily |
| | Suitability of backsound with digital games |
| | Digital game display design |

**Table 2. The Aspects Assessed by Material Expert**

| Indicator | Aspect |
|---|---|
| *Objective* | The suitability of digital games with basic competencies |
| | The suitability of digital games with learning objective |
| | Reducing learning difficulties |
| *Material content* | Suitability of quizzes with the material studied |
| | Encourage curiosity |
| | Encourage learning motivation |
| *Presentation* | The quiz presented is interesting |
| | Updating the quiz |
| | The language used is easy to understand |

The assessment data of media expert and material expert used as a reference in the feasibility percentage. According to Arikunto (2010), the percentage of feasibility from the average converted into qualitative values with categories of very feasible, feasible, quite feasible, and not feasible. Shown in the table 3.

**Table 3. Quantitative Value Conversion Table**

| Category | Precentage |
|---|---|
| Very Feasible | 76%-100% |
| Feasible | 51%-75% |
| Quite Feasible | 26%-50% |
| Not Feasible | 0-25% |

The results of the assessment conducted by media expert include indicators of accessibility, language, and display, while the assessment by material expert is based on indicators of objectives, material content, and presentation. The recapitulation of media expert validation is shown in table 4.

**Table 4. Media Expert Validation**

| Validator | Assessment Results for Each Indicator | | | Average media expert percentage |
|---|---|---|---|---|
| | 1 | 2 | 3 | |
| Media Expert | 93% | 87% | 80% | 87% |

The media expert validation results indicated an overall feasibility percentage of 87%, which falls under the "very feasible" category based on the established criteria. This confirms that the AI-enhanced tenses learning test using Quizizz is well-suited as an interactive digital instructional tool in English language teaching. The media expert provided several suggestions to optimize the implementation of this tool. These include maximizing the use of various Quizizz features beyond multiple-choice items such as short answer and sequencing questions to foster more dynamic and interactive learning. They also recommended the integration of multimedia elements like images, short videos, or audio clips that align with the grammatical tense being taught, which can enhance both visual and auditory learning modalities.

Furthermore, the expert emphasized the importance of continuously updating and expanding the Quizizz question bank to maintain its relevance with evolving curricula and student learning needs. These suggestions support the AI-enhanced and gamified approach of the study, reinforcing its potential to transform traditional grammar instruction into a more engaging and adaptive experience. The assessment of the expert material was carried out in the same way, namely, filling out a questionnaire consisting of four scales. The recapitulation of the material expert is shown in the table 5.

**Table 5. Material Expert Validation**

| Validator | Assessment Results for Each Indicator | | | Average material expert percentage |
|---|---|---|---|---|
| | 1 | 2 | 3 | |
| Material Expert | 93% | 87% | 93% | 91% |

The material expert validation yielded an average feasibility percentage of 91%, placing the AI-enhanced digital tenses test in the "very feasible" category for instructional use. This supports the effectiveness of integrating Quizizz as a gamified learning platform to teach English grammar, particularly verb tenses.

Several constructive suggestions were provided by the material expert to enhance the instructional quality of this AI-supported platform. First, it is recommended that each tense-based question be accompanied by sufficient and varied examples to thoroughly assess student comprehension. The question bank should also present a progressive difficulty level starting from simpler to more complex structures to scaffold learning effectively. Additionally, every answer option should be followed by automated feedback or review explanations to help students identify and correct their errors. The inclusion of multimodal content such as images, audio, or video relevant to the grammar topic is also encouraged to enrich learners' understanding and engagement. Lastly, the expert emphasized the importance of maintaining a dynamic and updated quiz bank, allowing instructors to vary assessment content across sessions and track student progress through regular performance evaluations. These recommendations affirm the study's approach in using AI-driven instructional design to foster deeper learning and sustained motivation in English language classrooms.

