EFFECTIVENESS OF CLASSROOM GAMIFICATION IN MULTI-GRADE SCHOOLS

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ABSTRACT

The study determined the effectiveness of classroom gamification in teaching as a strategy for students' academic performance. The multigrade teachers' respondents administered this strategy to learners enrolled in Grades 5 and 6 in the four (4) identified multigrade schools of Bayabas District in Surigao del Sur Division during the Academic Year (AY) 2023-2024. Moreover, this study utilized interactive game creators in PowerPoint as a gamification strategy in teaching literacy.

The experimental method, specifically the quasi-experimental design of the research, was used with a research-made survey instrument as the primary tool for obtaining data. It used descriptive and inferential statistics. The profile of teachers: 100% were female, 71% were age 25 years and below, 50% had a bachelor's degree as their professional qualification, and 50% a master's degree; both 50% had 1 to 5 years and 11 to 15 years of experience, and lastly 71% got teaching-learning training attended. On the profile of learners, 51% were female, and 68% were 12 to 14 years old. The pre-test profile of the two classes has mean scores in the Traditional method obtained a mean score of 23.45. At the same time, the gamification instruction approach obtained a mean score of 26.72. When the two classes were exposed to different methods and approaches, one used the traditional method, and the other used a gamification instruction approach. The classes gathered different results in the post-test achievements. The Traditional method obtained a mean score of 38.54, while the class utilizing the gamification instruction approach obtained a mean score of 39.54. This is proof that using the gamification instruction approach is most effective in the teaching and learning process in teaching literacy. These findings should reassure educators of the effectiveness of the gamification approach. There was no significant relationship between the teachers' profile and the level of effectiveness of the classroom gamification strategy. Because testing using Pearson R correlation, as viewed in Table 5, shows no significant relationship. However, a class with a substantial relationship between the sexes was achieved on the students' profiles. There is a considerable difference between the pretest and post-test achievement of multigrade learners taught using gamification and traditional methods.

In the problems encountered, the indicator "learners are motivated to participate in activities simply to earn points or rewards" gained the number 1 spot with a mean of 4.79, which highly impacts the teacher's use of the gamification instruction approach. Based on the study's results, a proposed intervention plan can be designed to enhance the development of the gamification instruction approach.

Keyword: *Literacy Skills; Gamification Instruction Approach; Gamification Strategies; and Interactive Activities*

1. INTRODUCTION

Gamification in the classroom means incorporating elements of games in the teaching and learning process. It has recently shifted to make classroom activities exciting and enjoyable. Gamification can also encourage students to get

involved and stay motivated while learning the lessons, instructions, and processes to learn, use, and apply the characteristics of game rules (Marczewski, 2023). This study uses gamification as gameplay in game-based learning in multigrade schools. This study will aim to identify the influence of gamification activities on the student's academic success in literacy, their attitude towards the subject, and learning skills achieved using game-based PowerPoint. It sought to analyze whether games are effective for learning in the context of multigrade education and whether they contribute to language skills.

Games have acquired much importance as teaching and learning resources within active learning methods. As Anak and Hua (2021) indicate, "The goal of incorporating gamification into education is to present a more engaging, attractive, and effective learning experience for the student. In addition, gamification has found widespread application in various domains, including language (Chen et al., 2020). For that reason, "gamification offers students a fun, interactive, and non-threatening learning environment." Therefore, gamification and game-based education are famous ways that use game components to encourage desirable attitudes and mechanisms that yield educational results (Kiryakova et al., 2021).

In the recently conducted pre-test by the Division of Surigao del Sur this school year 2023-2024, the Mean Percentage Score (MPS) ranged from 50% to 64% in learning outcomes. Despite various efforts to improve education, there is still a significant gap in achieving consistently high levels of academic achievement. Students have difficulty comprehending and expressing ideas clearly, literacy speaking activities, and patterns. They faced the challenge of extracting meaning from the content. However, the potential of gamification to address these challenges and improve student outcomes is reassuring. Moreover, the inability to participate in class interactions and discussions negatively influences their self-confidence and performance in the literacy learning process. It forced them to provide instruction since they pressed to meet the curriculum schedule. These may pressure learners, decline their motivation, and block their progress.

