



(RESEARCH ARTICLE)



## Gamified approaches in enhancing the learner's reading proficiency

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### Abstract

This study explored the effectiveness of gamified approaches in overcoming specific barriers to reading proficiency and tailoring interventions to the unique needs of learners. The researcher investigated the following: factors affecting the reading proficiency level, along comprehension, fluency, and vocabulary; reading proficiency level along the aforementioned variables using the gamified approaches; characteristics of gamified approaches in teaching reading, and measures may be recommended to further improve the gamified approaches in teaching reading. The descriptive research design and two primary research instruments were utilized to gather data and measure the effectiveness of the intervention. First, A survey questionnaire was administered to six Grade 4 teachers of Tabaco North Central Elementary School to determine the factors affecting learners' reading proficiency, particularly along comprehension, fluency, and vocabulary. Second, a reading proficiency assessment was designed and administered to the 37 Grade 4 pupils before and after the intervention.

The use of gamified approaches was found to be an effective innovation in enhancing the learner's reading proficiency after two months of implementation as reflected in the significant number of students achieving Advanced proficiency (56.76%) and the absence of Emerging students. These results align with research that emphasizes the power of both gamification and storytelling in enhancing language learning and literacy. The data also showed a marked improvement in students' vocabulary proficiency after the application of gamified approaches. The majority of students have achieved Advanced proficiency, with a smaller group at the Proficient level and a minimal number of students still at the Developing stage.

**Keywords:** Gamified Approaches; Comprehension; Fluency; Reading Proficiency; Vocabulary Descriptive Research Design

### 1. Introduction

Education plays a critical role in societal progress, shaping future generations and fostering economic and social development. At the core of education lies reading proficiency, a fundamental skill that influences academic success, critical thinking, and lifelong learning. Reading enables learners to acquire knowledge, analyze information, and engage with society effectively. However, despite its importance, reading proficiency remains a global challenge, with disparities in literacy rates due to socio-economic conditions, educational resources, and instructional approaches.

Reading proficiency has been a persistent concern in the Philippines, particularly in public schools. The 2018 Program for International Student Assessment (PISA) ranked the country the lowest in reading comprehension among 79 nations, highlighting significant literacy gaps. Socioeconomic factors, lack of educational resources, and an emphasis on rote memorization over comprehension contribute to this issue.

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The Philippine Informal Reading Inventory Report (Phil IRI) Pre-test result of grade 4 of Tabaco North Central Elementary School revealed that out of 148 learners, only 51 (34.46%) got a passing score, while 97 (65.54%) pupils scored 13 and below. From the 97 learners, 72 fell under the frustration level, 17 belonged to the instructional and only 8 pupils reached the independent level. The data revealed a significant need for intervention in reading instruction in the said school, as a large portion of the learners are not meeting the expected reading benchmarks for their grade level.

Recognizing the urgent need to enhance reading proficiency, this research explores the integration of gamified approaches as an innovative strategy for reading instruction. By incorporating engaging, technology-driven methods, this study aims to improve students' reading skills, foster a deeper understanding of texts, and enhance overall literacy development. The findings will contribute to national educational goals and provide a replicable model for improving reading proficiency in similar learning environments.

### **1.1. Statement of the Problem**

This study seeks to explore the effectiveness of gamified approaches in overcoming specific barriers to reading proficiency. Specifically, it aims to answer the following questions.

- What are the factors affecting the reading proficiency level, along;
  - Comprehension
  - Fluency
  - Vocabulary?
- What is the reading proficiency level along the aforementioned variables using the gamified approaches?
- What are the characteristics of gamified approaches in teaching reading?
- What measures may be recommended to further improve the gamified approaches in teaching reading?

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## **2. Materials and Methods**

### **2.1. Research Design and Methodology**

This study delves into the effectiveness of gamified approaches in enhancing reading proficiency among Grade 4 learners. The research goal is to thoroughly investigate and analyze various effective strategies and instructional interventions aimed at improving students' reading skills.

A descriptive research design was employed. This approach was chosen to provide a comprehensive and detailed account of the phenomenon under investigation. The quantitative aspect of the design involved the systematic collection of numerical data through survey responses, allowing the researcher to identify patterns and measure specific outcomes. Complementing this, the qualitative aspect focused on gathering rich, descriptive information about the respondents' experiences and characteristics, primarily through the researcher's detailed observations. This dual approach allowed for a holistic understanding of the impact of gamified teaching methods, combining measurable results with nuanced insights.

