

The Effect of Gamification on Primary Students' Malay Reading Comprehension

Felicia Nasip¹ , Norehan Zulkipli^{2*} 

¹Faculty of Cognitive Sciences and Human Development, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia.

Email: felicianasip2022@gmail.com

²Faculty of Cognitive Sciences and Human Development, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia.

Email: znorehan@unimas.my

CORRESPONDING AUTHOR (*):

Norehan Zulkipli
(znorehan@unimas.my)

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ABSTRACT

Reading is a fundamental ability crucial for everyday life, including learning. Research on reading comprehension has intrigued scholars, resulting in various studies to uncover effective strategies for enhancing students' reading comprehension. In the *Bahasa Melayu* curriculum of Malaysian education, fostering students' reading and comprehension skills is crucial. This study aims to examine whether students' Malay reading comprehension could be enhanced using gamification methods. This study employed an experimental design, and a total of 74 students, aged between 10 and 11 years and encompassing both males and females, participated in the study. The participants were from primary schools located in a rural district. An independent-sample t-test analysis revealed a significant difference in Malay reading comprehension among participants exposed to different instructional methods. Specifically, participants who engaged with the gamification method outperformed their counterparts who adhered to the traditional method. These findings offer valuable insights for educators aiming to incorporate gamification into reading comprehension instruction. The implications of this study's findings extend to educational practitioners, providing guidance on the integration of gamification into the reading comprehension curriculum. Furthermore, these results hold the potential to inform the Ministry of Education in Malaysia, supporting the advancement of gamification-based learning initiatives.

Contribution/Originality: This study contributes to the existing literature by examining the impact of gamification on Malay reading comprehension among primary students. It investigates whether gamification can enhance students' reading comprehension skill more effectively than traditional methods, offering new insights into how gamification strategies can effectively improve reading comprehension.

1. Introduction

Reading is a fundamental ability that holds importance in many aspects of everyday life, including learning. As argued by [Alsaeedi et al. \(2021\)](#), reading is such an integral part of our existence that it becomes difficult to imagine life without it. The process of reading demands mental and cognitive work ([Nero & Zulkipli, 2020](#)). The development of strong reading comprehension abilities is crucial for students to become proficient readers ([Latif et al., 2021](#)). Reading comprehension entails comprehending written content, and prioritising reading education is critical for improving it ([Yahya, 2008](#)). The ability to understand the content of reading materials among students allows them to familiarise themselves with the reading process and develop the ability to understand the text ([Azlinda, 2018](#)). This allows students to fully understand what they are reading—a process of assimilating information from reading materials and retaining it in memory for future use ([Azlinda, 2018](#)).

In the context of the Malay language, comprehension plays a crucial role in students' reading development, involving understanding and deriving meaning from written texts. This proficiency is essential for overall language mastery and academic achievement. According to [Azlinda \(2018\)](#), a primary factor in reading comprehension in the Malay language is the student's ability to understand and analyse the material they are reading. The aim of reading skills is to enable students to enhance their vocabulary, gather and process information, and foster an interest in reading. The same concept is also applied to English reading comprehension, which pertains to understanding the fundamental concepts a text's author aims to convey through words ([Krishnamoorthy, 2021](#)).

Among the objectives of the Malay language subject in the Malaysian curriculum is the cultivation of students' reading and comprehension skills. Specifically, by implementing the Malay language syllabus, it is anticipated that students will master reading comprehension skills. According to *The Standards-Based Curriculum for Primary Schools (Bahagian Pembangunan Kurikulum, 2019)*, for primary school level, proficiency in the Malay language requires students to attain skills such as listening, speaking, reading, and writing. The core objective of *The Standards-Based Curriculum for Primary Schools Bahasa Melayu (Bahagian Pembangunan Kurikulum, 2019)*, particularly concerning reading skills, is that by the end of Year 6, students should be proficient in reading and comprehending various texts or multimedia content to form judgments and make decisions. Students are also expected to be able to read and analyse textual material to construct summaries and present literary and non-literary works using a range of delivery techniques. This emphasises that reading comprehension is a skill that students are expected to master.