Thus, gamification is an effective way of upgrading learners' performance in different classroom settings. It must help enhance student performance through gamification in the locality and the school. Efforts need to quantify the effectiveness of gamification on learners' achievement in multi-grade education. The outcomes of this study furnish valuable data about people involved in the educative process. It displayed how the proper implementation, tools, and methods can improve teaching and learning goals. The study detailed the significance of selecting effective teaching schemes and materials to use. It also stressed the positive impact on teachers and students, making the educational setting engaging and successful.

1.1 Theoretical Framework

Education is a vital tool for striving for economic development. We educate ourselves because of our dreams and goals in life. In this study, several possibilities have been constituted in research pedagogy to describe, justify, and foretell the itinerary, induction, degree, and continuity of learning attitudes (Linnenbrink-Garcia & Patall, 2019).

This study is guided by the Basic Motivational Model, which is an adaptation of the general motivation model by Heckhausen and Heckhausen (2019). This model elucidates the fundamental aspects of human motivation and how various factors influence people's desires and behaviors, drawing from Motivation Theory (1950) as revised by Practical Psychology (2023), and Expectancy Value Theory by Tolman and Lewin (2021).

According to Murphy and Alexander (2020), each theory has its terms and concepts to describe aspects of motivated behavior, making these theories slightly hard to apprehend. In addition, researchers adopt their new language and expand on existing thought, making it hard to distinctly tell apart between assorted models. Later, Heckhausen and Gollwitzer (2019) prolonged the framework to the Rubicon model of action period of time to specify a clear extremity between a state of psychological feature and a voluntary mental attitude.

The Rubicon framework theory, a powerful tool for educators, researchers, and educational policymakers, offers a promising approach to understanding human decision-making and volition. With its four stages, it guides individuals from setting objectives based on their desires to translating these goals into action, and finally, evaluating the results. This model, when understood and applied, can provide a hopeful outlook on human volition and motivation, leading to informed decisions in the educational field.

Another significant theory is the Motivation Theory, initially introduced in 1950 and later revised by Practical Psychology in 2023. It emphasizes stimulus-response and views the student as a blank slate. Learning is an active process where learners associate stimuli and responses with their learning experiences, enabling them to form connections and build knowledge based on the information they receive. The theory also recommends incorporating specific game components, such as point systems, levels, and rewards, to foster positive attitudes and mechanisms leading to educational outcomes.

A recent pre-test by the Department of Education, Division of Surigao del Sur, for the academic year 2023-2024 revealed a Mean Percentage Score (MPS) ranging from 50% to 64% in learning outcomes. Despite efforts to improve education, consistently achieving high levels of academic performance continues to pose a challenge. However, there is hope. Students need assistance understanding and expressing ideas, engaging in literacy activities, and comprehending content. Gamification has the potential to significantly enhance student outcomes, offering a promising solution to address these challenges.

Educators, as the key players in the literacy learning process, hold immense power in shaping their students' future. Their ability to provide effective instruction directly influences their students' progress. With the right support and strategies, educators can overcome the challenges and empower their students on their learning journey, reinforcing their sense of responsibility and empowerment.

On the other hand, the Expectancy-Value Theory, rooted in research by Tolman (2022) and Lewin (2021), is a practical and applicable framework. It justifies psychological features based on the senses, like the likelihood of attainment and the quality of the goal of action. Expectancy arises from situational incentives, reflecting the perceived likelihood of successfully performing a current action. Meanwhile, the value component gauges the desirability of an action, influenced by both situational incentives and anticipated outcomes (Atkinson, 2019).

In Atkinson's (2019) achievement motivation theory, expectancy and value were assumptive to be reciprocally affiliated. The greater the desirability, the more complex the feasibility of an action and vice versa. Hence, somebody heeded deliberate immanent measures to determine the inducement worth of an undertaking. Nevertheless, it argued that the possibility of a negative reciprocity between expectancy and value was unreasonable. In a contemporary scene, expectancy and value notions collectively foretell achievement-related selection and execution (Wigfield & Eccles, 2022).

1.2 Conceptual Framework

Today's educators confront challenges that demand innovative and effective teaching approaches. This study will explore the application of gamification theory, which integrates game-like elements such as rewards (e.g., money, points, badges) to enhance extrinsic motivation. Interestingly, despite its association with external incentives, motivation within gaming contexts stems from intrinsic sources. Hartmann and Gommer (2021) argue that games possess an inherent ability to captivate individuals, leading to deep engagement and enjoyment during gameplay.

