
Using Gamification to Enhance Reading Comprehension of Grade 4 Learners

Jerilyn L. Doria¹; Maria L. Edwas²; Aprilyn Joy F. Fagsao³;
Juliana D. Galduen⁴; Maria Lourdes G. Eguia⁵

Graduate School, Baguio Central University, Baguio City, 2600, Cordillera Administrative Region, Philippines

doriajerilyn343@gmail.com; maria.edwas@deped.gov.ph; aprilynjoyfagsa@gmail.com;

juliana.galduen@deped.gov.ph; marialourdesgeguia@gmail.com

Correspondence: perfecto_lopez@yahoo.com

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Abstract: The study aimed to determine gamification's effectiveness in enhancing reading comprehension in grade 4 learners at Aguinaldo Elementary School. The respondents of the study were 49 grade 4 learners. The researchers used qualitative research design through the Phil-IRI pretest and post-test as the main data-gathering tool. Before using gamification, the level of performance was satisfactory as assumed in our hypothesis. Gamification has been proven to have significance in improving reading comprehension. Despite the struggles encountered the research was successfully conducted. The result of the study demonstrated that the reading comprehension of grade 4 learners improved using gamification. It is therefore recommended as a tool to enhance the teaching-learning process in the classroom.

Keywords: Gamification, comprehension, intervention, games, reading skills.

I. INTRODUCTION

In an increasingly digital age, the education landscape is evolving rapidly, necessitating innovative approaches to engage learners effectively. Traditional reading instruction methods, while foundational, often fall short of captivating the interests of today's students—many of whom are digital natives immersed in interactive technologies. As a result, there is a pressing need to explore alternative pedagogical strategies that can enhance reading skills and foster a love for literacy.

The primary importance of this study lies in its potential to revolutionize reading instruction. By leveraging the interactive and immersive nature of video games, educators can create a more engaging learning environment that may lead to improved reading skills and higher levels of student motivation. This research could pave the way for the development of new educational tools that blend entertainment with education, catering to the digital preferences of modern learners.

Reading is a lifelong skill to be used at school and throughout life. According to Anderson, Hiebert, Scott & Wilkinson (2013), reading is a basic life skill. It is a cornerstone for a child's success in school and throughout life. Without the ability to read well, opportunities for personal fulfillment and job success inevitably will be lost. Despite its importance, reading is one of the most challenging areas in the education system. The ever increasing demand for a high level of literacy in our technological society makes this problem even more pressing (Upton, 2010).

Reading is a fundamental skill for acquiring information, for it is a process that aids in meaningful construction (Temur, et al. 2010). For the past two decades, many studies have been done about reading comprehension. Most results are based on research about how good readers interact with texts. Research has

likewise found that good readers are active or strategic and use a variety of comprehension strategies before, during, and after reading a text.

Since reading is a problem-solving process, an analysis of reading strategies can provide insights into how readers interact with the text, and how their choice or use of strategies influences their comprehension of the text. A focus on reading strategies likewise helps the researcher to determine the extent to which readers understand the purpose of what they read, how they make sense of what they read, and what they do when they do not understand some aspects of the reading materials (Williams & Moran, 2010).

Teele (2010) asserts that the goal of all readers should be to understand what they read. Research shows good readers are actively involved with the text, and they are aware of the process they use to understand what they read. Teachers can help improve learners' comprehension through instruction of reading strategies. Predicting, making connections, visualizing, inferring, questioning, and summarizing are the strategies shown by research to improve reading (Block & Israel, 2015).

A reading strategy is defined as a systematic plan that readers adopt to facilitate reading comprehension (Kirmizi, 2010), and the construction of meaning. These strategies include previewing, self-questioning, making connections, visualizing, knowing how words work, monitoring, summarizing, and evaluating. Researchers believe that using such strategies helps students become metacognitive readers (McLaughlin & Allen, 2012).

