

An analysis of the need to develop gamification-based teaching materials for Indonesian language learning in primary schools

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ABSTRACT

Background: Indonesian language learning, particularly reading instruction, has not yet been implemented optimally and continues to face challenges in fostering students' interest in reading. Gamification is considered a promising approach to enhancing students' engagement and participation in the learning process.

Purpose: This study aims to analyze teachers' needs for the development of gamification-based interactive digital teaching materials for Indonesian language learning in elementary schools.

Method: This study employed a qualitative descriptive approach. Data were collected through in-depth interviews with 10 Phase B (Grades 3–4) elementary school teachers in the Yogyakarta region. The data were analyzed using the Miles and Huberman model, which consists of data reduction, data display, and conclusion drawing.

Findings: The findings indicate that: (1) Phase B students' interest in reading remains low; (2) teacher creativity plays a crucial role in creating an engaging learning environment; (3) teachers' understanding of gamification is generally limited to enjoyable classroom activities and does not comprehensively encompass its core elements; (4) limited knowledge, time constraints, and inadequate facilities hinder the implementation of gamification in learning; and (5) teachers need gamification-based interactive digital teaching materials that are varied, engaging, practical, effective, and accompanied by user guidelines.

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INTRODUCTION

Reading is a fundamental skill that primary school students must develop to meet the demands of the modern world. It serves as a cornerstone for acquiring knowledge, fostering critical thinking, and broadening perspectives. However, empirical evidence indicates that the reading proficiency of primary school students in Indonesia remains low. According to the Programme for International Student Assessment (PISA) results from 2018 to 2022,

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Indonesian students have consistently performed below the international average in reading literacy (Kaffah Hemas Safitri et al., 2024). Limited reading proficiency hinders students' ability to access, comprehend, and interpret information from various sources, including textbooks, supplementary learning materials, and other educational resources. Consequently, students with reading comprehension difficulties tend to achieve lower academic outcomes than those without such difficulties. Reading literacy is essential not only for academic achievement but also for developing critical thinking and making informed decisions. Nevertheless, the 2022 PISA results showed that Indonesia ranked 69th out of 81 participating countries in reading literacy (Meilya et al., 2024).

The teaching of the Indonesian language, particularly reading and listening, has not yet been implemented in a manner that effectively engages students' interest. Monotonous and unengaging instructional practices constitute one of the external barriers to effective reading instruction (Sholihah et al., 2025). Another factor contributing to students' low interest in reading is the teaching approach adopted in schools. When teachers are unable to foster students' enthusiasm for reading through engaging instructional strategies, students are more likely to perceive reading as a tedious and meaningless activity. Moreover, an overloaded curriculum that emphasizes examination outcomes may limit students' opportunities to read in a relaxed and enjoyable learning environment (Dewi et al., 2025).

Teachers play a pivotal role in fostering students' literacy development. As facilitators, motivators, and innovators, they are instrumental in promoting effective literacy learning (Sholihah et al., 2025). Activity-based instructional approaches, such as shared reading, storytelling, and literacy games, have been shown to effectively enhance students' reading interest and literacy skills. In addition, the integration of technology through interactive learning applications, together with the provision of literacy-rich learning environments, further supports literacy development. However, several challenges remain, including limited instructional time, inadequate access to high-quality reading materials, and variations in students' literacy proficiency. Therefore, continuous professional development is essential to strengthen teachers' competence in implementing effective literacy instruction. Previous research has concluded that teachers who are proactive and adaptable to diverse learning contexts play a significant role in fostering a strong literacy culture in primary schools (Tamala, 2024). To fulfill this role, teachers must continuously enhance their creativity and innovation in designing instruction by utilizing appropriate and engaging learning media that promote students' active participation in the learning process (Sukma et al., 2025). Furthermore, teachers are expected to possess strong digital literacy competencies to effectively integrate technology into classroom instruction, thereby preparing students to meet the demands of the Fourth Industrial Revolution (Toharudin et al., 2021).