Research has indicated that reading difficulties in the Malay language among Malaysian primary school children are caused by various factors, including individual, psychological, teacher-teaching approaches, teaching time, and environmental factors ([Balanadam & Jamaluddin, 2021](#)). [Balanadam and Jamaluddin \(2021\)](#) ideas are in accordance with the findings by [Jamian \(2021\)](#) study, which found that the main problem associated with reading skills in Malay language is that students face difficulty in comprehending the content of the text they have read, as well as struggling to grasp the meaning of the sentences they encounter. When students lack comprehension abilities, it frequently leads to their failure to grasp a particular text, which can have a detrimental impact on their grades and general academic performance ([Goyi et al., 2021](#)). In the context of Malaysia, it is important to recognise that while Malay is the national language and the

medium of instruction in national schools (*Sekolah Kebangsaan*), there are other schools in Malaysia attended by students from diverse ethnic communities, for whom Malay might not be their first language. The intricacies of learning a second language have implications for the process, and one of the primary aims of teaching children to read effectively is to cultivate their comprehension skills (Dwiningtiyas et al., 2020). The research conducted by Yueh Wei et al. (2020) reveals that non-native students faced challenges in terms of acquiring proficient reading skills. These challenges encompassed incorrect pronunciation of specific words, difficulties comprehending narrative texts, and a lack of awareness regarding the importance of reading skills. Consequently, this issue can lead to an individual's inability to master reading skills, thereby hindering their capacity to develop other skills like writing, communication, and performing well in class (Moses & Mohamad, 2019).

Reading strategies are crucial in enhancing students' reading comprehension skills (Gilakjani & Sabouri, 2016). Several reading strategies have been demonstrated to enhance reading comprehension, including skimming and scanning techniques (Fauzi, 2018), brainstorming (Dwiningtiyas et al., 2020), reading-aloud approaches (Dwiningtiyas et al., 2020; Sajid & Hafizoah, 2019), question and answer tactics (Arwila, 2022; Dwiningtiyas et al., 2020), metacognitive reading strategies (Acmed-Ismael, 2021; Cola et al., 2021; Lian & Aziz, 2020), vocabulary journal approach (Lai & Dhamotharan, 2019), and the reciprocal teaching technique (Palincsar & Brown, 1984; Wibisono et al., 2019). In addition, it is argued that engaging activities and strategies such as gamification also play a critical role in enhancing students' reading comprehension (Azlinda, 2018). In the recent past years, gamification is increasingly seen as a strategy to enhance learning engagement and enjoyment (Alsawaier, 2018; Rincón-Flores et al., 2018; Smiderle et al., 2020). It creates a fun, motivated, and engaging learning environment (Ghaban & Hendley, 2019; Saleem et al., 2022), boosting motivation and engagement (Alsawaier, 2018; Alzuhair & Alkhuzaim, 2022; Hu, 2019; Venter, 2020), improving learning outcomes (Páez-Quinde et al., 2022), and driving behavioral change (Kim & Castelli, 2021). The application of gamification in education to enhance motivation and outcomes is on the rise (Legaki et al., 2020). Incorporating happiness elements, feedback, teamwork, and active participation from the beginning of the game yields positive results (Ramirez, 2020). Öztürk and Korkmaz (2020) argued that educational games improve academics, attitudes, and cooperation. Studies consistently observed gamification's engagement benefits, with Bouchrika et al. (2021) emphasising interactivity and May (2021) noting improved engagement, self-efficacy, and enjoyment. These findings highlighted gamification's value in enriching learning experiences. One of the theories that underpin gamification is the self-determination theory (Ryan & Deci, 2017), which comprehensively explores factors supporting intrinsic and extrinsic motivation, impacting educational environments (Ryan & Deci, 2020). Intrinsic motivation arises from genuine interest and engagement in learning, fostering effective learning when students are enthusiastic about the subject. Extrinsic motivators, like points or badges, are external incentives driving certain actions. Central to this are three needs: autonomy, competence, and relatedness (Vasconcellos et al., 2020). In addition, autonomy involves willingness in activities, and competence in interacting with the world (Ryan & Deci, 2017).

