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Enhancing Students' Reading Proficiency through Game-Based Learning

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Abstract

Game-Based Learning (GBL) is a teaching approach incorporating enjoyable and interactive activities into the learning process to engage students and enhance their reading proficiency. The study adopted the eight steps of R&D model design by Gall and Borg in 1989. It aimed to develop, validate, and test the effectiveness of the instructional materials on enhancing the reading proficiency level of Grade 7 students of Dologon National High School- Kiharong Annex for school year 2024-2025. Specifically, it sought to: develop instructional materials on enhancing the reading proficiency level of students using game-based learning; validate the materials by subjecting them for evaluation by the teacher-experts and pilot learners; revise the material based on the suggestions and recommendations of the teacher-experts and pilot learners; and test the effectiveness of the developed, validated, and revised instructional materials in enhancing reading proficiency. The study employed a quasi-experimental design which used two intact sections as experimental and control groups. The research utilized the adapted questionnaires in assessing the teacher-experts and students' evaluation on the GBL-IMs. Descriptive statistics and ANCOVA were used in the study. The findings of the study revealed that teacher-experts evaluation on GBL was "Highly Eligible", and students' evaluation was "Strongly Agree" which mean that "The criteria were completely met". Moreover, GBL group has a higher reading proficiency increase compared to the non-GBL group and there was a significant difference between their pretest and posttest scores after the intervention. Hence, GBL may be integrated into classroom instruction as it enhances students' reading proficiency.

Keywords: game-based learning, instructional materials, reading proficiency

1. INTRODUCTION

Reading is the heart of learning. It is a primary tool in education and is vital to every human's life to learn effectively and efficiently (Quita & Borres, 2023). The effectiveness of students' educational attainment through engagement in teaching and learning activities at school greatly hinges on their proficiency in reading abilities (Hutabarat & Zaidi, 2021). Reading proficiency includes the students' ability to read fluently and comprehend the text they are reading.

The Philippines is found to have the highest education poverty rate among students in the ASEAN region, standing at 90.9% (Fernadez, 2023). Additionally, in the 2022 student assessment, the country scored approximately 120 points lower than the average scores, with 347 in reading, 373 in science, and 355 in math. The country ranked 77th out of 81 countries in the Program for International Student Assessment (PISA) conducted among 15-year-old learners (Ines, 2023). This alarming educational crisis has disturbed the Department of Education (DepEd) in all grade levels for this implied learning deficiency which can greatly affect the attainment of quality education.

Over the preceding six years, the Bukidnon Division recognized as the largest division in Region X, has achieved an average Mean Percentage Score (MPS) of 44.34 in the National Achievement Test for secondary education (DepEd Bukidnon Division Education Development Plan 2017-2022). Moreover, the school's National Achievement Test results in 2023 have shown poor student performance across subject areas. In English, the school got 45.06 in problem-solving, 37.04 in information literacy, and 44.88 in critical thinking. Unfortunately, the results are far beyond the 75% target of the government.

In Dologon National High School- Kiharong Annex among Grade 7 learners, 86% are classified to be in the frustration level, and 12% are classified in the instructional level who imperatively need appropriate help as evident in the Philippine- Informal Reading Inventory (Phil-IRI) report of the school for the first quarter of the school year 2024-2025 (Quita, 2024). The students may seem to have poor reading proficiency due to a lack of knowledge and skills in the learning process. Consequently, the persistent challenges with students' poor reading proficiency adversely impact their future success. To address this issue, educators must implement appropriate reading strategies and provide substantial instructional materials to enhance the students' reading proficiency.

Educational initiatives have focused on providing students with the knowledge and skills necessary to comprehend concepts in English, specifically in reading. DepEd-Bukidnon Division Memorandum no. 281, series of 2023 stipulated the conduct of training of teachers in the implementation of the National Learning Camp (NLC) with the integration of the fun-filled activities in the intervention and enhancement programs across the English, Science, and Math (EnSCiMa) subject areas. The program aims to address the department's commitment to the National Learning Recovery Program (NLRP) which seeks to close learning gaps and assist the K to 12 learners in all schools nationwide in attaining learning standards.