### **2.2. Respondents of the Study**

The respondents for this study were 37 Grade 4 pupils and six Grade 4 teachers of Tabaco North Central Elementary School. The teachers provided insights into the factors influencing learners' reading proficiency, particularly concerning comprehension, fluency, and vocabulary. The pupils participated in a reading proficiency assessment both before and after the intervention, allowing the researcher to gauge their performance directly.

### **2.3. Research Instrument**

To gather data and measure the effectiveness of the intervention, two primary research instruments were utilized. Initially, a survey questionnaire was administered to six Grade 4 teachers. This instrument was crucial in providing diagnostic insights into the existing challenges pupils face in reading and subsequently guided the development of gamified approaches. Secondly, a comprehensive reading proficiency assessment was designed and administered to the Grade 4 pupils. This assessment, comprising three parts—comprehension, vocabulary, and fluency—was conducted both before and after the gamified intervention. The results were then categorized into four levels: Advanced, Proficient, Developing, and Emerging, to effectively determine the pupils' performance and measure their improvement.

## 2.4. Statistical Treatment

To meticulously analyze the collected data, several statistical tools were applied, each serving a specific purpose in understanding the findings.

First is the Descriptive Statistics. This fundamental tool was used to summarize and describe the basic features of the data in the study. It provided simple summaries about the sample and the measures, giving a general overview of the data collected. Another is the Frequency and Percentage Distribution. These tools were employed to present the levels of pupils' reading proficiency across comprehension, fluency, and vocabulary. By showing how often each score or category appeared, and its proportion within the total, it could clearly illustrate the distribution of reading skills among the learners. The Weighted Mean is also computed to determine the degree to which teachers perceived various factors as affecting reading proficiency. This statistical measure allowed the researcher to assign different weights to individual data points, reflecting their relative importance as indicated by the teachers' responses. The mean scores of the tests administered before and after the intervention were also compared to measure the improvement resulting from the gamified integration. By calculating the average scores for both periods, it could quantitatively assess the impact and effectiveness of the gamified approaches on the pupils' reading proficiency.

## 3. Results and Discussion

### 3.1. Reading Proficiency Level of Grade 4 Pupils using Gamified Approaches

This section presented the results and analysis of the data gathered to determine how gamified instruction and digital storytelling influenced the reading abilities of Grade 4 pupils.

**Table 1** Reading Proficiency Level Along Comprehension

Indicators	Number of pupils	Percentage
Advanced – Demonstrate strong comprehension across literal, inferential, and critical questions; analyze themes, make predictions, and connect the story to broader contexts, showing mastery of higher-order thinking skills	21	56.76%
Proficient – Display solid comprehension, though they occasionally required scaffolding when analyzing input meanings; answer most literal and inferential questions with ease but sometimes struggled with critical and integrative tasks	14	37.84%
Developing – Recall basic facts from the story but had difficulty with drawing inferences, connecting ideas and analyzing cause-and-effect relationships; their understanding was limited for surface-level details	2	5.40%
Emerging – Struggle with basic recalling; had limited vocabulary and often disengaged during reading tasks	0	0%
TOTAL	37	100%

Table 1 showed the positive effects of gamified approaches on reading comprehension, reflected in the significant number of students achieving Advanced proficiency (56.76%) and the absence of Emerging students. These results align with research that emphasizes the power of both gamification and storytelling in enhancing language learning and literacy.

The results revealed that learners who reached the Advanced level (56.76%) demonstrated strong comprehension across literal, inferential, and critical questions. They were able to analyze themes, make predictions, and connect the story to broader contexts, showing mastery of higher-order thinking skills. This was made possible through the integration of Duolingo's gamified vocabulary and grammar drills, which strengthened their language foundation, and Storyline Online, which provided fluent models and expressive storytelling. During the lesson, critical questioning and retelling activities further supported their ability to process texts at a deeper level.

The lesson prepared for this component, which used the story "The Mystery of the Missing Marbles," followed a structured sequence. A pre-reading activity introduced key vocabulary through Duolingo's gamified drills, allowing

learners to preview and practice unfamiliar words. During the reading stage, the class watched and listened to the story through Storyline Online while following along with the printed text. Comprehension was reinforced by asking prediction and inference questions at key points in the story. Finally, post-reading activities included answering literal, inferential, and critical questions, retelling the story, and even creating alternative endings. Learners earned points and badges for participation and correct answers, making the lesson interactive and motivating. This multi-layered design ensured that Emerging learners received strong scaffolding, developing learners gained confidence through structured support, Proficient learners deepened their understanding with reflection tasks, and Advanced learners extended their thinking through critical and creative activities.