The traditional approach prompts students to read a passage and then answer related questions. However, as argued in the paper by Guerreiro et al. (2022), this method may inadvertently measure extraneous constructs such as working memory, attention, and reading ability. A common teaching and learning method for enhancing Malay reading

comprehension involves guided reading sessions. During these sessions, teachers provide instructions and ask questions to assess students' comprehension. Various activities are then incorporated to focus on specific reading skills such as identifying main ideas, making inferences, and understanding vocabulary. Typically, standardised tests or quizzes are also used to assess students' ability to comprehend written material and effectively apply reading strategies. While the traditional method has been widely used in teaching Malay reading comprehension, there is a rising awareness of the need for more engaging approaches that foster deeper comprehension abilities.

Research has shown that gamification improves reading comprehension when learning English as a second language (Abu Sa'aleek & Baniabdelrahman, 2020). Nitiasih and Budiarta (2021) conducted a study focusing on gamification based on Balinese local stories, which also demonstrated an enhancement in students' English reading comprehension. The study employed gamification as a medium for teaching reading comprehension. In addition, Sari et al. (2022) used Kahoot! to effectively engaging students in learning activities to enhance the students' English reading comprehension, increasing motivation and engagement. These studies collectively underscore that gamification is an effective instructional approach for enhancing students' reading comprehension skills.

Concerning research on Malay reading comprehension, the studies are limited, and the use of gamification remains unexplored. In a study by Azlinda (2018), Malay reading comprehension among adolescents was investigated using the metacognitive strategy, demonstrating that employing this strategy outperforms the reading comprehension level reached by traditional methods. In another study, Goyi et al. (2021) examined the impact of reading methods on textual content and vocabulary in Malay as a second language (L2). The study utilised questionnaires focused on cognitive and metacognitive strategies, in addition to conducting two reading comprehension tests centred on L2 textual content and vocabulary. The results revealed that the utilisation of cognitive techniques aids L2 readers in comprehending translations from their first language while reading in L2, thereby enhancing overall comprehension. Both Azlinda (2018) and Goyi et al.'s (2021) approaches improved Malay reading comprehension. However, it is important to note that the effectiveness of teaching reading comprehension strategies can vary based on factors like prior knowledge text complexity, environment, anxiety, motivation, word decoding, and medical issues (Gilakjani & Sabouri, 2016).

In the context of the current research, it is noteworthy that despite Malay being the national language, many students in the studied area have Bidayuh as their first language. Although they may possess proficient speaking, reading, and writing skills in their native language, they struggle with Malay reading comprehension due to challenges in understanding sentence structures, Malay vocabulary, and comprehending the text. Addressing these issues effectively is critical for improving Malay reading comprehension, which is a fundamental goal of the Standards-Based Curriculum for Primary Schools, which emphasises students' abilities to grasp text, assess various works, and present them using various ways. Given the importance of mastering Malay reading comprehension among primary students and the potential of gamification to engage and motivate students while reading, particularly in the Malay language, more research is warranted. Hence, this study seeks to determine whether the gamification method can enhance students' Malay reading comprehension more effectively than the traditional approach.

2. Research Method

2.1. Design

This study employed a quantitative approach, specifically utilising an experimental design that included both an experimental group and a control group. The experimental design was chosen because it allows for the controlled manipulation of variables and enables the researchers to draw causal conclusions about the effectiveness of different instructional approaches.

2.2. Participants

The targeted population for this study was primary school students, specifically those in Primary 4 and 5, who are able to read Malay text appropriate to their cognitive level. In the present study, 74 students aged 10 to 11 were selected from four local rural primary schools through convenience sampling. Each experimental and control group consisted of 37 participants. Participants were included based on their availability and accessibility within the four local rural primary schools. Specifically, students from the first school (comprising 22 students) and the second school (comprising 15 students) constituted Group A, who received the treatment. On the other hand, students from the third school (with 20 students) and the fourth school (with 17 students) formed Group B, the control group. The justification for selecting participants from 4 schools was due to the low enrollment of students in each school and the researcher being based in one of the rural areas. In this study, all participants had a similar pre-existing knowledge of the Malay language, as verified by their teachers. They had already learned to answer reading comprehension questions during their fourth year of primary education. Additionally, the participants were anticipated to have the capacity to evaluate and structure fundamental information effectively.