As the researcher has focused on different aspects, interpretations and definitions have been produced. The attainment of merged gamification in educational activity is the causative factor in the learning geographical area. Previous studies have accented the implication of learning conditions, whether online, offline, or hybrid, in shaping how pupils move with gamification and their whole learning resultant Huang and Hew, (2021).

The study examines the effectiveness of an innovative instructional method that uses gamification to enhance educational quality and, most importantly, to boost student motivation, as outlined in DepEd Order No. 39, s. 2016. This research aims to improve the understanding of incorporating gamification in education, especially in multigrade learning environments. Educators should recognize their students' diverse learning needs and adapt their methods accordingly, as emphasized by DepEd in 2021 when developing teaching strategies and approaches.

1.3 Objectives of the Study

The study aims to assess the effectiveness of gamification in multigrade schools. Specifically, it seeks to answer the following problem:

1. What are the profiles of respondents in terms of:
1.1 Age;
1.2 Sex;
1.3 Educational qualification;
1.4 Years of experience; and
1.5 Relevant training and seminars attended?
2. What is the academic performance of the participants before and after the utilization of the gamification strategy?
3. Is there a significant relationship between the respondents' profile and the effectiveness of classroom gamification.
4. Is there a significant difference in academic performance between the two groups of participants?

5. What challenges are encountered during the implementation of gamification?
6. Based on the study's results, what is the proposed intervention program?

2. METHODOLOGY

2.1 Research Design

This research used the experimental method. This is based on the fact that two groups of learners were studied: 11 intact groups were subjected to the experimental method, and 11 intact groups were subjected to the traditional method.

Also, the study used the quasi-experimental design subject to groups considering the fact that Grade 5 and 6 students are already assigned to their respective classes with their respective teachers. Thus, the researcher used existing multigrade classes. This quasi-experimental design is called the non-equivalent control group, wherein a pre-test—post-test was given.

The researcher believed this was the appropriate design for the experiment because classes were used "as in," so possible effects from the reactive arrangement were minimized. Subjects may not even be aware that they are involved in the study.

2.2 Research Respondents

This research was confined to the classroom gamification strategy used in teaching multigrade classes. Complete enumeration was used for the teachers' respondents. Most teachers' respondents promote the purpose of teaching to help students increase their literacy ability. Furthermore, four (4) teachers have experience teaching multigrade for at least two years. Thus, they are mature enough to contribute to this research.

Two classes were chosen as the researcher's subjects for the students' respondents. One class has 11 learners, and the other has 11 learners. Twenty-two learners were selected as subjects for each class to ensure equal representation in both classes, considering some baseline indicators.

Table- 1: Population and Respondent of the Study

	Teachers	**Students**
Class A (Experimental)	2	11
Class B (Traditional)	2	11
Total	4	22

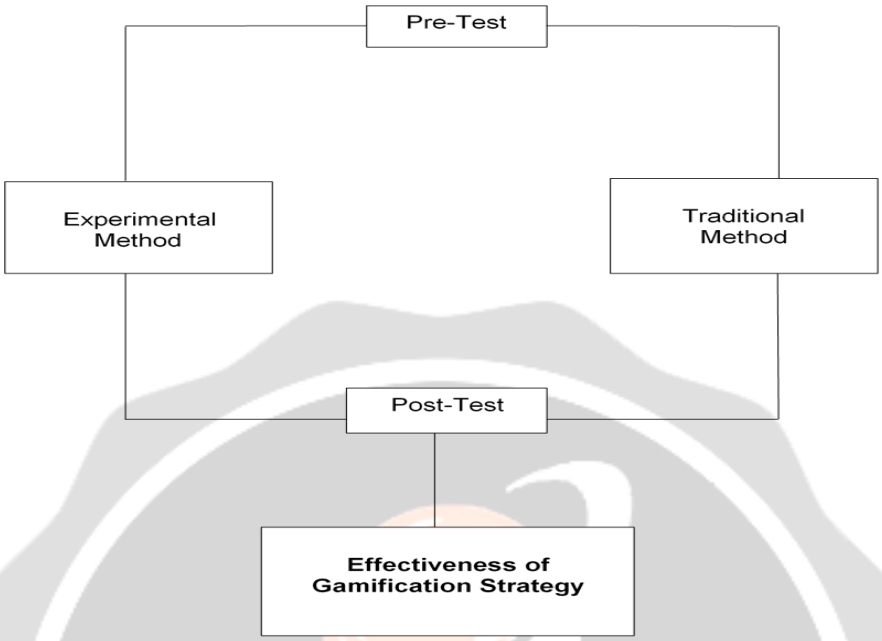
2.3 Research Instruments

This research paper utilized research instruments comprising the profiles of teachers' and learners' respondents as part 1. Part 2 includes activities in the lesson during a certain period of instruction in the literacy subject to assess students' academic performance. It would draw their performance before using the gamification strategy and after using the said instructional materials.