### Implementation

At this stage, the AI-enhanced tenses learning test developed through Quizizz was implemented in actual classroom settings. The implementation process consisted of two phases: a limited trial and a field trial. The limited trial involved 12 students selected as class representatives, accounting for 67% participation within the pilot group. The students responded positively to the usability, content clarity, and interactive features of the digital learning tool. Subsequently, a larger-scale field trial was conducted across 4 different classes, involving a total of 60 undergraduate students. During this phase, the effectiveness of the developed learning media was measured based on the percentage of students achieving learning completeness. Accordingly, learning is considered successful when at least 85% of students reach the minimum "good" classification.

**Table 6. Pre-test results: student mastery of English tenses before using *Wayground* (*Quizizz*)**

| Category | Number of Students | Percentage |
|---|---|---|
| Score ≥ 80 (Good) | 6 | 10% |
| Score 60–79 (Fair) | 14 | 23.3% |
| Score < 60 (Poor) | 40 | 66.7% |
| Total | 60 | 100% |

Before implementing the AI-enhanced *Quizizz*-based learning media, a pre-test was administered to 60 students, focusing on the simple present, simple past, and simple future tenses. Results showed that only 10% of students achieved a "good" score, while the majority (66.7%) scored below 60, indicating significant challenges in mastering English tenses. This baseline data justifies the need for developing an engaging, personalized, and interactive learning solution like Quizizz with AI features, which was later implemented to improve student outcomes

**Table 7. The students' completeness after using *Wayground* (*Quizizz*)**

| Category | Total number of students | Percentage |
|---|---|---|
| Completed | 52 | 87% |
| Not complete | 8 | 13% |
| Total | 60 | 100% |

The findings from the field trial revealed that 87% of students successfully met the learning criteria, confirming that the Quizizz-based AI learning media effectively supported students in mastering English verb tenses within an EFL context.

### Evaluation

The evaluation stage was conducted to determine the effectiveness and suitability of the AI-integrated Quizizz learning media. Initially, formative evaluation was carried out by collecting feedback from students and instructors regarding the usability, engagement, clarity, and overall quality of the learning tool. The feedback obtained during this stage was used to identify areas for improvement and to ensure that the assessment media met both pedagogical and technical requirements. Following the formative evaluation, a summative evaluation was conducted to measure the overall effectiveness of the developed media. This evaluation focused on students' learning outcomes, including performance scores and completion rates in the grammar assessments. The results of the second-cycle trial showed that 87% of students successfully achieved the expected learning outcomes, indicating that the AI-based Quizizz platform was an effective and reliable medium for assessing and improving students' mastery of English tenses.

## Discussion

The current study examined the development, validation, and implementation of an AI-enhanced, Quizizz-based learning module for English verb tenses within an EFL higher education context. The results demonstrate the instructional benefits of integrating AI and gamification in grammar instruction.

First, the expert validation process provided strong evidence of the instructional media's feasibility. The media expert gave an average score of 87%, emphasizing the accessibility, interface design, and language clarity of the Quizizz-based platform. Meanwhile, the material expert assigned a 91% feasibility rating, acknowledging the alignment between instructional objectives, content quality, and student needs. These results confirm that the learning module met high standards of quality in both design and pedagogical relevance.

Second, during the implementation phase, 87% of the participating students successfully mastered the target grammar concepts, surpassing the 85% threshold for effective learning interventions. The field trial involved 60 students and indicated a high level of learner engagement and comprehension. Students appreciated the instant feedback, competitive point system, and visual and interactive elements supported by the Quizizz platform. These features, powered by AI and gamification, likely contributed to increased student motivation, reduced anxiety, and improved retention of grammatical structures. Furthermore, the student responses in both limited and full-scale trials were overwhelmingly positive. A 93.75% satisfaction rate reflects learners' enthusiasm for the tool's usability, fun factor, and adaptive learning features. This aligns with the goal of personalized instruction, where learners receive immediate corrective input and progress at their own pace key affordances of AI-supported environments.