**Table 2** Reading Proficiency Level along Vocabulary

Indicators	Number of pupils	Percentage
Advanced – Recognize, understand, and use words accurately in strong various contexts.	24	64.86%
Proficient – Use context clues and recognize familiar words but sometimes struggled with abstract or less frequently encountered vocabulary.	12	32.44%
Developing – Indicate limited vocabulary knowledge and difficulty in applying words effectively during reading tasks	1	2.70%
Emerging – Struggle with basic understanding of vocabulary words	0	0%
TOTAL	37	100%

Table 2 presented that majority of learners reached the Advanced level (64.86%), reflecting their ability to recognize, understand, and use words accurately in various contexts. These students demonstrated strong word knowledge and could apply vocabulary effectively in comprehension and expression. Their advancement was supported by Duolingo's adaptive exercises, which reinforced vocabulary through repeated exposure and contextual practice, and by storytelling activities, which presented new words in meaningful narratives. The combination of gamified practice and story-based learning allowed these learners to internalize vocabulary more deeply, leading to mastery.

The lesson designed for this component included a pre-reading vocabulary enrichment activity, where students engaged with Duolingo to preview and practice unfamiliar words such as speckled, nestled, and curious. During the reading phase, these words appeared naturally within the story, and learners were asked to identify and discuss their meanings in context. After reading, learners participated in vocabulary games such as word-matching, sentence-construction, and retelling using newly learned terms. The gamified reinforcement, combined with contextual storytelling, ensured that vocabulary was not only memorized but also actively applied. This approach effectively addressed the needs of learners across all proficiency levels: it reinforced mastery for Advanced learners, supported growth for Proficient learners, scaffolded Developing learners, and eliminated the possibility of students remaining at the Emerging stage.

**Table 3** Reading Proficiency Level along Fluency

Indicators	Number of pupils	Percentage
Advanced – Can read smoothly and with accuracy and demonstrate a high level of fluency in reading	17	45.95%
Proficient – Read with good accuracy and pacing but may not yet have reached the highest level of fluency	16	43.24%
Developing – Struggle with reading speed, expression, or consistency in word recognition	4	10.81%
Emerging – Struggle with basic stages of fluency	0	0%
TOTAL	37	100%

Table 3 showed a promising outcome following the implementation of Gamified Duolingo and Storytelling Approaches. Most students, 45.95% (17 out of 37), are classified as Advanced, demonstrating a high level of fluency in their reading. This suggests that a significant portion of the students can read smoothly and with accuracy, both of which are critical components of reading fluency (Hudson et al., 2005)<sup>1</sup>. The use of gamification is particularly effective in improving fluency, as it encourages students to repeatedly practice reading tasks, reinforcing automaticity and fluidity in language processing (Deterding et al., 2011)<sup>2</sup>.

Based on these findings, the gamified approaches effectively enhanced students' reading proficiency transitioning them from frustration-level reading to instructional and independent levels. This supports the research by Rasinski (2020)<sup>3</sup>, on Guided Reading strategies, which emphasize the importance of structured small - group reading instruction and interactive text analysis in improving literacy skills. The significant increase in reading comprehension and fluency suggests that a systematic, discussion-based approach enhances students' ability to decode, understand, and analyze texts effectively. These results validate previous studies of Duke & Pearson (2002)<sup>4</sup>, indicating that active engagement with texts, combined with guided discussions, fosters better retention and comprehension. To sustain the implementation of the Gamified Approaches, having proven effective should be incorporated into regular reading instruction to maintain and further enhance literacy growth.

According to Snow (2002)<sup>5</sup>, support to Instructional-Level Readers should also be provided while most students reached independent reading levels, those who remained at the instructional level require additional guided reading sessions and one-on-one intervention to accelerate their progress. Rasinski (2020), said that since fluency improvements were observed but still varied, strategies such as repeated reading, peer-assisted learning, and reader's theater should be emphasized to further develop reading flow and expression. Furthermore, as Gambrell and Morrow, (2015)<sup>6</sup> asserted, through regular assessment and monitoring, Phil IRI assessments should be conducted to track students' progress and make necessary instructional adjustments. Longitudinal studies could further explore the long-term impact of guided reading approaches on literacy development.