Management of Classes

In this study, the experimental and control groups used multigrade classes of Grades 5 and 6. The activity was exposed to the use of gamification strategy, while the latter was exposed to the traditional method. Both groups were given a pretest before treatment. The pretest of the two classes was simultaneously administered. After subjecting the students to all the lessons covered for the period, the post-test was administered.

Figure 1 presents the flow chart of the study.



The flow chart of the study management of classes explains that the pre-test was administered to the two classes, the control group and the experimental group, before the experimental period. After subjecting the learners to the various learning areas of literacy covering the lesson reflected in the gamification strategy, both using the experimental method and the traditional method, the post-test was conducted.

2.4 Data Gathering Procedure

Before conducting a pretest and post-test, the researcher sought approval from the school. After securing approval, the school principal was requested to allow the study to proceed.

Hence, gathering the needed data for the study employed the following steps: the researcher sent a letter seeking permission to conduct the survey to the Division Superintendent. After that, the District Supervisor, School Principal, and multigrade teachers of Grade 5 and 6 pupils were informed of the research to be conducted in their areas of jurisdiction.

After securing the permission, the pre-test and post-test were administered. The researcher utilized the Philippine Informal Reading Inventory (Phil IRI) materials for pre-test and post-test. Phil IRI is an assessment tool used in DepEd as a classroom-based assessment tool to measure and describe students' reading performance. The information gathered from the assessment is not only informative but also practical, as it can help classroom teachers design and provide appropriate reading instruction for their students. The researcher then personally administered and facilitated the gathering of data. All data pertinent to the topics of this study were gathered personally by the researcher.

This study was uniquely designed to evaluate the impact of classroom gamification in literacy subjects, particularly English, and to identify the hurdles encountered in implementing gamification. Two groups of 11 learners were exposed to the experimental treatment, while the other groups of 11 learners were part of the traditional or control groups.

The researcher asked the School ICT Coordinator, School Head, and teachers for permission to use the television and cord available in the two schools chosen as experimental groups. The researcher then meticulously prepared and shared the PowerPoint templates with the adviser to be used during remedial literacy classes. Meanwhile, the other two schools continued with the traditional teaching method.

In the preparation of gamified activities, the researcher utilized a PowerPoint template and designed using the stories available in the Division Quality-Assured Learning Activity Sheets (LAS) for Quarter 3 Grades 5, and 6. A printed copy of stories, which served as their reading materials, was provided to the participants. The researcher furnished a copy to the experimental and control groups for them to read and study. After the reading in the allotted time, the

participants in the experimental group were introduced to gamification and given the mechanics of the games. During the remedial reading session, the experimental group utilized PowerPoint templates: Bingo Game, The Car Race or Beach Rally, Mystery Box, Pick-a-Door, and Quiz Bee type. In the teacher's absence, the researcher conducted the discussion and experimentation and monitored the class for clarifications.

On the other hand, the control group, after receiving copies of the reading materials, engaged in a more traditional learning approach. Following the reading period, no gamified activities were introduced. Instead, the group's activities were dominated by traditional lectures, where the teacher imparts knowledge, and pencil and paper tests, which are used to assess the students' understanding.

The experimentation lasted for six weeks. Sessions were conducted twice a week for each group, and a post-test was given to assess the effectiveness of classroom gamification in multigrade school literacy. Moreover, participants were not aware that they were the subject of the study. They were coded to hide their identity, and the Data Privacy Act of 2012 was observed.

Statistical treatment was given to the numerical data of pretest and post-tests for the presentation and interpretation. To ensure an accurate and reliable statistical analysis, the researcher sought the expertise of a statistician.