Game-based learning involves the adaptation of specific gaming principles and their application to real-world contexts with the aim of captivating users (Trybus, 2015). It plays a significant role in enhancing the reading proficiency and engagement of the students. The motivational psychology inherent in game-based learning enables students to interact

with educational content engagingly and dynamically. It goes beyond merely developing games for students to play; rather, it involves crafting learning experiences that gradually introduce concepts and steer users toward achieving specific objectives (Pho & Dinscore, 2015).

In addition, students acquire knowledge more effectively and demonstrate increased engagement in school tasks when educators utilize effective teaching methods evaluated through three instructional practice indices: active teaching strategies, fostering connections and extensions, and promoting student-to-student interactions (Amua-Sikye & Nti, 2015). Active teaching emphasizes engaging students in pairs or small groups to participate in activities like writing, discussions, or hands-on learning. Making connections and extensions evaluates how actively students engage in tasks that prompt them to relate their learning to real-life scenarios, solve unfamiliar problems, and apply their knowledge across various situations.

Furthermore, Extramarks (2023) argued that the first step toward leading students to academic success is to create a dynamic and fun learning environment. For teachers, a key aspect of enhancing the academic experience involves learning how to engage students in class. This is in support of the study of Ronimus et al. (2017) which claims that children exposed to game-based learning showed higher cognitive engagement and had higher gains in word reading and sentence reading fluency during the intervention.

Instructional resources play a significant role in enhancing the performance of students in the English Language (Adelodun & Asiru, 2015). They are powerful scaffolds to teach the language effectively. The DepEd Memorandum 117, Series of 2005, which called for public school teachers to craft intervention materials to address the least mastered skills of the learners and promote successful learning along with the desired competencies. With that, teachers in the field are encouraged by DepEd to conduct intervention programs to bridge the learning gaps and losses.

Teachers are encouraged by DepEd to design innovation and integrate game-based activities that could be advantageous in this current educational situation. To increase students' active involvement and enhance their reading proficiency, it is essential to integrate game-based activities into the reading sessions. This method can enhance the educational experiences by making it more enjoyable, memorable, and applicable, thereby motivating students to actively participate, explore, and succeed academically. Hence, the researcher decided to develop teacher-made instructional materials that could be very useful in this current educational situation.

The context of the mentioned problem concerning students' reading predicaments prompted the researcher to develop, validate, and test the effectiveness of the instructional materials on enhancing the reading proficiency skills of Grade 7 learners.

Statement of the Purpose

The primary objective of this study is to develop, validate, and test the effectiveness of the instructional materials on enhancing the reading proficiency level of Grade 7 students. Specifically, it sought to:

1. Develop instructional materials on enhancing the reading proficiency level of students using game-based learning.

2. Validate the materials by subjecting them for evaluation by the teacher-experts and pilot learners.
3. Revise the material based on the suggestions and recommendations of the teacher-experts and pilot learners.
4. Test the effectiveness of the developed, validated, and revised instructional materials in enhancing reading proficiency.

2. LITERATURE REVIEW

2.1. Game-based Learning

This study utilized game-based learning and was conducted in line with the DepEd Bukidnon's Reading Advocacy in enhancing students' academic performance, particularly the low reading proficiency levels based on national and international large-scale assessments. The teacher-researcher developed and used the teacher-made instructional materials on the different types of expository texts that are adopted at the district level. These materials are purposely designed as supplementary materials to be used in the district-wide implementation of BRAINS (Balanced Reading Activities in Nurturing Students). This strategy/innovation aimed to improve the reading proficiency, particularly in word reading and comprehension of Grade 7 students in Kiharong Annex, School Year, 2024-2025.

The topic mainly focused on the types of expository texts (description, sequence, comparison, cause and effect, and problem and solution). The instructional materials consist of descriptions, signal/cue words, graphic organizers, and sample texts that would help the students comprehend the text easily. The teacher-made reading materials are embedded with different game-based activities that promoted students' active involvement in the reading sessions. Moreover, they were evaluated and validated by the subject experts.