### **3.2. Characteristics / Features of Gamified Approaches**

Reading proficiency is a fundamental skill that underpins academic success, yet many students continue to struggle with essential components of reading, such as vocabulary development, reading fluency, and text comprehension. In particular, limited vocabulary knowledge hampers students' ability to understand what they read, while poor fluency disrupts the flow of reading, making comprehension even more difficult.

To respond to this challenge, the gamified approaches — combining Gamified, Duolingo, and Storyline Online — were developed as an intervention. This approach leverages the motivational power of gamification and the cognitive benefits of narrative structures to create a more dynamic and effective reading experience. By integrating technology-based vocabulary building with story-driven comprehension activities and repeated fluency practice, Gamified Learning seeks to create a comprehensive and enjoyable learning environment that addresses the persistent gaps in vocabulary, fluency, and comprehension among students.

### **3.3. Characteristics and Features of Gamified Learning**

The gamified approaches, which combine Gamified, Duolingo, and Storyline Online, present an innovative and comprehensive method for improving students' vocabulary, fluency, and comprehension. One major feature of gamified is its gamified learning environment. Through the use of points, badges, and rewards, students experience immediate reinforcement that motivates them to persist in reading tasks, aligning with Thorndike's Law of Effect, which states that behaviors followed by positive outcomes are more likely to be repeated. Gamified progress tracking and level advancement promote self-directed learning, while immediate feedback strengthens practice, consistent with the Law of Exercise.

Another significant feature is the adaptive vocabulary building embedded in the approach. Gamified approach customizes vocabulary lists based on each learner's reading proficiency, ensuring that tasks remain within the learner's Zone of Proximal Development which is based on Vygotsky (1978)<sup>7</sup>. Vocabulary is introduced within the rich context of stories rather than in isolation, helping students understand not just word meanings but also word usage, which research by Beck, McKeown, and Kucan (2002)<sup>8</sup> emphasizes as critical for deep vocabulary learning.

The innovations in this study combined the use of cellphones (CPs), Smart TVs, Duolingo, and Storyline Online into a single gamified approach that effectively enhanced vocabulary, fluency, and comprehension. CPs allowed students to access Duolingo individually, where they practiced vocabulary through adaptive, game-like drills with points, badges, and immediate feedback, turning idle time into productive learning moments. Smart TVs were used in class to project

Storyline Online videos, ensuring that all learners could watch professional read-aloud with expressive intonation and visuals that modeled fluency and comprehension strategies in a shared environment. The “chain of Storyline Online” structured activities from listening, to identifying target vocabulary, to answering literal and inferential questions, and finally retelling or creating alternative endings, reinforcing skills across multiple exposures.

Moreover, Duolingo strengthened word recognition and retention, while storytelling provided meaningful contexts that deepened understanding and critical thinking. In conclusion, integrating CPs for personalized practice, Smart TVs for collective engagement, and storytelling for contextual application created a seamless and dynamic learning experience that addressed limited language exposure, weak fluency, and poor comprehension strategies, ultimately moving the majority of learners to Advanced and Proficient levels with none left at the Emerging stage.

The findings and supporting literature clearly demonstrate that the gamified approach, which integrates Gamified, Duolingo and Storyline Online, is an effective intervention for improving students’ reading proficiency, specifically in the areas of vocabulary, fluency, and comprehension. By combining the motivational features of gamification with the cognitive and emotional engagement provided by storytelling, gamified addresses traditional gaps in reading instruction. It leverages the Laws of Learning, particularly the Law of Effect and the Law of Exercise, to encourage consistent and meaningful practice, while also reduced affective barriers to learning.

Furthermore, the approach’s alignment with Vygotsky’s Zone of Proximal Development and its emphasis on meaningful vocabulary and comprehension tasks promote deeper learning and retention. The overall evidence suggests that gamified approach creates a dynamic, learner-centered environment that leads to significant improvements in reading proficiency.

Based on the positive outcomes observed, by combining the motivational features of gamification with the cognitive and emotional engagement provided by storytelling, the gamified approach addresses traditional gaps in reading instruction. It leverages the Laws of Learning, particularly the Law of Effect and the Law of Exercise, to encourage consistent and meaningful practice, while also reducing affective barriers to learning.

Teachers should also provide regular opportunities for students to engage in interactive storytelling and self-monitoring activities to enhance fluency and comprehension skills further.