Another strategy used by teachers is gamification. Gamification usually refers to a loose sheet of paper with questions or exercises for students to complete and record answers. Gamification can be useful in many ways in terms of academic achievement. For example, as supplements to textbooks, gamification can be used to add information for classes. In addition, gamification is an invitation for students to fill in gaps; they are opportunity for knowledge construction. Well-designed questions in gamification interest when paired with proper teaching methods. Furthermore, gamification plays a variety of functions in different contexts (Lee, 2014).

Teachers tend to use gamification with low-achievement classes. The reasons for this tendency may be twofold. One is that textbooks are designed for general students and need to be adapted. However, worksheets can offer relevant questions and motivate students, both of which are functions that were ranked as best performed by teachers surveyed in a study. Secondly, as written material, worksheets can act as agents of teachers to lead students' attention and give students opportunities to work independently, so the students can work at their paces and the teacher can have time to take care of those students who need more help (Lee, 2014).

Gamification is the application of game design elements and principles in non-game contexts to enhance engagement, motivation, and participation. It involves incorporating features such as points, badges, leader boards, challenges, and rewards into activities that might not traditionally be considered "games."

Gamification is a kind of strategy, so reading demand may be a barrier to students with low reading comprehension abilities. Researchers suggest that teachers should use easier language to support students. For example, designed a gamification with low average reading difficulty. Questions in the beginning is carefully matched with low reading ability students and subsequent questions require increasing levels of literacy. The result showed that this kind of gamification can improve student engagement and on-task behavior during independent reading activities (Lee, 2014).

To be a good reader, learners should set a goal for their reading; therefore, good readers have a purpose for reading. One skill for improving reading comprehension is predicting, which helps the reader set a purpose for their reading.

Researchers have shown that good readers use their experiences and knowledge to make predictions and formulate ideas as they read (Block & Israel, 2015). This skill also allows more learner interaction, which increases learners' interest and improves their understanding of the text (Oczkus, 2013). It is important to compare the outcome in the actual text with the prediction process as it will lead the learner to improve his understanding or comprehension (Duke & Pearson, 2015).

In the school where the researcher is teaching, it was observed that learners need reading strategies to improve their comprehension skills. There are lots of reading programs conducted in the school and the researcher found out that learners can only read but they are poor in comprehension. Thus, the researchers intend to improve the reading comprehension skills of learners with the use of gamification.

The teacher researchers believe that without a solid foundation of reading skills, the learners will struggle throughout their academic and adult lives. The researchers hope to provide reading awareness to their learners by teaching reading comprehension skills and in this way, the learners will develop a more meaningful reading experience. Therefore, the researchers necessarily conduct this research to experiment with gamification as a strategy to improve the reading skills of the learners in Aguinaldo Elementary School.

The importance of the study is to find out the use of gamification as a help to teachers in teaching reading comprehension in the grade four level. In summary, the philosophical framework of this study emphasizes active, engaged, and relevant learning experiences through the lenses of constructivism and connectivism, aligning well with the use of Gamification in literacy education. Despite the increasing prevalence of digital technology in education, many students struggle with reading comprehension and engagement. Traditional teaching methods often fail to capture the interest of learners, particularly digital natives accustomed to interactive and immersive experiences. This disconnect raises concerns about the effectiveness of conventional reading instruction and the need for innovative approaches.

Gamification facilitates active participation by allowing learners to engage with content interactively. Through game-like elements—such as challenges, rewards, and feedback—learners can explore reading materials more deeply, constructing meaning and understanding in a way that traditional methods may not support it.

Gamification allows for differentiated instruction by enabling teachers to tailor challenges and activities to meet the diverse needs of their learners. This adaptability is crucial in a fourth-grade classroom, where reading levels can vary widely. The study's focus on gamification can help teachers provide personalized learning experiences that foster improvement in reading comprehension for all students.

Video games and gamification have emerged as potential tools to enhance learning by providing engaging, interactive environments that encourage active participation. However, there is limited empirical research examining how these methods specifically improve reading skills, including comprehension, fluency, and critical thinking. The central problem lies in understanding how video games and gamification can be effectively integrated into reading instruction to enhance students' reading comprehension skills.

This involves investigating the specific features of games that foster engagement and motivation, the types of reading that can be developed through these methods, and the potential challenges educators face in implementation.