Game-based learning entails a strategy employing enjoyable games and activities as educational tools to facilitate student learning. Effective games serve as potent means for fostering deep and meaningful learning experiences. Given the widespread interest in gaming among students, it can serve as a vehicle for experiential learning through exploration and collaboration. By immersing themselves in games that necessitate assuming diverse roles and responsibilities, students acquire valuable knowledge and skills applicable to real-world contexts. Moreover, the underlying concepts and principles embedded in these games can offer valuable models for educators and facilitators seeking to teach various subjects and attain specific learning objectives. Furthermore, well-designed games contribute to the creation of conducive learning environments by simultaneously imparting academic content and essential skills while maintaining student motivation (Shute & Ke, 2013).

Bayram et al. (1999) as cited by Öztürk & Korkmaz (2020) claim that game-based learning plays a diverse role in the holistic development of children, facilitating connections with their surroundings, emotional expression, experiential learning, enjoyment, relaxation, and problem-solving. Additionally, as cited by the authors. The research by Polat (2014) and Gibson et al. (2015) underscores the favorable attitudes and success outcomes linked with games. Additionally, Sarı and Altun (2016) observe that games consistently engage individuals, contributing to enhanced communication skills and

muscle coordination, as highlighted by Jones (2001). Games positively impact learner motivation and attitudes, fostering constructive feedback in teaching.

2.2. Educational Impact

The educational impact of GBL has been extensively studied, with findings suggesting that it can lead to positive learning outcomes. Numerous studies report that students engaged in GBL demonstrate improved academic performance compared to those who learn through traditional methods (Rosas et al., 2003). GBL has been linked to an enhanced attitude towards learning, as it makes the educational experience more enjoyable and relevant (Deterding et al., 2011). Importantly, GBL equips students with vital skills necessary for the modern workforce, reinforcing its value in contemporary education.

A study by Solano et al. (2011) on the use interactive games as educative strategy to motivate students to communicate inside the classroom showed that interactive games is very productive since it allows students to increase interest and motivation and consequently obtain better learning outcomes and raise confidence in communicating in English. Similarly, Cheng et al. (2019) claimed that the game-based approach not only benefits students' motivation, but also provide better results on their academic achievements.

GBL offers an exciting opportunity to promote engagement and learning that allows teachers to experiment with the use of technologies and applications in interesting and innovative ways. The paper of Pho & Dinscore (2015) claims that when games are designed with learning principles in mind, it can increase student motivation, engagement, and learning. A paper by Derakhshan & Khatir (2015) has reviewed the effects of using games on improving vocabulary learning in an English as foreign language or English as second language context suggested that learning vocabulary through games is one of the effective and interesting ways that can be applied in classrooms and allow students to use the language more communicatively.

A quantitative study by Alfuhaid (2023) in using digital games to enhance the vocabulary level of Saudi male secondary school students showed that using digital games to learn vocabulary enhanced learners' overall vocabulary acquisition. Digital vocabulary games effectively improved the learners' vocabulary level and enhanced their attitude towards vocabulary learning (Lozarito & Segumpan, 2022). To achieve success with the use of games in learning, the objectives and goals need to be aligned and have formal assessment criteria (Goltaire et al., 2022).

2.3. Instructional Materials to Reading Proficiency

Instructional materials play a vital role in giving instruction to the learners to achieve the desired learning goals. It provides different activities that need to be fun, interesting, and motivating to make learning meaningful. The study of Ali and Saiden (2015) on the use of graded materials for children with reading difficulties mentioned the use of colorful and attractive pictures helped keep students' interest in further reading the materials. As a result, the children increased their reading interest and confidence which eventually improved their reading skills.

Moreover, the teaching of reading skills relies on the availability, quality, and utilization of relevant instructional resources and the skill of the teacher (Omuna et al., 2016). They argued that it is because instructional materials facilitate the understanding of the difficult concepts of the lessons as well as the teaching and learning of the reading skills to make the learners understand and follow the materials easier. Okwara observed as cited in Omuna et al. (2016) that the availability of instructional resources is a condition ideal for the effective teaching of reading skills. The findings of Rwamwenge et al. (2020) confirmed that instructional materials contributed to the variation in learners' English reading literacy in primary schools. The arguments imply that failure to provide quality instructional materials to students affects the substantial outcome of learning.