### Relationship to and Comparison with Previous Research

The results of this study are consistent with and reinforce several findings from existing literature on gamified and AI-supported learning environments in EFL settings. For instance, research by Rahmawati & Umam (2019) emphasized that digital media have a positive impact on learner motivation and interaction. This study supports that claim by demonstrating high levels of student engagement and satisfaction with the Quizizz platform. Similarly, Liu et al. (2023) highlighted the role of gamification in enhancing student engagement, formative assessment quality, and learning motivation. These principles were reflected in the present study, particularly through the use of real-time feedback, interactive rankings, and game-based features in Quizizz, which contributed meaningfully to students' mastery of verb tenses.

Moreover, Zhao (2019) and Amalia (2020) identified that Quizizz helps improve comprehension and fosters competitiveness among learners. The current study confirmed these insights by illustrating how the platform's dynamic question formats and scoring mechanisms stimulated healthy competition and encouraged students to enhance their performance. The AI features in Quizizz such as automated feedback, randomized question delivery, and real-time performance analytics mirrored these pedagogical recommendations and proved effective in deepening grammar comprehension. While many prior studies have investigated gamification or AI in isolation, this research bridges both approaches. It demonstrates how AI capabilities embedded within a gamified platform like Quizizz can provide a scalable, adaptive, and student-centred learning experience that surpasses the limitations of conventional teacher-led instruction. Overall, the findings contribute to the expanding body of evidence validating the combined use of artificial intelligence and gamification in language education. Beyond confirming the practicality and feasibility of using Quizizz for grammar instruction, the study underscores its transformative potential in addressing EFL learners' difficulties with English tenses, offering a highly interactive, personalized, and engaging learning model well-suited for contemporary higher education contexts.

## Conclusion

This study concludes that integrating AI-based digital learning media, specifically Quizizz, can significantly enhance students' understanding and mastery of English tenses. The use of the AI-supported Quizizz platform led to an 87% student completion rate, indicating its effectiveness in improving grammar proficiency. Students reported a more enjoyable and engaging learning experience, attributed to Quizizz's interactive features such as real-time scoring, gamified assessments, and accessible interface. Quizizz not

only fosters student motivation but also allows teachers to design varied practice materials and evaluate student performance effectively. Its accessibility through multiple devices makes it a practical tool for both in-class and independent learning. Despite the positive outcomes, this study is limited in scope due to its sample size and context, which was restricted to students from a single university program. Future research is recommended to explore AI-integrated media across broader learner populations and in different educational contexts. Further studies may also investigate the long-term impact of AI-assisted tools on grammar retention, learner autonomy, and personalized learning experiences. Overall, the findings support the continued development and integration of AI-powered digital tools such as Quizizz in EFL instruction, reinforcing their role in transforming traditional grammar instruction into more dynamic and effective learning experiences.

## References

Adnan, M., & Anwar, K. (2020). Online learning amid the COVID-19 pandemic: Students' perspectives. *Journal of Pedagogical Sociology and Psychology, 2*(1), 45–51. https://doi.org/10.33902/JPSP.2020261309

Aji, W. K., Ardin, H., & Arifin, M. A. (2020). Blended learning during pandemic corona virus: Teachers' and students' perceptions. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature, 8*(2), 632–646. https://doi.org/10.24256/ideas.v8i2.1696

Amalia, D. F. (2020). Quizizz Website as an Online Assessment for English teaching and Learning: Students' Perspectives. *Jo-ELT (Journal of English Language Teaching),* 7(1), 1–8. https://doi.org/10.33394/joelt.v7i1.2638

Anggia, H., Magyar, A., Habok, A. (2023). Measurement Invariance of the English Reading Motivational Structure of Bilingual and Multilingual University Students. *Heliyon Journal, 9*. https://doi.org/10.1016/j.heliyon.2023.e22884

Arifudin, F., Rizkina, P. A., & Pujiastuti, E. (2024). Gamification in EFL Class Using Quizizz as An Assessment Tool. *Metafora: Jurnal Pembelajaran Bahasa Dan Sastra, 11*(1), 259-264. https://doi.org/10.30595/pspfs.v3i.268

Arikunto, S. (2010). *Prosedur penelitian: Suatu pendekatan praktik (Edisi revisi).* Jakarta: Rineka Cipta.