Therefore, this research seeks to explore the effectiveness of video games and gamification in improving reading comprehension skills among students, addressing the gap between digital engagement and traditional literacy development.

The beneficiaries of the result of the study are the learners, teachers, parents, and future researchers who are teaching in basic education who encountered some problems and searching for different strategies to apply in teaching reading skills to the learners to improve their reading comprehension skills.

II. METHODOLOGY

The study used a descriptive research design. This study applied the quasi-experimental design, using the pretest–post-test scheme for one group. Researchers aim to describe the situation or population while examining the effects of using gamification to enhance the Grade 4 learners reading comprehension. The pretest was administered before using gamification as a strategy to improve the reading level of learners. Gamification strategy and activities were administered to the 49 learners within a month. The post-test is administered afterward (Shadish, W.R, and Campbell, D. T, 2002). Finally, researchers used descriptive statistics to summarize the data and inferential statistics to examine the relationships or effects of using gamification to enhance reading comprehension.

III. RESULTS AND DISCUSSION

A. Pretest Scores of Grades 4 Learners Before the Used Gamification

The pretest scores of the Grade 4 learners before using Gamification are shown in Table 1 with a mean of 10.79 and the descriptive equivalent is satisfactory. As shown in Table 2, 59.18% of learners got satisfactory performance during the pretest. 20.42% out of forty-nine learners got fair performance during the pretest assessment. 18.36% of learners out of forty-nine got very satisfactory performance during the pretest and 2.04% got

excellent performance in the pre-test assessment. *This means that the learners acquire fundamental abilities that will serve as the foundation for their future learning and development.*

According to New Path Learning (2024), Game-based learning is a technique that is gaining traction in the early childhood and elementary curriculum. This is because studies have shown children’s academic and developmental learning results are improved through the integration of this technique within classroom instruction. It also prepares learners for success in the twenty-first century by instilling relevant skills in them. Playing encourages a learner's desire to explore and discover new things. This encourages the learners to develop control over their surroundings which improves focus and concentration. It also allows the learner to participate in the flexible and high-level cognitive process that is considered necessary for new-age learners. These include problem-solving, analysis, evaluation, application of information, and creative inquiry processes.

Table1

Level of Performance of the Grade 4 Learners Before the Use of Gamification (N=49)

Learners	Pre- Test	Descriptive Equivalents
1	8	Fair
2	11	Satisfactory
3	17	Excellent
4	12	Satisfactory
5	9	Satisfactory
6	7	Fair
7	10	Satisfactory
8	12	Satisfactory
9	8	Fair
10	6	Fair
11	9	Fair
12	11	Satisfactory
13	17	Very Satisfactory
14	11	Satisfactory
15	9	Satisfactory
16	6	Fair
17	8	Fair
18	9	Satisfactory
19	7	Fair
20	12	Satisfactory
21	15	Very Satisfactory
22	11	Satisfactory
23	13	Very Satisfactory
24	10	Satisfactory
25	10	Satisfactory
26	11	Satisfactory
27	13	Very Satisfactory
28	12	Satisfactory
29	11	Satisfactory
30	10	Satisfactory

31	7	Fair
32	14	Very Satisfactory
33	15	Very Satisfactory
34	11	Satisfactory
35	13	Very Satisfactory
36	10	Satisfactory
37	11	Satisfactory
38	10	Satisfactory
39	12	Satisfactory
40	14	Very Satisfactory
41	12	Satisfactory
42	10	Satisfactory
43	12	Satisfactory
44	11	Satisfactory
45	8	Fair
46	10	Satisfactory
47	12	Satisfactory
48	9	Satisfactory
49	13	Very Satisfactory
Total	529	
Mean	10.79	Satisfactory

As shown in Table 1, 59.18% of learners got satisfactory performance during the pretest. 20.42% out of Forty-nine learners got fair performance during the pretest assessment. 18.36% of learners out of forty-nine got very satisfactory performance during the pretest and 2.04% got excellent performance in the pre-test assessment. This means that the learners are in the process of acquiring fundamental abilities that will serve as the foundation for their future learning and development.