2.3. Materials

This section discusses the materials used in the present study, which were i) learning materials for experimental group, ii) learning materials for control group, and iii) Reading comprehension question test for both groups. All the learning materials used in the present study (both in the study and test phases) were in line with the learning objectives of the *Dokumen Standard Kurikulum dan Pentaksiran (DSKP) Bahasa Melayu Tahun 5*. The responsibility of developing gamification activities and corresponding handouts rested with the researcher. These materials were guided by the *Dokumen Standard Kurikulum dan Pentaksiran (DSKP) Bahasa Melayu Tahun 5* and underwent a rigorous validation process involving a panel of three expert *Bahasa Melayu* teachers, each with over 10 years of experience. Among them, two held the designation of *Ketua Panitia Bahasa Melayu*, and all had attended courses related to the examination of Malay language question papers.

2.3.1. The Learning Materials for Experimental Group

During the study phase, instructional materials for reading comprehension tasks for the experimental groups was extracted from the activity book (*Modul Aktiviti Setara Standard*). The chosen text was employed to deliver reading comprehension lessons to the students in the experimental group. For the experimental group, the distributed materials comprised a total of seven (7) activities, detailed in [Table 1](#). Each activity mentioned in the provided handouts also integrated gamification elements and game

mechanics. Handouts 1-5 were devised and executed in groups of three. The rationale behind group-based execution was to encourage collaborative work, idea sharing, and mutual learning among all students. Handouts 6-7, on the other hand, were provided to evaluate students' ability in addressing comprehension questions. Each assigned handout carried a mark that would be converted into a point (star). The group with the highest accumulation of stars would be deemed the winner. It's noteworthy that the researcher would also utilise ClassDojo as a platform to record points. Importantly, only students in the experimental class would be taught using gamification during the reading comprehension process as a part of the research treatment.

Table 1: Handouts on Gamification activities

Handout number	Activities	Task	Game element & mechanics
1	Find and underline a new vocabulary. Conclude the text Opinion	Students are to read silently (text/passage) about the title, find the meaning of new vocabulary, conclude the text or passage, and give an opinion. Each of these steps is done by putting a timer.	Goals – Complete the task and get a reward (Point-star). Reward – Points will be collected through <i>ClassDojo</i> Challenge (competition).
2	Find the important information about the text Complete the Quest	Find important information about the text. Students are required to complete the assignment within the specified time frame.	Goals – Complete the task and get a reward (Point). Reward – Points will be collected through <i>ClassDojo</i> . Challenge (competition)
3	Find the important information about the text Code Morse Treasure Hunt	Find important information about the text. Students are required to complete the assignment within the specified time frame.	The group that completed the task first will be given a reward (star). Goals – Complete the task and get a reward. Reward – Points will be collected through <i>ClassDojo</i> . Challenge (competition)
4	i-Think Map Completion	Present the important information by using an i-Think Map.	Each pair need to present their idea. Other groups will vote on the best presentation. Goals – Complete the task and get a reward. Reward – Points will be collected through <i>ClassDojo</i> . Challenge (competition)
5	Online question-setting	Using an online gamification platform. The online platform is <i>Quizizz</i> .	Goals – Complete the task and get a reward.
6	Question-setting	Answer questions.	Goals – Complete the task and get a reward. Reward – Points will be collected through <i>ClassDojo</i> .