However, in most public schools, instructional materials are limited and sometimes inaccessible. This holds true in the findings of Bukoye (2019) that revealed the inadequacy of instructional materials in 5 selected secondary schools in Nigeria and most of the teachers did not pay attention to the importance of the use of instructional materials in teaching. Instructional materials in public schools were inadequate which resulted in low academic performance among students. With this, teachers are encouraged to develop contextualized learning materials in response to the problem.

Students should develop reading comprehension regardless of the career path they will choose due to globalization, in such a situation good English language proficiency is a must to ensure effective communication (Kusumadyahdewi & Kusumarasdyati, 2019). For children who may face reading difficulties, early intervention is a societal priority (Thomson et al., 2020). Dahar (2011) encouraged the use of instructional materials for it has a strong relationship with academic performance at secondary school (Salviejo et al., 2014). Thus, developing instructional material plays a fundamental role in the teaching-learning process.

High-quality instructional materials help in facilitating thinking out of the box and guiding discoveries while making learning significant to learners (Lashley, 2019). They provide opportunities for learners to interact with the IMs for effective curriculum delivery and enhance performance. In order to produce effective teaching materials, teachers must uphold the underlying principles of the development and management of instructional materials.

A study of Cordova et al. (2019) presented their study at DLSU Research Congress in 2019 at De La Salle University, Manila, Philippines on the "Effectiveness of Competency-Based Strategic Intervention Materials in English 7". The authors observed in the study that learners enjoyed and learned as they went along with the SIM. They have improved their least mastered skills and even developed their passion for reading.

Furthermore, Akyol et al. (2014) made a study on the development of reading skills of students having difficulty reading through enrichment programs. It was concluded that to develop the reading skills of the students, the construction of an appropriate reading environment and enrichment of reading programs can be effective. As prescribed, reading interventions should use texts with topics that are familiar to the learners, so they will have notable support and background to access the reading texts and comprehend them (Dele Cerda, 2016).

Teachers' initiative in crafting and utilizing instructional materials bridges gaps toward achieving educational goals (Perez-Diaz et al., 2020), especially in this post-pandemic transition period. Teachers then should develop instructional materials based on the learning objectives, learners' needs, and topic-based planning (Kusuma & Sigit, 2018). Hence, the use of innovative instructional materials with the integration of game-based learning would be a great help in reaching out to students to learn effectively, be active, be competitive, and be resilient in spite of the challenges.

3. RESEARCH METHODOLOGY

The research study utilized a quasi-experimental research design that sought to examine the effects of GBL on the students' reading proficiency level of two intact Grade 7 sections of DNHS- Kiharong Annex for the school year 2024-2025. A total enumeration method of the two classes was used in the study. Descriptive statistics and ANCOVA were employed in the conduct of the study.

The teacher-made instructional materials with integration of the GBL adopted the steps of R&D model design by Gall and Borg in 1989. The eight steps of R&D cycle were employed in the study: (1) need analysis (in Gall and Borg's model it is called research and information collecting); (2) development of material (it is planning and developing the preliminary form of the product); (3) Expert's validation; (4) First Revision (main product revision); (5) Try-out (main field testing/piloting); (6) Revision (operational product revision); the final product; and (8) dissemination and implementation (Rosyidah & Aisyah, 2019). One group (experimental) was assigned to be exposed with the GBL, while the other group (control) was exposed to conventional method of teaching with expository texts structures. The intervention was implemented within one (1) quarter of the school year.