Chaiyo, Y., & Nokham, R. (2017, March). The effect of Kahoot, Quizizz and Google Forms on the student's perception in the classrooms response system. In *2017 International conference on digital arts, media and technology (ICDAMT)* (pp. 178-182). IEEE.

Darmayanti, Y., Amanda, V., Zahra, R., Ningsih, A. R., Muafi, K., & Safitri, A. (2026). The Influence of Digital Storytelling on EFL Students' Reading Motivation and Reading Habits. *Journal of English Language and Education, 11*(3), 691-697. https://doi.org/10.31004/jele.v11i3.2474

Fahada, S., & Asrul, M. (2024). Enhancing motivation and grammar skills of Indonesian EFL learners through Quizizz gamification. *Indonesian Journal of Applied Linguistics, 14(*1), 88–98.

Fakhruddin, A., & Nurhidayat, E. (2020). Students' Perception on Quizizz as Game-Based Learning in Learning Grammar in Written Discourse. *Wiralodra English Journal,* 4(2), 28–38. https://doi.org/10.31943/wej.v4i2.101

Goksun, D., O., Gursoy, G. (2019). Comparing success and engagement in gamified learning experiences via Kahoot and Quizizz. *Computers & Education Journal. 135*, 15-29. https://doi.org/10.1016/j.compedu.2019.02.015

Gonzalez-Torres, P., & Sarango, J. (2023). The impact of structured peer feedback on high school EFL writing performance. *TESOL Journal, 14*(2), e12367. https://doi.org/10.1002/tesj.2367

Grabe, W. (2009). *Reading in a Second Language: Moving from Theory to Practice*. Cambridge Applied Linguistics.

Guo, K., Pan, M., Li, Y., & Lai, C. (2024). Effect of an AI -supported Approach to Peer Feedback on University EFL Studnts' Feedback Quality and Writing Ability. *The Internet and Higher Education, 63*. https://doi.org/10.1016/j.iheduc.2024.100962

Haryati, S., Sukarno, S., Purwanto, S. (2021). Implementation of Online Education During the Global Covid 19 Pandemic: Prospects and Challenges. *Journal of Cakrawala Pendidikan. 40* (3). 604-6011. https://doi.org/10.21831/cp.v40i3.42646

Haswani, F. (2014). The Role of Technology in EFL Classroom. *IJEE (Indonesian Journal of English Education), 1*(2), 107–118. https://doi.org/1/10.15408/ijee.v1i2.1303

Heriyawati, D. F., & Romadhon, M. G. E. (2025). "Can AI Be Trusted for My Thesis?" The Voices of Indonesian Higher Education Levels About ChatGPT in Automated Writing Evaluation (AWE). *Computer-Assisted Language Learning Electronic Journal, 26*(1), 58-75. https://doi.org/10.54855/callej.252614

Huang, B., Hew, K. F., & Lo, C. K. (2020). Gamification in education: A meta-analysis and synthesis of the literature. *Educational Research Review, 30*, 100326. https://doi.org/10.1016/j.edurev.2020.100326

Huisman, B., Saab, N., Van Driel, J., & Van Den Broek, P. (2018). Peer feedback on academic writing: undergraduate students' peer feedback role, peer feedback perceptions and essay performance. *Assessment & Evaluation in Higher Education, 43*(6), 955-968. https://doi.org/10.1080/02602938.2018.1424318

Hyland, K., & Hyland, F. (2006). Feedback on second language students' writing. *Language Teaching, 39*(2), 83–101. https://doi.org/10.1017/S0261444806003399

Karagoz, I. (2025). AI-generated feedback in English writing instruction for language learners: A systematic review. *The Reading Matrix: An International Online Journal, 25*(1), 51-67. https://www.readingmatrix.com/files/34-9gp90gjo.pdf

Kurniawati, F., Saleh, A. Y., & Safitri, S. (2022). How to foster students' creativity? The effects of teacher subjective well-being mediation on the intellectual humility. *Cakrawala Pendidikan, 41*(1), 31-42. https://doi.org/10.21831/cp.v41i1.40055