7	Question-setting	Exchange and answer questions in pair.	Goals – Complete the task and get a reward. Reward – Points will be collected through <i>ClassDojo</i> .
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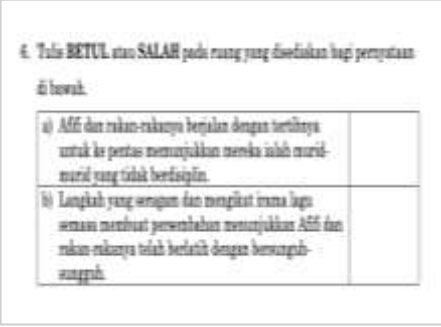
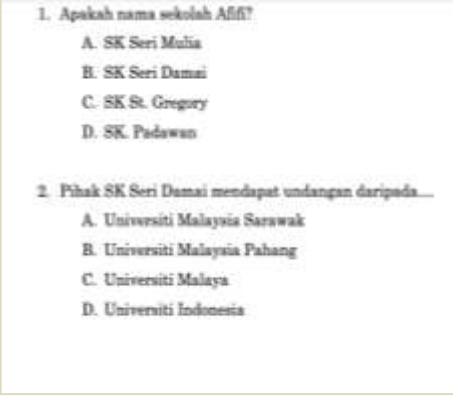
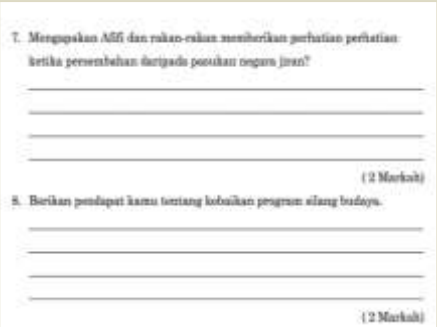
2.3.2. The Learning Materials for Control Group

Unlike the learning activities for the experimental group, students in the control group were taught using examples and exercises found in textbooks as learning materials in the classroom. The students were also provided with handouts similar to those given to the experimental group for thorough reading. However, the use of textbooks and the provided handouts did not include any activities or game element integrations. They were required to individually answer the questions, and the teacher assessed their answers.

2.3.3. Reading Comprehension Question Test

During the test phase, reading comprehension was used to ascertain the impact of gamification learning on students' reading comprehension. The questions (see sample of questions in Figure 1) were formulated based on the Year Five Standard Curriculum Performance Document for the Malay language curriculum.

Figure 1: Sample of Test Question

<p>Test question</p>  <p style="text-align: center;">True / False Question</p> 	<p>Multiple-choice questions (MCQs)</p>  <p style="text-align: center;">Multi-choice structures (MCS)</p> 
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The test encompassed a total of eight questions, comprising five multiple-choice questions (MCQs), one true/false question, and two questions employing multi-choice structures (MCS). These questions were categorized into three levels of reading comprehension: literal, inferential, and critical.

According to [DaCosta and Gutierrez \(2020\)](#), literal comprehension refers to an understanding of the straightforward meaning of the text, such as facts, vocabulary, dates, times, and locations. Inferential comprehension refers to the combination of the students' literal comprehension of the text with their own knowledge and intuitions to draw conclusions. Critical comprehension involves students analyzing and evaluating the text while taking into account the author's intentions, the viability of the arguments made, and any potential biases or textual limitations. In the current study, the indicators of literal comprehension involve skimming the texts for the main ideas, scanning texts for specific information, and deducing the definitions of unfamiliar terms. Students can find an answer based on the facts stated in the text. In contrast, inferential comprehension in this study refers to the student's capacity to interpret and comprehend the text's suggested meaning in addition to what is expressly stated. For instance, they need to draw a conclusion and choose either a true or false answer. For critical comprehension questions, students need to give an opinion and an idea based on information from any source, including facts within the text (see [Table 2](#)).

Table 2: Reading Comprehension Test Questions

Question	Item number	Mark	Category Level of Reading Comprehension
Multiple-choice questions (MCQs),	1,2,3,4,5	1 Total: 5	1,2,3,4 – Literal 5 – Inferential
True / False Questions	6	1	inferential
Multi-choice structures (MCS).	7,8	2 Total: 4	Critical

2.4. Procedures

Prior to conducting the study, the researcher acquired formal permission from the Ministry of Education, the Jabatan Pendidikan Negeri Sarawak, and the Guru Besar of the selected schools. Participants were provided with information about the study and requested to provide their informed consent. Participation in the study was entirely voluntary, and participants were permitted to withdraw at any moment. To protect participant identities, the chosen school remained anonymous and was identified as Group A and Group B in the following discussions. Teachers who taught the experiment group were given training and guidance on conducting the study, especially on the rules and procedure of the learning (gamification method) in the classroom, as it helps to ensure consistency in terms of instruction delivered to the participants.