4. RESULTS AND DISCUSSION

4.1. Teachers' Evaluation of the Game-Based Learning Instructional Materials

Table 1: Mean scores of teacher-experts' evaluation of the GBL Instructional Materials

	Indicators	Teachers		
		MEAN	SD	QI
1	The games present clear goals and objectives that the learners will have to accomplish in order to complete the games.	5.00	.000	CM
2	The rules of the game are clear and consistent throughout the whole games.	5.00	.000	CM
3	The challenge present in the game is appropriate for learners' level.	5.00	.000	CM
4	The support and feedback of the game is accessible at the times likely to be needed.	5.00	.000	CM
5	The games hold learner's attention.	5.00	.000	CM
6	The games scenarios promote "good" competition.	5.00	.000	CM

7	The games include elements oriented to make the games more fun and entertaining.	4.67	.577	SM
8	The games are aligned in the educational objectives.	5.00	.000	CM
9	The game is adapted/comprehensible to the specific students' profile.	4.67	.577	SM
10	The games scenario provides relevant learning resources necessary for achieving the educational objectives.	5.00	.000	CM
11	The games embedded in a comprehensive learning scenario.	5.00	.000	CM
12	The games allow for progressive acquisition of knowledge.	5.00	.000	CM
13	The games provide a personalized learning process according to learners' level.	5.00	.000	CM
14	The games provide a context that promotes independent learning.	4.67	.577	SM
15	The games enhance learners' motivation.	5.00	.000	CM
16	The game is aligned in the educational objectives.	5.00	.000	CM
17	The games are user friendly.	4.67	.577	SM
18	The graphics are appropriate for the target group.	5.00	.000	CM
19	The games are flexible and easy to adapt.	4.67	.577	SM
20	The features of the games are easy for the students to follow.	5.00	.000	CM
	OVERALL MEAN	4.92	.104	CM

Legend:

Scale	Verbal Description (VD)	Qualitative Interpretation (QI)
5	Highly Eligible (HE)	The criterion was completely met. (CM)
4	Eligible (E)	The criterion was substantially met. (SM)
3	Decent (D)	The criterion was adequately met. (AM)
2	Not Adequate (NA)	The criterion was partially met. (PM)
1	Not Feasible (NF)	The criterion was not met. (NM)

Table 1 reflects the consolidated responses of the 3 teacher-experts on the evaluation of the GBL-IMs. The teachers' evaluation has the highest mean scores of 5.00 for fifteen (15) indicators except for the following indicators: (7. The games include elements oriented to make the games more fun and entertaining.), (9. The game is adapted/comprehensible to the specific students' profile.), (14. The games provide a context that promotes independent learning.), (17. The games are user friendly.), and (19. The games are flexible and easy to adapt.) with mean scores of 4.67. It indicates that the majority of the means in the twenty (20) indicators obtained the "Highly Eligible or equivalent to "The criteria were completely met" in their evaluation of the GBL IMs which imply that they agreed that the GBL instructional materials completely met the criteria.

Moreover, the overall mean score of 4.92 which indicates highly eligible simply suggest that the GBL-IMs were well-designed, and the overall criteria were completely met.

The study of Ali and Saiden (2015) on the use of graded materials for children with reading difficulties mentioned the use of colorful and attractive pictures helped keep students' interest in further reading the materials. As a result, children increased their reading interest and confidence which eventually improved their reading skills. The significant result of the study is supported by the previous research of Bugler et al. (2017) which shows that teachers have leeway to determine whether the supplemental materials are aligned with the standards and with the goals of the classroom, grade level, and school. Teachers knew the importance of developing their own professional judgment to select supplemental materials to enhance the quality of instructions.

Furthermore, the study of Akyol et al., (2014) on the development of reading skills of students having difficulty in reading through enrichment programs concluded that to develop the reading skills of the students, the construction of an appropriate reading environment and enrichment of reading programs can be effective. The findings of Rwamwenge et al., (2020) confirmed that instructional materials contributed to the variation in learners' English reading literacy in primary schools. The arguments imply that failure to provide quality instructional materials to students affects the substantial outcome of learning.

Additionally, Cramer's V was employed to measure the substantive significance of the teacher-experts' rating. The result shows that the p-value is 0.59 which means that there is no significant difference among their ratings. It also implies that the three teacher-experts have a higher agreement among their ratings on the GBL-IMs. Generally, the overall finding reveals that the teacher-experts have a higher evaluation rating on the GBL instructional materials. It reveals that the criteria were completely met as their rating indicates "Highly Eligible" which consequently help in enhancing the reading proficiency level of the students.