Low levels of reading proficiency provide valuable insights for teachers in designing effective instructional strategies to improve students' literacy skills at the primary school level (Triyono et al., 2023). One promising approach to enhancing students' reading skills and interest is the use of interactive teaching materials integrated with gamification. Gamification can be understood as an instructional approach that incorporates game design elements into non-game contexts to enhance learner engagement and motivation. Students who participate in gamified learning environments generally demonstrate higher levels of learning motivation, as well as improvements in social behavior. Common gamification elements, including points, badges, leaderboards, and levels, are frequently incorporated into digital learning environments. Empirical studies have shown that gamification-based instructional approaches can effectively support the achievement of educational objectives, including the development of numeracy skills (Mariyanti et al., 2022). Nevertheless, the implementation of gamification may produce both positive and negative effects on students, depending on various factors related to the design and implementation of the game (Rui & Tasir, 2022). Previous studies on gamification-based teaching materials implemented through the Contextual Teaching and Learning (CTL) model have also reported positive outcomes, demonstrating greater conceptual understanding of mathematics than conventional classroom instruction (Ningsih et al., 2020).

Several studies have explored various approaches to improving elementary school students' reading skills through the development of innovative teaching materials. These include the development of picture storybooks (Sukma et al., 2025), electronic student worksheets (e-LKPD) (Apreasta et al., 2023), and Big Book teaching materials (Khairu Annisa Pulungan et al., 2025). In addition, a number of studies have investigated the application of gamification in elementary education. These include research on gamification in elementary school learning (Legowo, 2022), the use of gamification to enhance students' knowledge and participation (Mariyanti et al., 2022), gamification-based learning media for teaching the Solar System (Fatharani et al., 2022), and a mobile application employing a gamification approach for mathematics learning (Bantun et al., 2024).

Specifically, previous studies on the development of Indonesian language teaching materials have focused on a variety of instructional innovations. These include the development of genre-based interactive electronic student worksheets (e-LKPD) (Faidah et al., 2024), digital teaching materials for poetry writing (Gusman et al., 2021), differentiated Indonesian language learning modules based on local wisdom (Sarmadan et al., 2024), and mother tongue-based teaching materials incorporating the local cultural values of Nagekeo to support reading and writing instruction in lower elementary grades (Laksana et al., 2023). Although these studies have demonstrated the potential of innovative teaching materials to improve learning outcomes, limited attention has been given to the development of

gamification-based interactive digital teaching materials for Indonesian language learning in elementary schools. This gap underscores the need for the present study.

Although previous studies have explored the development of innovative teaching materials and the application of gamification in education, limited attention has been given to the development of gamification-based teaching materials specifically for Indonesian language learning at the elementary school level. This research gap highlights the need for a needs analysis to inform the development of gamification-based teaching materials aimed at enhancing students' interest in reading as well as their reading and listening skills. Accordingly, this study aims to analyze teachers' needs regarding the development of gamification-based teaching materials for Indonesian language learning in elementary schools. Conducting a needs analysis is a critical preliminary stage in the development of teaching materials, as it ensures that the resulting digital teaching materials address actual classroom needs, align with students' learning characteristics, and are feasible for teachers to implement effectively in digital learning environments

METHODS

This study employed a descriptive qualitative approach to explore teachers' needs regarding the development of interactive, gamification-based digital teaching materials for Indonesian language learning at the elementary school level. The study specifically focused on teaching materials designed to enhance students' interest in reading as well as their reading and listening skills. Data were collected through in-depth semi-structured interviews to explore classroom learning conditions, the use of instructional media, teachers' needs for teaching materials, and their perceptions of gamification. Participants were selected using purposive sampling based on the following criteria: (1) having at least 10 years of teaching experience, (2) teaching Indonesian language in Phase B (Grades 3–4), and (3) holding a professional teaching certificate. A total of 10 elementary school teachers from the Yogyakarta region participated in the study.

To ensure the trustworthiness of the findings, source triangulation was employed by comparing interview data across participants to identify the consistency of emerging themes. Data were analyzed using the interactive model proposed by Miles and Huberman, which consists of three stages: (1) data reduction, involving the coding and categorization of interview transcripts; (2) data display, in which themes related to the need for gamification-based Indonesian language teaching materials were systematically organized and presented; and (3) conclusion drawing and verification, involving the interpretation and synthesis of teachers' needs regarding the development of gamification-based teaching materials.

RESULT AND DISCUSSION

The State of Indonesian Language Learning

Students' interest in reading remains relatively low, resulting in Indonesian language instruction that is often less effective because students are not actively engaged in literacy-related learning activities. This finding is consistent with the interview data collected in the present study, in which all participating teachers reported similarly low levels of reading interest among elementary school students.

One participant (Teacher Pr) observed: *"From what I have observed, today's children are becoming increasingly reluctant to read and write."* Similarly, Teacher Rul explained:

"Many students have difficulty maintaining their focus while reading. They tend to read only to finish the text as quickly as possible without understanding its main ideas. They prefer instant answers and would rather ask the teacher directly than try to interpret the meaning on their own."