The participants involved were thoroughly briefed on the research objectives, procedures, and any relevant information or risks during the study. The study was carried out over two weeks. As per [Etikan et al. \(2016\)](#), treatment refers to the intervention applied by a researcher to experimental units. During the initial learning phase, the control group underwent conventional instruction involving activities like reading text, discussing its content, students answering questions, and teachers evaluating their responses. Meanwhile, the experimental group adopted a gamification approach. Under the conventional method, students were given the same worksheet (handouts 1-7), which they carefully read. Subsequently, the teacher posed questions about the text's content, briefly explaining the answering approach. Students will answer to these questions, and the teacher assessed their responses. In contrast, the gamification learning method

involved incorporating gaming elements and mechanics. It also encouraged collaborative group learning, allowing students to work together on assignments. The incorporation of these game elements not only promoted discussions and idea exchanges among students and motivated them to actively pursue victory within the gaming framework.

The teaching and learning employed the gamification method during the study phase for the experimental group. Each learning (treatment) session was conducted over one hour, comprising 30-45 minutes of active teaching and learning. The research will be administered closely, and the teacher will teach according to the set lesson plan. Following the completion of each learning session, all students in both the treatment group (Group A) and the control group (Group B) were administered test questions by the researcher (refer to [Figure 1](#) for a sample of test questions). This test aimed to assess their ability to comprehend the text. Participants were allotted 30 minutes to answer all the questions on the test.

3. Result and Discussion

The study aimed to investigate whether there is any significant difference in students' Malay reading comprehension when gamification is used instead of the traditional method. To answer this question, the researchers calculated the t-test, means, and standard deviations of the participant's total scores of reading comprehension. An independent-samples t-test was conducted to compare the total scores of Malay reading comprehension. The results indicated a significant difference in participants' Malay reading comprehension based on different instructional methods, $t(72) = 4.791$, $p = 0.000$. Specifically, participants who used the gamification method for reading comprehension ($M = 7.41$, $SD = 1.589$) outperformed those who used the traditional method ($M = 5.76$, $SD = 1.362$). In this study, the implementation of gamification as a learning strategy was found to be more effective in enhancing proficiency in Malay reading comprehension compared to the traditional method. The observed significant effect suggests that the use of gamification led to higher scores in the treatment group compared to the control group. These findings align with those of other studies ([Zhu et al., 2018](#)) that highlighted the effectiveness of gamification in improving students' reading comprehension, surpassing the traditional method ([Abu Sa'alek & Baniabdelrahman, 2020](#)).

A possible primary factor contributing to the lower scores in the traditional instruction group is that traditional approaches often rely on established pedagogical methods like lectures, textbooks, and teacher-centered activities. Given the emphasis on teacher-directed activities in the educational process, students may not be fully engaged, leading to waning motivation and a higher likelihood of finding the learning process uninteresting while studying Malay reading comprehension. During the study phase, there were seven activities in which the gamification method was employed. The reading comprehension lessons included various activities with specific goals in mind. Students were given a variety of handouts and activities (see [Table 1](#)) to scaffold the student so that they could understand the activities. In every activity, they must complete the goal that they also have to achieve, and the final mark (number of stars) will be recorded as points (reward). These activities were designed to enhance participants' reading comprehension skills and engage them actively in reading tasks. The primary objective was to foster participants' motivation to respond to reading comprehension questions. As a result, these activities played a crucial role in improving the participants' performance in reading comprehension lessons.

For the first activity (as outlined in handout 1), students needed to find and underline unfamiliar vocabulary, summarize the text, and provide an opinion about it. Despite the similarity to the traditional method, game mechanics were integrated into it. By introducing activities that sparked eagerness, students became more engaged, excited about the tasks, more likely to participate, and focused all their attention on the task at hand. This situation facilitated greater concentration on reading and comprehension. This activity not only instilled eagerness to complete the task but also eventually encouraged careful reading to comprehend the passage. Reading carefully helped students connect the text to their prior knowledge, link each paragraph, and summarize the passage using their own understanding.