2.5 Statistical Treatment of Data

To test scores with the equivalent numerical rating, they were subjected to a series of quantification processes and a thorough statistical treatment. Specifically, this paper employed a simple percentage for problem 1 and weighted mean scores to that data for problem 2. To establish the variations of variables in problem 3, the Pearson R tool for the significant relationship and T-test were utilized for problem 4 for the significant difference.

3. RESULTS AND DISCUSSION

3.1 The profiles of this study's respondents are vital for answering the questions. We used frequency and percentage counts to determine the profiles of teachers in the respondents' schools, including their sex, age, professional qualifications, years of experience, and relevant training attended.

Table- 2: Teachers' Profile

	CATEGORY	FREQUENCY	PERCENTAGE
SEX	Male	0	0%
	Female	4	100%
	Total	**4**	**100%**
AGE	25 years and below	2	71%
	31 to 35 years old	1	14%
	36 to 40 years old	1	14%
	Total	**4**	**100%**
PROFESSIONAL QUALIFICATIONS	Bachelor's degree	2	50%
	Master's degree	2	50%
	Total	**4**	**100%**
YEARS OF EXPERIENCE	1 to 5 years	2	50%
	11 to 15 years	2	50%
	Total	**4**	**100%**
TRAININGS ATTENDED	Teaching-learning	2	71%
	Management	1	14%
	Others	1	14%
	Total	**4**	**100%**

Gleaning at the table showed that female teachers controlled the school, with a higher percentage of 100 or 4 compared. It implies that females were more dominant in terms of sex. The data, therefore, affirmed, according to Williams (2018), that women are more inclined to employ the teaching-learning process in looking for effective classroom strategies to enhance students' academic performance. He implies that females nowadays dominate the

population and become the lead group in many aspects of education (Muijs & Reynolds, 2021). Numerous studies affirmed that teaching is regarded as feminine work. According to Mim (2020), economic factors contribute to "masculine and feminine work experience," and because of this, teaching is viewed with the assumed gender-related characteristics that go with it.

Similarly, a majority of women are observed in the teaching sector since 'they feel accepted' and the profession provides them tenure (job security) (Wang & Samba, 2019). The significant contribution of socio-cultural factors to this phenomenon is indeed noteworthy. It is crucial to note that this issue has yet to be discussed, even in the context of teacher training (Auvinen, 2020). This highlights the importance of our collective role in initiating and fostering more discussions on the dominance of female teachers in the education sector.

In terms of age, individuals aged 25 and below make up 71% or a frequency of 2. The lowest percentages were found in the 31 to 35 and 36 to 40 age groups, at 14% and one frequency, respectively. These results suggest that most teachers, over 50%, are tenured and expected to mature in their teaching strategies. It supports Carag's (2020) study, which emphasizes the importance of age in teaching strategies and suggests that more mature teachers tend to use more advanced teaching methods in their classrooms.

Additionally, the professional qualifications of teachers indicate that the percentages of those with bachelor's degrees and those who have completed master's units in the Master of Education program are equal. This equality in opportunities for professional growth reassures us of the fairness in our education system. It suggests that most teachers, regardless of their age, require additional time to pursue higher education. Vital (2021) also confirms that both young and older teachers may or may not choose to pursue a master's education, further highlighting the equal opportunities available.

Understanding teaching perspectives, trends, methodologies, and procedures provides teachers with the necessary resources to advance pedagogy, transition, and instructional techniques. It offers valuable insights and guidance for improving the effectiveness of multigrade instruction.

The study found that 50 percent of teachers had 1 to 5 years of experience, and another 50 percent had 11 to 15 years of experience. It suggests that teachers demonstrate dedication early in their careers and set a positive example for new educators. Therefore, Regalado (2021) emphasized the importance of instructors finding effective methods to maximize their students' potential through appropriate teaching strategies, particularly in gamification techniques.

Regarding the training they attended, as shown in the table, teachers trained in teaching-learning type obtained 71 percent or 2 frequencies, considered the highest category. The lowest category, management, and others, obtained a 14 percent or 1 frequency. Results implied that close to 70 percent of teachers trained in teaching-learning type based on respondents' answers. It further substantiates that teachers attended the program focusing on teaching and learning training. According to Aguilera (2020), the study's findings vividly justify that respondents trained on how to be good teachers.