Likewise, Teacher Ar stated:

"One of the main challenges my students face is reading comprehension. Many of them simply do not enjoy reading, so even when questions are based directly on the text, they often struggle to answer them because they have not fully understood what they have read."

Previous studies have consistently reported that low reading interest and inadequate reading proficiency remain persistent challenges among elementary school students. Poor reading skills are frequently observed in both lower and upper elementary grades (Khaerawati et al., 2023). Similarly, Ahyar et al. (2022) found that one of the major challenges faced by elementary school students is limited reading ability, which is closely associated with low interest in reading. A review of the literature further indicates that reading habits among elementary school students remain generally low (Triyono et al., 2023). These findings are supported by a large-scale survey involving 3,817 students from 29 elementary schools, which revealed that only 10% of students demonstrated high levels of reading habits, while 17% exhibited moderate reading habits and 73% were classified as having low reading habits (Mutadin et al., 2024). The consistency between these findings and the results of the present study indicates that low reading interest remains a persistent challenge in Indonesian elementary schools. This condition underscores the need for more engaging instructional approaches and innovative teaching materials that can foster students' motivation to read and improve their literacy skills.

Low interest in reading has significant implications for students' ability to comprehend increasingly complex texts. Limited reading interest contributes to poor reading habits, which subsequently hinder the development of reading skills. Rahayu et al. (2023) similarly reported that students' low interest in reading leads to poor reading habits, ultimately

resulting in weak reading proficiency. This finding is consistent with the interview data collected in the present study. One elementary school teacher stated: *"If children are reluctant to read from the beginning, they will struggle to complete their learning tasks."*

The teacher further explained:

"Reading is the foundation of writing. To write well, students need to have a rich vocabulary, and vocabulary is primarily developed through extensive reading. When children rarely read, the words they know are limited to those they encounter in their everyday conversations."

Similar concerns were expressed by an Indonesian language teacher, who stated:

"One of the greatest challenges in Indonesian language learning is helping students identify the main idea of a text. Students who do not enjoy reading often struggle to identify the main idea because doing so requires careful and attentive reading. When students are already reluctant to read, they find it difficult to recognize both the main ideas and the key sentences within a text."

These interview findings indicate that declining reading interest has become a major challenge in Indonesian language learning. Since reading serves as the primary means of understanding texts, identifying key information, and answering comprehension questions, limited reading interest ultimately hinders students' reading comprehension and overall literacy development.

The interview findings further revealed that low reading interest negatively affects students' learning beyond reading itself. Teacher Fa explained:

"When students are asked to explain the content of a text or draw their own conclusions, many simply respond, 'I don't know.' This indicates that they have not understood the text because they are not interested in reading."

Similarly, Teacher Pr stated:

"When children rarely read and receive limited language exposure at home, the vocabulary they acquire is restricted to what they hear in everyday conversations. As a result, when they write, they tend to repeat the same words, such as 'then' and 'after that,' throughout their compositions."

These findings indicate that limited reading interest restricts students' vocabulary development, which in turn affects their ability to express ideas effectively in written language. When asked to write essays or construct sentences, students often rely on repetitive vocabulary because they lack sufficient lexical resources.

The impact of low reading interest was also evident across other subject areas. Teacher Ar explained:

"Low reading interest affects learning in all subjects. For example, in mathematics, students often struggle to solve word problems because they have difficulty understanding the questions."

Likewise, Teacher Rul stated:

"Students become reluctant to complete their assignments and often say that they cannot do them. Consequently, their learning outcomes are not optimal. This problem also affects other subjects because reading ability is the foundation of learning across the curriculum."

Overall, the interview findings demonstrate that low reading interest has far-reaching educational consequences. In addition to reducing students' motivation to learn and limiting their academic achievement, poor reading interest also hinders comprehension across subject areas, as reading proficiency is a fundamental prerequisite for understanding instructional content in virtually all areas of learning.

The interview findings also revealed that students' low reading interest is reflected in their reading behaviour and comprehension. Teacher Pr explained:

"Children today tend not to read texts carefully. As a result, their answers often do not correspond to the questions because they want instant answers rather than taking the time to read and understand the text."

Similarly, Teacher Tin stated:

"Many students struggle to understand written questions, tables, and explanatory texts. Because they do not enjoy reading, their vocabulary is limited, making it difficult for them to comprehend what they read."