After activity 1, activities 2 and 3 (as outlined in handouts 2 and 3) required students to identify crucial information from the provided text. Although the objectives of tasks (handouts 2 and 3) shared similarities, they varied in terms of specific activities. In these activities, students were divided into groups of three to complete the tasks while playing. For activity 4 (as outlined in handout 4), students had to present significant information using an i-Think Map. This activity not only enhanced passage comprehension but also honed their thinking skills such as prediction, making connections, visualization, inference, questioning, and summarization. It was also found to improve students' memory, as indicated by [Siang \(2012\)](#). Lastly, activities 5, 6, and 7 (as outlined in handouts 5, 6, and 7) involved setting questions. These activities encouraged students to share their knowledge and test their understanding of the content ([Shamsulbahri & Zulkipli, 2021](#)). All these activities were observed to impact student motivation, alleviate stress during learning, and foster cognitive learning strategies ([Ahmad & Maat, 2022](#)). Past studies are also in line with this notion, indicating that gamification influences behavior change ([Smiderle et al., 2020](#); [Abu Sa'aleek & Baniabdelrahman, 2022](#)). The inclusion of game elements such as challenges, rewards, and leaderboards in the gamification method influenced behavior change. Introducing game elements into activities (such as reading comprehension) tapped into intrinsic motivation, rendering students' behavior more enjoyable and exciting. For instance, students were motivated to actively participate in every activity, displaying interest in incorporating gamification into their educational experiences and a willingness to actively engage in gamified tasks. Anticipating different form of rewards typically elicits positive reactions. Students often express feelings of excitement, happiness, joy, and gratitude when they are offered rewards for exhibiting positive behaviors ([Soo & Lee, 2022](#)).

The gamification method demonstrated that its implementation could potentially yield positive educational outcomes in learning contexts ([Cakiroglu & Guler, 2021](#); [Chu & Fowler, 2020](#)). The gamification approach in the activity seemed to support other previous studies that highlighted how gamification elements like points, rewards, marks, and goals could enhance student motivation ([Ahmad & Maat, 2022](#)). Rewards in they consistently enhance learners' motivation, focus, memory consolidation, and knowledge retention by engaging players and eliciting positive emotions ([Soo & Lee, 2022](#)). It also promoted student collaboration and sustained participation in the study. The gamified approach also generated excitement and engagement across all student groups. In each activity, as observed in this study, students displayed enthusiasm and joy when answering questions successfully and tracking their progress (total points). This positive response indicated that gamification techniques effectively captured students' attention and made the learning experience of reading comprehension more enjoyable and rewarding.

The results from the study (as seen through activities 1 to 4) also revealed that the gamification design enabled students to collaborate and cooperate with their group members to achieve the goal in each activity (Ahmad & Maat, 2022). This experience encouraged students to work together and interact with their peers. Through collaboration among students, they had the opportunity to integrate the material (task) with their existing knowledge or reorganize their prior understanding. For instance, the development of collaboration and communication skills was evident when every member of the student group shared ideas about their understanding of the text, discussed possible answers to each question, and collectively solved problems (the questions). Through these activities, students were actively engaged in the learning process.

It has been argued that competitive learning is suitable for high-achieving students in the class, rather than for low-performing students. In this particular study, despite the implementation of competitive learning, which aimed to leverage students' inherent competitiveness to foster a sense of accomplishment, students were organized into mixed groups comprising both high and low-performing individuals. This arrangement was intended to facilitate the idea that high-performance students would take on the role of "mini-teachers" to assist their low-performance peers. This approach ultimately aided low-performance students in improving their reading comprehension skills. Consistent with the self-determination theory (SDT), the results indicated that gamification interventions provided students with increased autonomy in their learning process, as evidenced by their ability to make choices, customize their learning paths, and engage in self-directed learning activities. This learning process eventually led the students to be able to master reading comprehension skills. In this study, autonomy could be observed when students could choose and decide how they were going to complete the given tasks (handouts) at their own pace, as long as they completed the tasks. The demonstration of competence, on the other hand, was evidenced by the student's ability for time management and successful completion of challenges presented to them within a prescribed time frame. Regarding relatedness, it could be seen in students' active engagement and collaboration with one another, as well as their reliance on teamwork to succeed.