Liu, T., Oubibi, M., Zhou, Y., & Fute, A. (2023). Research on online teachers' training based on the gamification design: A survey analysis of primary and secondary school teachers. Heliyon, 9(4). https://doi.org/10.1016/j.heliyon.2023.e15053

Namara, D., M., & Marphy L. (2017). *Online Versus Offline Perspectives on Gamified Learning. GamiFIN Conference*. University Consortium of Pori, Finland. https://ceur-ws.org/Vol-1857/gamifin17_p7.pdf

Narca, M. L. G., & Caballes, D. G. (2021). Learning Motivation: Strategies to Increase Students' Engagement in Online Learning at San Sebastian College-Recoletos, Manila. *Online Submission, 2*(4), 573-580. https://doi.org/10.46966/ijae.v2i4.217

Pakpahan, F.H., Saragih, M. 2022. Theory of Cognitive Development By Jean Piaget. *Journal of Applied Linguistics (JoAL), 2* (2), 55-60. https://doi.org/10.52622/joal.v2i2.79

Rachmania, S., Mustafa, B., & Setyarini, S. (2026). Enhancing student engagement through gamification in teaching telling-time expressions in elementary EFL classrooms. *KEMBARA: Jurnal Keilmuan Bahasa, Sastra, dan Pengajarannya, 12(*1), 432-443. Rahayu, W. A., & Suastika, Y. R. 2018. Developing English Vocabulary Learning Game. *Cakrawala Pendidikan, 37*(1), 85-96. https://doi.org/10.21831/cp.v37i1.15965

Rahayu, W. A., & Widayanti, L. (2018). The application of game-based learning to increase english communication skills on mathematics subject. In *Proceedings of the 2nd International Conference on Learning Innovation*. *Scitepress* (pp. 367-75).

Rahmawati, M. R., & Umam, A. 2019. Integrating Web 2.0 Tools in Writing Class to Promote Assessment for Learning. *Journal of English Education society, 4*(2). doi.org/10.21070/jees.v4i2.2516

Ryan, R. M., & Deci, E. L. (2021). Self-determination theory: Basic psychological needs in motivation, development, and wellness. *Rajagiri Management Journal, 15*(1), 88-90. http://journals.rajagiri.edu/index.php/rmj/article/view/541

Sailer, M., & Homner, L. (2020). The impact of gamification in educational settings: A meta-analysis. *Educational Psychology Review, 32(*1), 77–112. https://doi.org/10.1007/s10648-019-09498-w

Sujarwo., Kusumawardani, E., & Nurmalasari, Y. (2022). Does the Motivation and Parents Involvement Affected by Distance Learning Media During Pandemic Covid 19? *Cakrawala Pendidikan. 41*(2), 481-492. doi.org/10.21831/cp.v41i2.46265

Syahrul, A., Mustami, K., & Ondeng, S. (2025). Research and development (R&D) and evaluation research: A comparative analysis of methodologies and applications in educational and technological innovation. *Journal AGENCY, 5*(1), 105-111. https://doi.org/10.54065/agency.5.1.2025.469

Utomo, H. B., Suminar, D. R., & Hamidah, H. (2019). Capturing teaching motivation of teacher in the disadvantaged areas. *Cakrawala Pendidikan, 38*(3), 398-410. https://doi.org/10.21831/cp.v38i3.26411

Wiranda, R., Petrus, I., & Vianty, M. (2020). The use of ICT in learning process by vocational teachers of English. *English Review: Journal of English Education, 8*(2),119. https://doi.org/10.25134/erjee.v8i2.2617

Zhang, Z., & Crawford, J. (2024). EFL learners' motivation in a gamified formative assessment: The case of Quizizz. *Education and Information Technologies, 29*(5), 6217-6239. https://doi.org/10.1007/s10639-023-12034-7

Zhao F. (2019). Using Quizizz to Integrate Fun Multiplayer Activity in the Accounting Classroom. *International Journal of Higher Education 8*(1). 37-43. https://doi.org/10.5430/ijhe.v8n1p37

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