Teacher Fa further highlighted the influence of digital media on students' reading habits:

"Children today are no longer accustomed to reading long passages or stories. They spend much of their time on mobile phones, accessing social media platforms such as TikTok and YouTube Shorts or playing online games. These platforms present colourful, fast-moving visual content accompanied by music, making students accustomed to rapid stimulation. Consequently, when they encounter long passages of plain text without visual or audio stimulation, they quickly lose interest and tend to skim the text rather than read it carefully."

These findings suggest that students' preference for fast-paced digital content has influenced their reading behaviour. Rather than engaging in careful and reflective reading, many students tend to seek immediate information and read superficially, which ultimately limits their reading comprehension and reduces the effectiveness of Indonesian language learning.

The interview findings are consistent with previous empirical studies demonstrating the close relationship between reading interest, reading habits, and reading achievement. Rahayu et al. (2023) reported that low interest in reading contributes to poor reading habits, which subsequently lead to weak reading skills. Similar evidence was reported by Orellana et al. (2020), who examined the relationship between reading motivation and reading comprehension among 1,070 students in Grades 3–5 from public and private elementary schools in Chile. Their findings revealed that students who began the academic year with higher levels of reading motivation demonstrated significantly greater improvements in reading comprehension than those with lower levels of reading motivation. Collectively, these findings reinforce the results of the present study, indicating that fostering students' interest in reading is essential for improving reading comprehension and overall literacy development.

Teachers' Creativity in Indonesian Language Instruction

The current state of students' reading interest highlights the need for innovative instructional strategies that can attract students' attention and motivate them to engage more actively with reading materials. This challenge has become an important consideration in curriculum reform efforts aimed at improving students' reading habits and literacy skills. Previous studies have consistently shown that many elementary school students continue to experience difficulties in reading literacy (Triyono et al., 2023). These findings underscore the importance of accelerating the development of students' reading proficiency from the elementary school level. As key facilitators of learning, teachers are expected to demonstrate creativity and innovation in designing meaningful learning experiences by utilizing engaging and appropriate teaching materials that actively involve students in the learning process (Sukma et al., 2025).

The interview findings indicate that teacher creativity plays a crucial role in fostering students' interest in reading. Teacher Pr emphasized the importance of adapting instruction to students' changing learning preferences:

"In my view, children who spend excessive time on their gadgets are becoming less willing to read or listen because they are more absorbed in digital games. Therefore, teachers need to find ways to make learning enjoyable and encourage children to develop an interest in reading, because reading is the foundation for learning to write."

Similarly, Teacher Fa highlighted the importance of selecting age-appropriate reading materials:

"Teachers need to be creative. They can provide light reading materials, such as comics, children's storybooks, or books with engaging illustrations and minimal text, before gradually introducing longer children's novels."

Teacher Pr also stressed that conventional teaching approaches are no longer sufficient:

"Teaching today's students cannot rely solely on lectures. We need to use pictures, stories, audiovisual media, and other engaging learning resources. As long as the story is interesting, students will pay attention."

Teacher Wk further explained that teachers should carefully select reading materials that match students' interests:

"Teachers need to choose reading materials that appeal to students. In my class, for example, students enjoy horror stories. Reading materials can also be linked to topics that are currently popular or relevant to students' daily lives. Once, I asked students to read a news article about cigarettes. They were enthusiastic about finding and reading the article, and they were able to discuss its content and the health consequences of smoking."

In addition, Teacher Pr emphasized the importance of instructional variety:

"When teachers use a variety of teaching methods, students become more interested in learning. However, if the same methods are used repeatedly, they quickly become bored because they are always looking for new and engaging learning experiences."

These findings demonstrate that teacher creativity extends beyond the selection of teaching materials to include the use of varied instructional strategies, relevant learning resources, and engaging media. Such approaches can increase students' interest in reading by creating enjoyable learning experiences that are responsive to their characteristics and learning preferences.

Teachers are expected to demonstrate creativity and continuously adopt innovative approaches to instruction, particularly in response to students' diverse learning needs and their tendency to lose interest during classroom activities. Teacher creativity is therefore essential for creating engaging, enjoyable, and learner-centred learning environments that accommodate students' characteristics and needs. In Indonesian language instruction, this requires teachers to integrate a variety of instructional strategies, learning media, and digital technologies to create more dynamic and meaningful learning experiences. Such efforts are particularly important given that students' interest in reading, especially in Indonesian language learning, remains relatively low. Many students continue to perceive Indonesian as an uninteresting and monotonous subject (Khairani et al., 2023). Previous research has also identified monotonous instructional practices as one of the major external factors contributing to students' low motivation to read (Sholihah et al., 2025).