This result is accurate in the study of Philip (2020), which states that training in the profile of the teachers in the realization of teaching strategies varies by sex, age group, professional qualifications, years of experience, and training attended. Hence, the teachers have common objectives to be committed to finding teaching strategies that suit learners' needs. It confirms that direction is needed—efforts of teachers into a purposeful intervention to attain the common goal. Further, in their study, Farooq (2021) observed that interactive strategies are a must that provide support and improve learners' practice. Thus, it is a vehicle that facilitates growth and academic achievement that may affect learners' performance.

3.2 Profile of Learners

Presented in Table 3 are the profiles of learners. It discussed sex and age. These data results give a snapshot of the learners' profiles as respondents in the study. Their management of day-to-day activities in the classroom dramatically affects the teaching strategies that a teacher may employ. Similarly, it recognized that specific interactive strategies are associated with proper implementation.

Table -3: Learner's Profile

	CATEGORY	FREQUENCY	PERCENTAGE
SEX	Male	10	49%
	Female	12	51%
	Total	22	100%

AGE	11 years old and below	9	32%
	12 to 14 years old	13	68%
	Total	22	100%

The table showed that females had a higher percentage of 51 percent or 12 compared to males, which is 49 percent or ten only. The study results imply that females were also more dominant in terms of sex, like the teachers' respondents. It negated the study of Palmquist and Jedel (2021) that gender did not influence attitude toward gamification studies displayed that the perception of game elements differs significantly between genders. One explanation for the insignificant results can be cultural and contextual. It raises an interesting point about the potential impact of socioeconomic backgrounds on gender perceptions. Since gender is argued to be a socio-contextual construct, cohorts from different socioeconomic backgrounds can provide different perceptions of different game elements.

The findings in the age category, particularly the higher percentage of 68 or 13 frequencies among 12 to 14-year-olds and the lowest percentage of 9 percent or 32 frequencies among 11-year-olds and below, align with existing research. These results suggest that the respondents' age is still maturing, which supports Palmquist and Jedel's (2021) assertion that age did not differ between younger and older age groups.

3.3 Distribution of Pre-test and Post-test Academic Performance of Learners in Traditional Method and Gamification Instruction Approach.

Table- 4: Distribution of Pre-test and Post-test Academic Performance of Learners in Traditional Method and Gamification Instruction Approach

Method of Instruction	N	Pre-test Mean	Post-test Mean
Control	11	23.45	38.54
Experimental	11	26.72	39.54
Total	22	25.08	39.04

Table 4 revealed the potential of the gamification instruction approach, as it showcases a significant difference between the pre-test and post-test achievement of learners using the traditional method and the gamification approach. The mean pre-test score obtained in the traditional method is lower than the pre-test mean score obtained in the gamification instruction approach, hinting at the promising future applications of the latter.

After the two groups of classes were exposed to a different method and approach, the gamification instruction approach demonstrated its effectiveness with a significantly higher mean post-test score of [insert score], compared to the traditional method's mean score of 38.54. This difference underscores the impressive potential of the gamification approach.

The result implies that the gamification instruction approach is more effective than the traditional method, as supported by the study of Castañeda (2021). It can be noted that the gamification instruction approach manifested positive effects on students' achievement in biological sciences. Students are motivated to learn through the instructional materials prepared by teachers.

The findings further illustrate, according to Castañeda (2021), that the achievement levels of learners in multigrade are an independent learning activity. It means that their behaviors and feelings motivate them to actively participate in the interpretation and manipulation practices using the gamification instruction approach, ultimately internalizing and mastering the concepts and theories emphasized in the interactive activities. The findings also explain that using a gamification instruction approach in literacy interests the learners.

3.4 Significant Relationship between the Profile of the Respondents

Table -5: Significant Relationship between the Profile of the Respondents and the Level of Effectiveness on the Classroom Gamification Strategy

VARIABLES TESTED	COMPUTED R	P-VALUE	DECISION	CONCLUSION

Teachers Profile				
Professional Qualification	0.093	0.842	Failed to Reject Null Hypothesis	Not Significant
Years of Experience	0.077	0.869	Failed to Reject Null Hypothesis	Not Significant
Relevant Trainings	0.213	0.647	Failed to Reject Null Hypothesis	Not Significant
Students Profile				
Sex	0.125	0.035	Reject Null Hypothesis	Significant
Age	0.066	0.269	Failed to Reject Null Hypothesis	Not Significant

Table 5 showed a significant difference between the two groups of respondents concerning the "professional attainment" variable for teachers. The computed R-value of 0.093 led to the inability to reject the null hypothesis, resulting in a conclusion of insignificance. Similarly, in the "years of experience" variable for teachers, a computed R of 0.077 was obtained, leading to the same outcome of failing to reject the null hypothesis and a conclusion that was not significant.