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B. Scores of the Learners After the Use of Gamification

Table 2 shows the level of performance of the learners after the use of gamification is very satisfactory as indicated by the mean of 13.94 as presented. The results mean that the learners benefited from the intervention which was the use of gamification. From satisfactory to very satisfactory level of performance, almost all the learners moved to a very satisfactory level of performance which is very consistent.

Table 2
Level of Performance of Grade 4 Learners After the Use of Gamification (N=49)

Learners	Post- Test	Descriptive Equivalents
1	13	Very Satisfactory
2	16	Very Satisfactory
3	18	Excellent
4	16	Very Satisfactory
5	12	Satisfactory
6	12	Satisfactory
7	16	Very Satisfactory
8	17	Excellent
9	10	Fair
10	11	Satisfactory
11	13	Very Satisfactory
12	15	Very Satisfactory
13	19	Excellent
14	16	Very Satisfactory
15	12	Satisfactory
16	10	Fair
17	9	Fair
18	15	Very Satisfactory
19	10	Fair
20	16	Very Satisfactory
21	18	Very Satisfactory
22	15	Very Satisfactory
23	15	Very Satisfactory
24	13	Very Satisfactory
25	14	Very Satisfactory
26	15	Very Satisfactory
27	16	Very Satisfactory
28	17	Excellent
29	15	Very Satisfactory
30	14	Very Satisfactory
31	12	Satisfactory
32	16	Very Satisfactory
33	18	Excellent
34	14	Very Satisfactory
35	15	Very Satisfactory
36	15	Very Satisfactory
37	11	Satisfactory
38	13	Very Satisfactory
39	16	Very Satisfactory
40	17	Excellent
41	16	Very Satisfactory
42	15	Very Satisfactory
43	16	Very Satisfactory

44	16	Very Satisfactory
45	11	Satisfactory
46	17	Excellent
47	15	Very Satisfactory
48	14	Very Satisfactory
49	13	Very Satisfactory
Total	683	
Mean	13.94	Very Satisfactory

Score	Descriptive Equivalents	Learners	Percentage
17 – 20	Excellent	7	14.29
13 – 16	Very Satisfactory	28	57.13
9 – 12	Satisfactory	7	14.29
5 – 8	Fair	7	14.29
0 – 4	Needs Improvement	0	0.00
Total		49	100

As shown in Table 2, 57.13% of learners achieved a very satisfactory level of performance after the use of gamification. This implies that after repeatedly playing or using games after the pretest, the majority of the learners improve their reading comprehension skills. Using gamification played a significant role in their understanding and mastery of the reading selection or lessons. This outcome indicates that gamification can be an interactive tool to promote engagement, active participation, or a deeper level of comprehension.

On the other hand, 14.29% of learners in the excellent level of performance; and ased to 14.29% learners in the fair level of performance as shown in Table 2. This indicates that using gamification can be effective for most of the learners and gamification may not be effective too. As observed by the teacher-researchers these learners had difficulty in reading as well as coping with the lessons since the first quarter thus, they are given constant remediation after the class.

Roth (2020), on the benefits of playing games with children. Using different types of games like gamification is usually considered an entertaining activity for both grown-ups and children. Playing cards and puzzles is beneficial for dexterity and eye-hand coordination. The simple action of holding playing cards in their small hands helps children develop two main motor skills. The cognitive skills triggered by playing card games with learners are numerous: from memorization to matching number and pattern recognition and the promotion of more complex in other learning areas depending on the difficulty level. Increasing difficulty levels makes learners use their intellect more in providing solutions and finding new ways of winning in the game. Playing is fun, so learning can be, too.

C. Significant Difference in the scores of the Learners Before and After the Use of Gamification.

The difference in the mean scores of the learners in the pretest and post-test to determine their performance level before and after the use of gamification is shown in Table 3. As presented earlier in the previous tables, the mean of learners in the pretest before the use of gamification is 10.79 described as satisfactory while the post-test after the use of gamification is 13.94 described it as very satisfactory. The the computed $t=6.07$ shows that there is a significant difference before and after the use of gamification, therefore, the null hypothesis is rejected. This implies that the use of gamification is effective in enhancing reading comprehension skills in Grade 4 learners at Aguinaldo Elementary School.