4.2. Students' Evaluation of the Game-Based Learning Instructional Materials during the Pilot Testing

Table 2 presents the students evaluation of the GBL instructional materials. It indicates that majority of the mean scores of the ten (10) indicators obtained the "Strongly Agree" or equivalent to "The criteria were completely met" in their evaluation of the GBL-IMs. The students' evaluation obtains an overall mean of 4.58 with standard deviation of .166 which means that the criteria were completely met.

Table 2: Mean scores of students' evaluation of the GBL Instructional Materials

	Indicators	Students		
		MEAN	SD	QI
1	GBL helped me maintain my attention and focus during learning and playing sessions.	4.60	.496	CM
2	I believe that GBL gave me an added motivation.	4.88	.335	CM
3	GBL gave different educational experience from those given by traditional classroom instruction.	4.35	.483	SM

4	GBL brought fun and enjoyment to learning.	4.70	.464	SM
5	GBL allowed me to learn from my mistakes.	4.65	.533	CM
6	Through GBL, teachers could provide me with problems to solve that are related to the subject/topic to learn.	4.65	.483	CM
7	GBL was useful because they provide direct feedback during learning/ playing sessions.	4.58	.500	CM
8	GBL could put me in a simulated world environment where I could apply the concept that I have learnt.	4.63	.490	CM
9	Using GBL with teaching and learning increased my retention (ability to remember information and skills I have learnt) of a topic/subject.	4.73	.452	CM
10	GBL was effective tool to develop my reading proficiency skills.	4.45	.504	CM
	OVERALL MEAN	4.58	.166	CM

Legend:

Scale	Verbal Description (VD)	Qualitative Interpretation (QI)
5	Strongly Agree (SA)	The criterion was completely met. (CM)
4	Agree (A)	The criterion was substantially met. (SM)
3	Uncertain (U)	The criterion was adequately met. (AM)
2	Disagree (D)	The criterion was partially met. (PM)
1	Strongly Disagree (SD)	The criterion was not met. (NM)

The findings of the study are supported by Sinco (2020) which showed that students have a very high evaluation on the use of instructional material if they found it enjoyable and interesting that developed a positive attitude towards learning. Students became motivated when they believed they can be effective in reaching the desired goals under their own control. It would consequently inspire and encourage them to learn more concepts about the topic.

The results of the study imply that GBL gave the students added motivation with a mean score of 4.88, it increased students' retention (ability to remember information and skills they have learnt) of a topic/subject with a mean score with a mean score of 4.73, and it brought fun and enjoyment to learning with a mean score of 4.70 as evidenced by their responses in the 10 indicators. In consistent to the findings of Muntean (2011) which argues that games positively impact learner motivation and attitudes, fostering constructive feedback in teaching. In fact, the research by Polat (2014) and Gibson et al. (2015) underscores the favorable attitudes and success outcomes linked with games. Additionally, Sarı and Altun (2016) observe that games consistently engage individuals, contributing to enhanced communication skills and muscle coordination, as highlighted by Jones (2001).

With that, IMs and the teacher's pedagogical strategies play crucial role in the teaching of reading. Its success relies on the availability, quality, and utilization of relevant instructional resources and the skill of the teacher (Omuna et al., 2016). Well-designed games contribute to the creation of conducive learning environments by simultaneously imparting academic content and essential skills while maintaining student motivation (Shute & Ke, 2013).

The result further reveals those students in the GBL group enjoyed reading and doing all the activities in the GBL-IMs because it offered interesting, fun, and collaborative activities. Dahar as cited in Sinco (2020) stated that instructional materials which captivate the students' attention and making available for them would surely produce an effect that contributes to successful a learning outcome. Through game-based learning, students can exchange ideas with their peers and work collaboratively to do tasks and solve problems. It develops their social skills such as cooperation, communication, and empathy by providing opportunities to interact with each other (Alotaibi, 2024).

Research indicates that GBL can significantly enhance student engagement and motivation. Game-based elements, such as rewards and challenges, create an environment that encourages active participation (Hamari et al., 2014). Learning through interactive sessions helps students learn better and enhances their problem-solving cognitive abilities which contribute to improving students' engagement, coordination, and creativity (Adipat et al., (2021). The overall finding shows that students have a very high evaluation on the use GBL in teaching-learning process.