On the relevant training of teachers' respondents, a computed R was 0.213, which fails to reject the null hypothesis and leads to a non-significant conclusion. It can be noted that out of the different variables tested, sex has a significant relationship with the profile of learners, affecting academic performances.

To sum up, there is no significant relationship between the teachers' profile and the level of effectiveness of the classroom gamification strategy. On the learners' respondents, there is a significant relationship between sex. The success of high academic achievement in school lies in teachers' knowledge. Teachers should be involved in determining the effectiveness of the classroom gamification strategy. This result justifies the study of Walters (2021), who suggested that the role of a teacher requires a system for finding out the level of effectiveness of the classroom gamification strategy of the learners. For the implementation to be meaningful, it must provide learners relevant and timely feedback. Feedback is best when offered out of a commitment to the learners. Feedback intends to help the other learn and know their understanding. It means that feedback needs to be presented on an ongoing basis, as well as further suggestions and comments for improvement.

On the other hand, Nelson (2022), in a study exploring the relationship between respondents' profiles and the effectiveness of the classroom gamification strategy, found it to be effective in academic achievement, a finding of great relevance to our understanding of education. The analysis found no significant relationship between the profiles of respondents and academic achievement measures. The study also observed externalizing behaviors related to deficits in all profiles, while no association was found for the internalizing level of effectiveness of the classroom gamification strategy.

3.5 Significant Difference in the Pre-test and Post-test

Table- 6: Significant Difference in the Pre-test and Post-test between Traditional Method and Gamification Instruction Approach

Method of Instruction			Computed t	Tabular t@ 1%	Decision on Ho	Conclusion
	Pre-test	Post-test				
Control	23.45	38.54	23.61	1.812	Rejected	Significant
Experimental	26.72	39.54	7.24	1.812	Rejected	Significant

0.01 Level of Significance

Table 6 showed the test results between traditional methods and gamification approaches. Learners taught by traditional methods gained a t-value of 23.91, exceeding the critical value of 1.812 @ the 0.01 level of significance. As seen from the table, this leads the hypothesis to reject the null hypothesis of no significant difference. The results suggest that the respondents' knowledge in the two groups, particularly in literacy subjects, was not similar before the experiment. These implications underscore the importance of our study in shaping educational methodologies.

The results of the pre-test and post-test scores in gamification instruction approach obtained a computed t-value of 7.24. It is also greater than the critical value of 1.812 @ 0.01 level of significance. Again, the results imply that after

the experiment was conducted, the knowledge of the students in literacy subject is greater than that of the use traditional method.

It can be noted that the mean gain of pre-post achievement test of gamification instruction approach is higher than the pre-post achievement test of traditional method. This implies further that multigrade learners taught by gamification instruction approach are very much interested to learn the concepts and theories of literacy as a subject, thereby acquiring more knowledge and skills as they participate with their groups and peers as they practice actual manipulation of the activities. Gamification learning activities through instruction approach is more effective than traditional method. There is a significant difference on the pretest and post-test achievement on the group of multigrade learners taught by using gamification instruction approach and traditional method.

From the results presented, the gamification instruction approach obtained a computed t-value of 7.24. This is also greater than the critical value of 1.812 @ the 0.01 level of significance. Again, the results imply that after the experiment, the student's knowledge of the literacy subject was greater than that of the traditional method.

The mean gain of the pre-post achievement test of the gamification instruction approach is higher than the pre-post achievement test of the traditional method. It implies further that multigrade learners taught by gamification instruction approach are very interested in learning the concepts and theories of literacy as a subject, thereby acquiring more knowledge and skills as they participate with their groups and peers as they practice actual manipulation of the activities. Gamification of learning activities through an instruction approach is more effective than the traditional method. A significant difference exists between the pre-test and post-test achievement of multigrade learners taught using gamification and traditional methods.