Teachers play multiple roles as facilitators, motivators, and innovators in promoting literacy learning. Student-centred instructional approaches, such as shared reading, storytelling, and literacy-based games, have been shown to effectively enhance students'

interest in reading and improve their literacy skills. In addition, the integration of digital technologies, including interactive learning applications, together with the provision of literacy-rich learning environments, further supports students' literacy development. Consequently, teachers play a pivotal role in fostering a strong literacy culture in elementary schools (Tamala, 2024). As learning facilitators, teachers are expected to demonstrate creativity and innovation in designing meaningful learning activities by utilizing appropriate instructional media that actively engage students in the learning process (Sukma et al., 2025). Furthermore, teachers play a critical role in maintaining students' attention throughout classroom instruction. Despite differences in students' prior knowledge, abilities, and learning characteristics, teachers are expected to cultivate students' motivation to learn while ensuring that instructional activities remain active, engaging, and effective (Agustini et al., 2024).

Creative teachers are capable of designing engaging and interactive learning experiences, including educational games that promote active student participation and meaningful learning (Yulianti et al., 2024). Such instructional competencies cannot be fully developed through traditional lecture-based approaches alone, which are often characterized by teacher-centred and less flexible instruction. Consequently, teachers are increasingly expected to adopt practical, innovative, and student-centred teaching approaches that sustain students' interest while fostering positive learning environments (Gini et al., 2025). However, designing creative learning environments remains a significant challenge, as many teachers continue to rely on conventional instructional practices because of their familiarity and ease of implementation (Mee Mee et al., 2020). Likewise, conventional e-learning environments often provide limited opportunities for interaction and active participation, which may reduce students' engagement and ultimately hinder their learning outcomes.

Teachers' Perceptions of Gamification in Indonesian Language Learning

The interview findings indicate that teachers' understanding of gamification remains limited. Most participants perceived gamification simply as the use of games or enjoyable classroom activities, while only a few recognized its broader instructional components, such as points, badges, levels, challenges, and structured feedback. In educational contexts, gamification refers to the integration of game design elements—including rewards, challenges, points, levels, and feedback—into non-game learning environments to enhance learners' engagement, motivation, and persistence (Yamani, 2021; Luo, 2023).

Teacher Fa explained:

"Before this interview, I searched for information because I was not familiar with the concept. Initially, I thought gamification simply meant using learning objects or media

to help children learn. After reading more about it, I realized that gamification also involves elements such as points, badges, levels, and other game mechanics."

Similar perceptions were expressed by Teacher Nu and Teacher Si, who described gamification as *"learning through games."* Likewise, Teacher Ar stated: *"Gamified learning is learning that uses a points system."*

Teacher Fi also acknowledged limited prior knowledge of the concept:

"I have never received any training on gamification. After searching for information online, I understood it as learning through games, such as students competing to complete tasks."

Similarly, Teacher Ti admitted: *"I still do not know much about gamified learning."*

These findings suggest that teachers generally associate gamification with game-based classroom activities rather than with a comprehensive instructional approach that systematically incorporates game design elements to enhance learning. This limited conceptual understanding may hinder the effective implementation of gamification in Indonesian language instruction and highlights the need for professional development programs that strengthen teachers' pedagogical knowledge of gamification.

The findings of the present study are consistent with previous research indicating that teachers' understanding of gamification remains limited. T.H. Hari and Zsoldos-Marchis (2020) reported that only one-third of the respondents had heard of gamification before participating in their study. Although the researchers provided a brief explanation of the concept before conducting the interviews, nearly one-third of the participants still perceived gamification simply as the use of games, learning objects, or card games in classroom instruction. This misconception reflects a limited understanding of gamification as a comprehensive instructional approach. Similarly, [Dehghanzadeh et al. \(2024\)](#) highlighted that, despite the growing academic interest in applying gamification within K–12 education, there is still a lack of comprehensive understanding regarding how gamification can be effectively implemented to enhance students' learning experiences. These findings reinforce the results of the present study, suggesting that strengthening teachers' conceptual and pedagogical understanding of gamification is a prerequisite for its effective integration into Indonesian language learning.