Playing games such as gamification can be one of the interventions to enhance learners' reading comprehension skills, interpersonal and other skills. It can also be an effective way to family together for some quality bonding time. By using gamification younger children get the opportunity to distinguish the alphabet and numbers from each other, which is helpful in school and elsewhere in life. Playing games like the use of gamification can be an effective way for parents to teach life lessons in a controlled manner. Hence, Teachers used

game-based learning as a supplement tool to expand conceptual understanding in online or play-based contexts (PenState, 2021).

Table 3
Significant Difference in the Scores of Learners Before and After the Use of Gamification

Learners	Pretest	Posttest	D	D ²
1	8	13	5	25
2	11	16	5	25
3	17	18	1	1
4	12	16	4	16
5	9	12	3	9
6	7	12	5	25
7	10	16	6	36
8	12	17	5	25
9	8	10	2	4
10	6	11	5	25
11	9	13	4	16
12	11	15	4	16
13	17	19	2	4
14	11	16	5	25
15	9	12	3	9
16	6	10	4	16
17	8	17	9	81
18	9	15	6	36
19	7	10	3	9
20	12	16	4	16
21	15	18	3	9
22	11	15	4	16
23	13	15	2	4
24	10	13	3	9
25	10	14	4	16
26	11	15	4	16
27	13	17	4	16
28	11	17	6	36
29	10	15	5	25
30	7	14	7	49
31	9	14	5	25
32	15	16	1	1
33	11	18	7	49
34	13	14	1	1
35	10	15	5	25
36	11	15	4	16
37	10	11	1	1
38	12	13	1	1
39	14	16	2	4

40	12	17	5	25
41	10	16	6	36
42	12	15	3	9
43	11	16	5	25
44	8	16	8	64
45	10	11	1	1
46	11	17	6	36
47	9	15	6	36
48	13	14	1	1
49	9	13	5	25
N=49				
SUM	529	683	191	987
MEAN	10.79	13.94	3.89	

t-comp = 6.07

Level of Significance: 0.05

Degree of freedom, df: = 48

Therefore:

t-comp=6.07

$t_{0.05, 48df}=2.01$

Result: Significant Difference

Decision: Reject Ho

Accept Ha

The result of the one-tailed t-test indicates that there is a statistically significant difference between the pretest and the post-test. The observed effect is large enough to be considered statistically significant.

The result agreed with the study of Jumaroh, et al (2022), the use of gamification educational media has been proven successful and has a positive impact on the learning process and learners' education learning outcomes. The gamification game media stated that the feasibility of the module by validator and with a total percentage of 100%. This game media can be used by learners in the field because it has good practicality with a percentage of 88.88%. Thus, the gamification game media was developed in research, thus this media is suitable for use by learners.

Similarly, the study of Alotaibi (2024), results show that game-based learning has a moderate to large effect on cognitive, social, emotional, motivational, and engagement outcomes. The findings suggest that game-based learning can be a promising tool for learner educators to promote learning and development. Game-based learning has gained popularity in recent years as a tool for enhancing learning outcomes in children. This approach uses games to teach various subjects and skills, promoting engagement, motivation, and fun. In early childhood education, game-based learning has the potential to promote cognitive, social, and emotional development.

IV. CONCLUSION

The findings of the study are the following level of performance of the grade 4 learners before the use of gamification in enhancing the reading comprehension skills is satisfactory, the learners are very satisfactory level in their performance after the use of gamification and there is a significant difference in the level of their performance of the learners before and after the use of gamification.

In general, gamification is an effective tool in enhancing the reading comprehension skills of grade 4 learners. By engaging in games, memory exercises, problem-solving, and social interaction, learners can develop essential cognitive abilities that will serve them well in their future academic and social endeavors.

Finally, the study proved effective, and the beneficiaries of this are both the teachers and the learners if implemented during their class discussions and make classroom management meaningful and enjoyable.

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