### **3.4. Implications/Insights**

#### *3.4.1. Theoretical Implications*

The study contributes to the growing body of research on technology-enhanced learning, particularly in reading instruction. The findings align with Vygotsky’s sociocultural theory, which emphasized the role of tools and social interactions in learning. Gamified tools serve as mediating instruments that support learners, particularly struggling readers, by providing interactive, scaffolded, and adaptive learning experiences.

Additionally, the study supports constructivist learning theories, which suggest that learners actively construct knowledge through interaction with digital tools. The findings suggest that gamification and personalized learning strategies embedded in gamified tools can enhance learner engagement and motivation, reinforcing the idea that technology must be contextually relevant and adaptable to individual needs of the students.

However, the study also underscores the limitations of technology-dependent instruction, particularly in low-resource environments. These results suggest that future theoretical discussions on digital literacy and reading interventions should incorporate equity-based frameworks that address disparities in access to technology and teacher readiness.

### **3.5. Practical Implications**

The practical implications of this study underscore the necessity for comprehensive digital integration strategies in education. While gamified tools have the potential to enhance reading proficiency, their effectiveness is contingent upon factors such as technological advancements, teacher readiness, and student adaptability.

#### *3.5.1. Teacher Training and Digital Literacy Development*

A significant finding of the study is that many educators lack the requisite training to effectively integrate gamified tools into their teaching practices. This underscores the need for professional development programs that are structured, continuous, and hands-on, focusing on digital literacy for teachers, pedagogical strategies for technology integration,

and adaptive learning approaches for diverse learners. Research by Foulger et al., (2020)<sup>9</sup>, indicates that such professional development is crucial for building teachers' digital capabilities, enabling them to utilize emerging technologies effectively in their classrooms. Additionally, establishing peer mentoring programs and professional learning communities can provide ongoing support for educators, fostering a collaborative environment that encourages the sharing of best practices and continuous improvement.

### 3.5.2. Curriculum and Instructional Adjustments

To maximize the efficacy of gamified tools, curriculum modifications are essential. Integrating these tools into reading interventions and remedial programs can offer targeted support to struggling learners. Developing adaptive lesson plans that leverage digital resources, while maintaining traditional literacy instructions, can create a more inclusive and effective learning environment. Implementing blended learning strategies that balance digital and face-to-face instruction ensures that students receive both technological support and direct teacher guidance, catering to various learning preferences and needs.

### 3.5.3. Enhancing Student Engagement

The study suggested that while gamified approaches can aid struggling readers, some students, particularly those with short attention spans, may struggle to remain engaged. To address this, schools should employ gamification techniques, such as digital rewards and progress tracking, to boost student motivation and active participation. Studies by Alsawaier (2018)<sup>10</sup>, have shown that gamification can significantly enhance learning engagement by incorporating game-like elements into educational activities. Furthermore, implementing adaptive learning strategies that personalize instruction based on a student's progress and engagement level can cater to individual learning needs, ensuring that all students benefit from the gamified approaches.

In summary, the successful implementation of gamified tools requires a multidisciplinary approach that includes robust teacher training, thoughtful curriculum design, and strategies to enhance student engagement. By addressing these areas, educational institutions can harness the full potential of gamified tools to improve reading proficiency among learners.

## 3.6. Addressing Technological Barriers

Many schools, particularly in rural and underprivileged areas, face significant challenges related to internet connectivity, access to digital devices, and software availability, which hinder the effective implementation of gamified approaches. According to Miller (2020)<sup>11</sup>, to address these barriers, educational institutions and policymakers must advocate for government and private sector support in funding digital infrastructure improvements, ensuring that all students have the necessary technological resources for learning. Furthermore, they emphasized that developing school-based technology-sharing initiatives can promote equal access to devices, allowing students from disadvantaged backgrounds to participate in digital literacy programs and enhance their reading proficiency. These measures are essential to creating an inclusive learning environment that bridges the digital divide and ensures equitable access to education.

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## 4. Conclusion

The insights gained from this study reinforce the importance of a complex approach in implementing gamified tools for reading proficiency. While these tools hold great potential in supporting learners, their success depends on technological readiness, teacher competency, and student engagement strategies. By addressing these challenges through strategic interventions, professional development, and infrastructure improvements, gamified approaches can be effectively integrated into educational settings to enhance literacy and learning outcomes.

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## Compliance with ethical standards

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#### *Disclosure of conflict of interest*

I declare that I have no conflicts of interest related to this research. I have no personal or financial relationships that could influence my work.

#### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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