The interview findings indicate that teachers' limited understanding of gamification has hindered its effective use as a pedagogical approach for enhancing students' motivation, engagement, and learning outcomes. As a result, the potential of gamification as an innovative instructional strategy has not yet been fully realized in Indonesian language learning. Teacher Ar reflected this limited understanding by stating: *"I do not really understand gamified learning. Is it simply learning that uses a points system?"*

Likewise, Teacher Fi acknowledged limited familiarity with gamification-based teaching materials: *"I am not yet familiar with gamification-based teaching materials."*

Teacher Fi further added: *"I have never heard of this type of teaching material before."*

Similarly, Teacher Ti stated: *"I do not know anything about gamification."*

These findings demonstrate that many teachers are still unfamiliar with both the conceptual foundations of gamification and its practical application in classroom instruction. This limited understanding may constrain teachers' ability to design and implement gamification-based learning activities effectively, highlighting the importance of professional development and training to strengthen teachers' pedagogical competence in integrating gamification into Indonesian language learning

The findings of the present study are supported by previous research indicating that teachers' readiness and competence in implementing gamification remain limited. [Anamalai and Yatim \(2022\)](#), in a study involving 180 elementary school teachers in the South Kinta District, found that teachers' readiness to integrate gamification into classroom instruction was at a moderate level, highlighting the need for proactive support from school administrators. Similarly, [Widyastuti et al. \(2024\)](#) reported that the integration of technology and the implementation of gamification at Ar Raudhah Integrated Islamic Elementary School had not yet been optimized. Although [Rahmadanti \(2021\)](#) found that teachers had begun incorporating gamification into reading comprehension instruction, its implementation remained limited, with teachers primarily utilizing only a few game elements, such as scoreboards and rewards, achieving an implementation level of 76%. Furthermore, [Agustini et al. \(2024\)](#) reported that most teachers continue to face challenges in applying digital learning technologies. The two primary constraints identified were limited understanding of digital literacy in the development of instructional materials and insufficient skills in designing interactive multimedia learning resources. Collectively, these findings reinforce the results of the present study, indicating that teachers require greater pedagogical and technological support to effectively implement gamification-based learning in elementary school classrooms.

Most teachers interviewed believed that incorporating gamification into Indonesian language learning has the potential to increase students' interest and engagement in the learning process. Teacher Fi explained:

"Using gamification makes learning easier for students because they become more interested and actively involved in classroom activities. It also encourages them to learn from various learning resources rather than relying solely on the teacher."

Similarly, Teacher Ar stated:

"Students are naturally interested in gamified learning because children enjoy playing. When learning incorporates a variety of media, such as visual and audiovisual materials, they become more enthusiastic and absorb more knowledge."

Teacher Fa also emphasized the importance of instructional variety: *"In my opinion, using a variety of teaching methods, including gamified learning, can make students more interested in the topics being taught."*

Likewise, Teacher Pr explained:

"Teachers need to use a variety of learning media. If we only use PowerPoint, students quickly become bored. Therefore, I combine it with videos, audio, images, and occasional challenges to keep students interested and engaged."

Reinforcing this perspective, Teacher Fa added: *"Gamified learning can increase students' interest because children naturally enjoy games, earning points, and taking on challenges."*

Overall, the interview findings indicate that teachers perceive gamification as an effective instructional approach for increasing students' interest, participation, and enthusiasm in Indonesian language learning. Teachers believe that incorporating game elements, varied instructional media, and meaningful challenges can create more engaging learning experiences and encourage students to participate more actively in classroom activities.

The positive perceptions expressed by teachers in the present study are supported by previous research demonstrating the effectiveness of gamification in educational settings. Gamification has attracted considerable attention because of its potential to enhance students' motivation, engagement, learning interest, and academic achievement (Li et al., 2023). Likewise, Prados Sánchez et al. (2023) found that students who participated in gamified reading instruction achieved significantly higher reading comprehension scores and developed more positive attitudes toward reading than those taught using conventional instructional approaches. As an instructional approach, gamification integrates game design elements into non-game learning environments to create more engaging and motivating educational experiences. Compared with traditional lecture-based instruction, gamified learning has been shown to increase students' participation, sustain their interest, and encourage active involvement in the learning process. Furthermore, the effective implementation of gamification can create immersive learning environments that promote deeper learning and improve students' language proficiency (Li et al., 2023).