3.6 Problems Encountered

Table 7: Problems Encountered in the Implementation

Indicators	Mean	Verbal Interpretation
The design of gamified activities is highly engaging and attention-grabbing.	3.39	Moderate Impact
Learners are motivated to participate in activities simply to earn points or rewards.	4.79	More Impact
Encourage learners for an interactive experience to feel involved by actively engaging with their senses, surroundings, and other classmates.	2.94	Moderate Impact
It has a negative impact that requires an individual to complete something using their time and effort.	2.59	Less Impact
The techniques or strategies include the element of surprise to keep an excitement that allow users to "unlock" certain features or content in the game by completing a task.	2.75	Moderate Impact
It helps the teacher in practical ways using the gamified activities.	2.93	Moderate Impact
It incorporates learning strategies such as problem-solving where individuals need to think outside the box to develop a solution.	2.80	Moderate Impact
It strengthens neutral pathways, increase cognitive skills such as memory and attention, enhance creativity and problem-solving skills.	2.73	Moderate Impact
It is an instructional method where students learn specific skills or knowledge from playing an actual game.	2.66	Moderate Impact
Learning takes educational content and transforms it into a game that students can play.	2.80	Moderate Impact
Total Over-all Mean	3.039	Moderate Impact

Legend: 4.20-5.00 More Impact 2.60-3.39 Moderate Impact 1.00- 1.79 No Impact
3.40-4.19 High Impact 1.80-2.59 Less Impact

Gamification uses game elements, such as points, badges, levels, and feedback, to enhance learning and motivation in educational settings. It can be applied to various subjects, formats, and audiences and has positively affected retention and performance. However, gamification is not a magic bullet that can solve all the challenges and risks of

education (Saro et al., 2022). Table 7 reveals the problems encountered in the administration of gamification strategies employed by the teachers on the learners' literacy skills.

Among the indicators, learners are motivated to participate in activities to earn points or rewards. The number 1, with a mean of 4.79, has a high impact on the employed gamification instruction approach by the teacher. Most respondents confirmed that the other indicators moderately impact the strategies employed. Most respondents confirmed that the other indicators moderately impact the strategies employed.

Findings showed that critical knowledge gaps were barriers to better learning gamification strategies. However, the significance of literacy to gamification strategies, in general, becomes apparent. El-Sagheer's (2022) groundbreaking findings on the role of literacy in comprehensible input-aiding gamification strategies have the potential to revolutionize the field of education. Literacy is the channel through which language is acquired. Through literacy, children learn to imitate and produce sounds they hear from people around them. Then, in time, they construct their mother tongue and become capable of communicating with others.

3.7 Intervention Program

This section outlines the proposed workshop to enhance the implementation of gamification in public multi-grade schools in Surigao del Sur Division. The study's findings indicate that certain variables, such as gender, significantly impact learners' profiles, which in turn affects their academic performance. It observed that learners are highly motivated to engage in activities that offer points or rewards, emphasizing the number 1 when using gamification instruction. Furthermore, there is a noteworthy correlation between the respondents' profiles and the perceived effectiveness of the classroom gamification strategy. It suggests a difference in how the teacher and the learners perceive the approach. This difference is statistically significant, as evidenced by a p-value lower than 0.05. Consequently, it is imperative to gather accurate information and take the necessary steps to improve the use of gamification in instruction.

4. CONCLUSIONS

From the findings, the following conclusions are arrived at: Profile was a determinant of the effectiveness of the gamification instruction approach for teachers and learners.

The pre-test results of the learners in multigrade classes serve as baseline data to improve the learners' achievement in the post-test. Their prior knowledge and skills in literacy concepts and theories could be more extensive.

The post-test achievement of the multigrade class using the gamification instruction approach is higher than that of the traditional class. The grand mean manifests that the level of instruction is appropriate and that the learners perceived and understood the effort of the instructional materials relevant to the activities.

There is no significant relationship between the teacher's and learners' profiles and the level of effectiveness of the classroom gamification strategy.

The significant difference between using gamification as an instruction approach is held to be multiplicative. It can make a substantial difference in learners' achievement.

Among the problems encountered, the indicator "learners are motivated to participate in activities simply to earn points or rewards" gained the number 1 spot with a mean of 4.79, which has a high impact on the teacher's employed gamification instruction approach. Teachers and students have a higher perspective on implementing scaffolding strategies.

An enhancement plan is needed to enhance the implementation of the gamification instruction approach.

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