In the present study, game elements have been implemented, including features such as goal, reward and challenge as well as collaboration (see Table 1). Goals have been introduced in the activities to provide students with clear directions on accomplishing the assigned tasks. Once the activities are successfully concluded, student groups will receive a star-based reward, which will be converted into points and documented via the *ClassDojo* platform. The reward system was based on the accumulation of marks and who is the fastest participant (group) to complete the task. As a result, students will be more careful to read the passage or text, striving diligently to grasp its content, and becoming more actively engaged in each activity. Moreover, when they actively participate, it is more likely they are easy to understand what they were read and are able to comprehend the text given.

On the other hand, the contrast between gamification and the traditional method has been supported by other studies, such as Gkorezis et al. (2021) and Signori et al. (2018). While gamification often excels in engaging and motivating students, promoting interactivity and active learning, and being able to be tailored to individual student preferences, traditional methods are often associated with passive listening or rote memorization, limited student interaction and active engagement, and reliance on periodic exams or assignments that provide delayed feedback, which may not support the immediate

learning process. Additionally, the research conducted by [Sari et al. \(2022\)](#) provided evidence of the positive impact of the gamification method on students' reading comprehension. The findings further support the notion that gamification can be an effective tool for enhancing student motivation and comprehension in the learning process.

Among the gamification elements employed in this study, the reward element stood out as having the greatest influence on improving learning outcomes. This aspect had the capacity to address students' intrinsic needs, notably their longing for acknowledgment from peers. As a result, students became more driven to participate in activities, feeling increasingly motivated to sustain their learning efforts and excel. In contrast, traditional methods often lacked opportunities for students to experience a sense of achievement and recognition among their peers. Consequently, students might have simply aimed to complete assigned tasks without a genuine sense of accomplishment. Furthermore, not all students fully grasped the content they were required to read, leading to doubts about their comprehension levels.

In past studies, it was observed that the gamification method facilitated better learning compared to using the traditional method. [Soriano-Pascual et al. \(2022\)](#) study indicated that implementing gamification in educational settings led to significant increases in students' intrinsic motivation. The incorporation of game elements such as an engaging narrative, avatars, badges, points, and special skills effectively engaged and motivated students, resulting in a greater appreciation for effort and improved task performance. In the present study, gamification activities demonstrated promise in enhancing concentration during reading and comprehension tasks which eventually facilitated better understanding of the learned materials. In particular, the activity to find an important information about the passage, it allowed the students to be more focus of that they were looking for. They're less likely to get distracted because they have a specific goal in mind. They also understand the purpose of the task, which can increase their motivation to concentrate and succeed. Compared to traditional methods, which were often associated with difficulties such as struggling to comprehend text content and grasping sentence meanings, gamification activities have demonstrated their effectiveness in addressing these challenges.

The gamification method also proves that it effectively captured students' attention and made the learning experience of reading comprehension more enjoyable and rewarding. While in the traditional approach to Malay reading comprehension, students were typically required to work independently, undertaking their reading and comprehension tasks without the opportunity for collaboration with peers. In contrast, gamification methods in the present study allow students to collaborate and cooperate with their fellow group members. This collaborative environment has been proven to assist low-performing students in enhancing their reading comprehension skills as well as being able to discuss texts, share ideas, and provide feedback to one another.

4. Conclusion

To conclude, the use of gamification methods to facilitate Malay reading comprehension has yielded encouraging outcomes in enhancing students' educational experiences and achievements. The incorporation of game-like elements and strategies has effectively sparked curiosity, nurtured inquisitiveness, and heightened motivation among students. Through the introduction of interactive tasks, incentives, and friendly competition,

gamification has created a captivating and enjoyable learning environment that encourages active participation and critical thinking. Future research could further examine the effect of gamification strategy on reading comprehension by taking into account student gender or level of education (secondary, primary, and kindergarten). Furthermore, gamification's effectiveness can also be examined in other Malay language skills, such as writing and grammar.

Ethics Approval and Consent to Participate

Approval for conducting the study was obtained from the Ministry of Education and the Sarawak State Education Department. Additionally, permission was granted by the school to collect data. Participation in this study was voluntary.

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Conflict of Interest

The authors reported no conflicts of interest for this work and declare that there is no potential conflict of interest with respect to the research, authorship, or publication of this article.

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