4.3. Level of Students' Reading Proficiency in Pretest and Posttest

Table 3 shows the pretest and post-test percentage scores of the game-based and non-game-based groups. The measure of the students' reading proficiency is obtained from the frequency and percentage of their scores in the pretest and posttest. The basis for interpreting the scores of the students is the PHIL-IRI Manual (Pado et al., 2018).

It presents that majority of the students in both groups belonged to the frustration level in the pretest. The non-game-based group has 35 (85.37%) students who belonged to the frustration level and 6 (14.63%) belonged to the instructional level. Similarly, the game-based group has 32 (80.00%) students belonged to the frustration level and 8 (20.00%) belonged to the instructional level. Both game-based and non-game-based groups do not have students under the independent level.

Table 3: Pretest and posttest mean scores of students' reading proficiency

Descriptive Level	Non-Game-Based Group				Game-Based Group			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
Ind	0	0	3	7.32	0	0	6	15.00
Ins	6	14.63	13	31.70	8	20.00	23	57.50
F	35	85.37	25	60.98	32	80.00	11	27.50

Legend:

Mean Score		Descriptive Level
Word Reading	Comprehension	
97.00 – 100	80.00 – 100	Independent (Ind)
90.00 – 96.99	59.00 – 79.99	Instructional (Ins)
1.00 – 89.99	1.00 – 58.99	Frustration (F)

The data on the pretest result reveals that the majority (82.72%) of the students in both groups manifest poor reading proficiency level as their scores only range from 1% to 89.99% in word reading and only 1% to 58.99 % in reading comprehension, except for the 14 (17.28%) students whose word reading scores range from 90% to 96.99% and 59% to 79.99% in reading comprehension who apparently belonged to the instructional level. This simply implies that game-based and non-game-based groups need an intervention to improve the level of their reading proficiency.

However, after exposure to the intervention, in the game-based group has a remarkable improvement in their reading proficiency level. There are six students (15%) have reached in the independent level. Moreover, there is a substantial increase of 57.50% (23 students) from 20% (8 students) belonged to the instructional level while the frustration level dropped significantly from 80% (32 students) to 27.50% (11 students) which indicates that the experimental intervention had a positive effect on reading proficiency of the students.

On the other hand, the non-game-based group shows that only three students (7.32%) have reached the independent level, a slight increase in the instructional level from 14.63% (6 students) to 31.70% (13 students) while in the frustration level has decreased only slightly from 85.37% (35 students) to 60.98% (25 students) which indicates that even some progress was made, a significant portion still faced challenges. This only means that GBL in the game-based group has a higher improvement in the reading proficiency level compared to traditional methods used in the non-game-based group.

Several studies emphasize the impact of teaching methods on student engagement and academic performance. Game-based learning have been shown to enhance motivation and interest in learning, potentially leading to improved academic outcomes (Zainuddin & Halili, 2016). On the contrary, a lack of engagement or non-game-based activities may contribute to lower performance (Deci et al., 2017). Game-based activities can enhance motivation and make the learning experience more enjoyable, contributing to better academic outcomes (Banister & Ross, 2019).

The observed improvement in the post-test results suggests that the intervention, possibly the inclusion of more engaging activities, had a positive impact on student learning. This aligns with research emphasizing the importance of varied instructional methods to cater to diverse learning styles and preferences (Pashler et al., 2008). The results of the study divulge that the game-based group imperatively outscored the students in the non-game-based group since there is a higher improvement in their reading proficiency level after the given intervention. This is in consistent with the study by Bondaug (2021) which reveals that the pretest and posttest results yielded a significant difference in both the try-out and implementation stage signifying that the game-based

material was effective in increasing the reading comprehension level of the learners and increase the learners' interest and engagement in their reading classes.

4.4. ANCOVA of Students' Reading Proficiency Level

Table 4 presents the mean scores of the students' reading proficiency of the two groups after exposure to the game-based learning and non-game-based learning. It shows the variable, the mean, the standard deviation, the F-value, and the p-value. It reveals how the reading proficiency level of the game-based and the non-game-based groups differ.