The teachers' perceptions of the benefits of gamification are consistent with previous empirical findings. According to the participants, gamification enriches the teaching and learning process by introducing greater instructional variety, encouraging active student participation, supporting students' personal development, and increasing learning

motivation. These perceptions are supported by research demonstrating that gamification-based digital learning environments can significantly enhance students' engagement, participation, and enthusiasm for learning. Interactive instructional models incorporating gamification have also been shown to improve students' academic performance while increasing their satisfaction with both course content and the learning experience (Rawendy et al., 2017). Fundamentally, gamification refers to the application of game design elements within non-game educational contexts to promote learner engagement and motivation. By incorporating elements such as points, badges, leaderboards, challenges, and progress tracking, gamified learning environments create more enjoyable and immersive learning experiences that encourage sustained participation (Fortuna et al., 2023). Collectively, these findings reinforce the results of the present study, indicating that gamification has considerable potential to improve students' motivation, engagement, and learning outcomes in Indonesian language instruction.

Previous studies have consistently demonstrated the effectiveness of gamification in improving students' reading achievement and learning engagement. Manzano León et al. (2022), using a quasi-experimental pre-test–post-test design with 271 secondary school students, found that students in the gamification group achieved significantly greater improvements in reading performance than those in the control group. These findings provide empirical evidence that gamification can effectively enhance reading skills within educational settings. Furthermore, a variety of gamification-supported learning platforms, including Quizlet, Kahoot!, Duolingo, and Classcraft, have been shown to promote enjoyable, interactive, and student-centred learning experiences (Suryadi et al., 2022). Although educational games are sometimes perceived as merely recreational, research indicates that game-based learning can contribute to knowledge acquisition, cognitive development, fine motor skills, and language learning. In the context of language education, gamification has been successfully implemented to support vocabulary acquisition, grammar practice, reading comprehension, and communicative competence through interactive quizzes, storytelling games, and mobile learning applications (Chen & Kent, 2020; Wang & Tahir, 2020; Clinton-Lisell et al., 2024). Collectively, these findings strengthen the evidence that gamification represents an effective pedagogical approach for creating engaging learning environments and improving students' literacy and language learning outcomes.

Barriers to the Implementation of Gamification-Based Learning

The interview findings revealed several barriers that hinder teachers from implementing gamification in Indonesian language instruction. The most frequently identified challenges included limited understanding of gamification, time constraints, and insufficient technological and instructional resources. Teacher Ti explained:

"I have never used gamification-based teaching materials because I do not yet know how to develop them. In addition, the Indonesian language curriculum covers a substantial amount of content, so my priority is to complete the required syllabus."

Similarly, Teacher Fa stated:

"The main challenges for teachers involve mastering the technology, understanding how to implement gamified activities, and designing gamification that is appropriate for both the learning content and students' abilities."

These findings indicate that the barriers to implementing gamification extend beyond technological limitations. Teachers also face pedagogical challenges related to designing meaningful gamified learning experiences, integrating game elements with curriculum objectives, and managing instructional time effectively. Consequently, successful implementation of gamification requires not only adequate technological infrastructure but also sufficient pedagogical knowledge, practical training, and institutional support to enable teachers to integrate gamification effectively into Indonesian language learning.

Additional barriers to implementing gamification were also identified through the interviews. Teacher Rul explained:

"One challenge is that some gamified activities become repetitive. As a result, some students simply click through the answers without reading the questions because they are more interested in progressing to the next challenge."

Likewise, Teacher Pr emphasized the time required to develop gamified learning materials: *"Teachers need to allocate sufficient time to develop these learning resources. If they are willing and have the time, the results can be very beneficial."*

The interview findings further indicate that many teachers experience difficulty designing essential gamification elements, such as challenges, levels, points, and rewards, because they lack clear and practical examples of how these elements can be effectively integrated into classroom instruction. In addition, administrative responsibilities and curriculum demands leave teachers with limited time to design and implement well-developed gamified learning activities. Limited technological infrastructure, including inadequate access to digital devices and reliable internet connectivity, also constrains the effective implementation of gamification in schools.

These findings are consistent with previous research. [Mårell-Olsson \(2022\)](#) reported that teachers encounter significant challenges in designing and implementing gamified learning activities, particularly because of limited time and insufficient knowledge of gamification design, which is often perceived as more complex than conventional lesson planning. Similarly, [Oprış et al. \(2021\)](#) found that although teachers recognized the educational benefits of gamification, the extensive preparation time required, limited methodological knowledge, and curriculum constraints remained major barriers to its

implementation. Furthermore, inadequate technological resources and school facilities have also been identified as important factors limiting the adoption of gamification in educational settings (Qiao et al., 2023). In the context of English Language Teaching (ELT), Putu Wulantari et al. (2023) likewise reported that technological limitations and pedagogical challenges continue to hinder the effective integration of gamification into classroom practice. Collectively, these findings reinforce the results of the present study, indicating that the successful implementation of gamification depends not only on teachers' pedagogical competence but also on adequate institutional support, sufficient preparation time, and access to appropriate technological infrastructure.

Teachers' Needs for Interactive Gamification-Based Digital Teaching Materials

The interview findings indicate that teachers need interactive gamification-based digital teaching materials that are engaging, practical, and easy to implement in classroom instruction. Participants emphasized the importance of teaching materials that provide varied learning activities, support active student participation, and effectively enhance students' motivation and learning outcomes. In addition, teachers expressed the need for clear implementation guidelines, ready-to-use learning resources, and practical examples demonstrating how gamification elements can be integrated into Indonesian language instruction. Teaching materials that are flexible and easily adaptable to different classroom contexts would enable teachers to design engaging learning experiences without having to develop game mechanics, such as points, levels, challenges, and rewards, from the ground up. Such resources would increase teachers' confidence and consistency in implementing gamification while supporting more effective and motivating Indonesian language learning.

The interview findings further revealed teachers' expectations regarding the characteristics of interactive gamification-based digital teaching materials. Teacher Wi emphasized the importance of providing diverse learning resources: *"I would like teaching materials to include a variety of resources, such as videos and reading materials, because these can increase students' motivation to learn."*

Teacher Si highlighted the motivational value of rewards: *"Students enjoy teaching materials that incorporate rewards, even if the rewards provided by the teacher are simple."*

Teacher Rul explained that gamification should function as more than an assessment tool:

"I hope gamification is not used only for assessment but also as teaching material that supports independent learning. Teachers should act as facilitators while students actively engage in learning and genuinely understand the subject matter rather than simply playing the game. Ideally, the platform should be free to use without usage limits and should allow students to access the learning materials independently instead of requiring continuous teacher control."

Similarly, Teacher Fi stated: *"The teaching materials should be able to attract the interest of all students."* Teacher Fa emphasized that gamification should remain focused on learning objectives: *"Interactive digital teaching materials should increase students' interest in learning, not simply encourage them to play games and lose sight of the intended learning objectives."*

Finally, Teacher Pr highlighted the importance of practicality:

"Ideally, gamification-based teaching materials should be practical and not require excessive preparation time. If the teaching materials and implementation guidelines are already available, they will be much easier for teachers to use."

Overall, the interview findings indicate that teachers expect interactive gamification-based digital teaching materials to be engaging, practical, accessible, and pedagogically meaningful. They emphasized the importance of varied learning resources, appropriate game elements, opportunities for independent learning, ease of implementation, and clear instructional guidance. At the same time, teachers stressed that gamification should support the achievement of learning objectives rather than merely providing entertainment, ensuring that students remain focused on meaningful learning while enjoying the instructional process.

CONCLUSION

Based on the findings, it can be concluded that the reading interest of Phase B elementary school students remains relatively low, highlighting the need for more engaging and interactive instructional approaches. Teacher creativity plays a pivotal role in creating learning environments that foster students' engagement. The findings also reveal that teachers' understanding of gamification remains limited, as it is generally perceived only as a means of creating enjoyable learning activities rather than as a comprehensive instructional approach incorporating specific gamification elements. In addition, limited knowledge, time constraints, and inadequate supporting facilities were identified as the main barriers to implementing gamification in classroom instruction. Consequently, teachers require practical, user-friendly, and curriculum-aligned gamification-based digital teaching materials. These findings underscore the importance of conducting a needs analysis as a fundamental stage in the development of teaching materials, ensuring that the resulting products address authentic classroom needs, accommodate students' learning needs, and are feasible for teachers to implement effectively in instructional practice.

DECLARATIONS

Author Contribution

Hasanawati, D.: Conceptualization, Methodology, Investigation, Formal analysis, Writing - Original Draft, Writing - Review & Editing; **Almasjid, A.:** Conceptualization,

Methodology, Formal analysis, Writing - Review & Editing; **Djufri, E.:** Conceptualization, Methodology, Formal analysis, Writing - Review & Editing.

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The authors declare no conflict of interest.

Declaration of AI Use

We utilized AI throughout the creation of this work. We used ChatGPT solely for discussions regarding supporting citations; whenever we encountered such citations, we followed up by tracing them back to the primary sources.

Additional Information

Not applicable.

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