Table 4: Comparison between groups on the students' reading proficiency level in the pretest and posttest

GROUP	N	Mean	Std. Deviation
Game-based	40	1.85	.66216
Non-game-based	41	1.46	.63630

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Group	2.630	1	2.630	6.673	0.012
Covariate (Pretest)	2.549	1	2.549	6.467	0.013
Error	30.746	78	.394		
Total	258.000	81			

P< significant at 0.05 level.

The table 4 shows that mean performance of the game-based group has a mean score of 1.85 with standard deviation of .66216 and the non-game-based group has of 1.46 with standard deviation of .63630. The game-based group has a significantly higher mean performance compared to the non-game-based group, as indicated by the significant Group Effect ($p = 0.012$). The Covariate Effect of the Pretest is significant ($p = .013$) which suggests that the students' pretest scores significantly influenced their posttest performance. The interaction between the game-based group and the pretest scores contributes to the observed differences in posttest scores.

Research by Hattie, Guskey, and Yen (2017) emphasizes the importance of pretest scores as a covariate in educational research. Their work aligns with the current study, highlighting the influence of pretest scores on the posttest outcomes. Johnson and Johnson's (2014) study on cooperative learning may provide insights into effective teaching strategies. The positive impact observed in the experimental group could be attributed to collaborative, fun, and engaging methods. Moreover, the study by Wang and Eccles (2013) on achievement motivation and academic engagement could support the interpretation of the observed group differences, emphasizing the role of motivation in academic performance.

The findings of the study reveal that game-based learning contributed significantly to the reading proficiency of the students in the game-based group. The results are consistent with those of Ruiz Villacrés & Paredes Rodríguez (2023) that experimental group using game-based activities considerably improved the reading comprehension of the students compared to the non-game-based group. GBL offers an exciting opportunity to promote engagement and learning that allows teachers to experiment with the use of technologies in interesting and innovative ways. When games are designed with learning principles in mind, it can increase student motivation, engagement, and learning (Pho & Dinscore, 2015).

Furthermore, students engaged in GBL demonstrate improved academic performance compared to those who learn through traditional methods (Rosas et al., 2003). The students showed enthusiasm and active participation during the different game-based activities. However, to achieve success with the use of games in learning, the objectives and goals need to be aligned and have formal assessment criteria (Goltaire et al., 2022). In this regard, teachers may apply game-based principles in the teaching-learning process to make it more motivating, interesting, and engaging without compromising the learning objectives.

5. CONCLUSION

Based on the findings of the study, the following conclusions were formulated:

First, the overall GBL evaluation of the teacher-experts were "Highly Eligible" or equivalent to "The criterion was completely met" with regard to the checklist given. This only means that teacher-experts have higher mean scores in the evaluation of the GBL. Second, the students' evaluation on GBL during the pilot testing is high with majority of the indicators obtained the "Strongly Agree" or equivalent to "The criteria were completely met". Hence, students' evaluation is favorable to GBL. Third, the majority of the students from the GBL and non-GBL groups belonged to the frustration level in the pretest, however, in the post-test, progress is noted. It was observed that more students in the GBL group moved to the instructional level and independent level compared to the non-GBL group. Thus, the GBL group has a higher reading proficiency increase compared to the non-GBL group. Lastly, there was a significant difference between the pretest and posttest scores in the GBL and non-GBL group after the interventions. Hence, the result showed that the use of GBL (experimental group) has a higher significant effect on students' reading proficiency compared to who were exposed to non-GBL.

Based on the conclusions of the study, the following recommendations were drawn: First, teachers are encouraged to consider the integration of GBL in the development of instructional materials for it provides an opportunity to enhance students' reading proficiency. Second, the curriculum developers may integrate the Game-Based Learning (GBL) in the development of instructional materials which would boost students' interest and motivation in learning the target language. Third, reading and English teachers may utilize GBL in the teaching of reading for it improves students' reading proficiency specifically on expository text. Fourth, school administrators and curriculum implementers may encourage teachers to develop instructional materials with the integration of appropriate approach/es and by adopting the steps in IM development such as the Research and Development model. Lastly, another study is recommended to be

done with the use of GBL in other types of text structure that includes the integration of online games.

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