INSTABRIGHT e-GAZETTE
ISSN: 2704-3010
Volume VII, Issue III
February 2026
Available online at https://www.instabrightgazette.com

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IMPACT OF GAMIFIED INSTRUCTION IN EARLY CHILDHOOD DEVELOPMENT IN PUBLIC ELEMENTARY SCHOOLS

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ABSTRACT

This research investigated the effects of gamified instruction on the early childhood development within the social, physical, emotional, and cognitive domains of kindergarten learners. It tried to ascertain the extent of the learning strategies used for gamified instruction, the level of pupils' performance, and the significant relationship between the two. In addition, it also sought to develop supplemental gamified instructional material to enhance the learning experience of kindergarten pupils and evaluate its level of acceptability among experts.

The study utilized a descriptive research design anchored on Constructivist Theory, Social Learning Theory, and Operant Conditioning. The respondents included seventy-two (72) kindergarten teachers, fifty-five (55) school heads, and five (5) jurors from selected public elementary schools in one of the cities in Albay Province during the first quarter of School Year 2025–2026. Data were collected using validated survey questionnaires and documentary analysis and were analyzed using frequency count, percentage technique, weighted mean, Analysis of Variance (ANOVA), and Spearman Rank Correlation Coefficient to determine significant differences and relationships.

The results revealed that the extent of learning strategies used in gamified instruction was rated as Very High Impact across all domains, with social development having the highest average weighted mean (3.74) and cognitive development the lowest (3.70). ANOVA results ($F = 0.800$, $p > 0.05$) showed no significant difference among the four domains, indicating that gamified instruction benefits all areas of learning equally. While 50% of pupils were at

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INSTABRIGHT e-GAZETTE
ISSN: 2704-3010
Volume VII, Issue III
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the Beginning stage, 37% were Developing, and 13% were Consistent, the Spearman Rank Correlation indicated no significant relationship between the extent of gamified instruction and performance levels. A supplemental gamified instructional material titled "Pick a Magic Box" was developed and rated Highly Acceptable (mean = 4.85) by jurors for its relevance, creativity, and developmental appropriateness. The study concluded that gamified instruction is an effective and engaging pedagogical tool that supports holistic learning and recommends its sustained use and further enhancement to promote mastery among kindergarten pupils.

Keywords: *gamified instructions, early childhood development, higher education*

INTRODUCTION

Every state has learning standards that tell what children should know and be able to do at certain ages. Kindergarten is an important milestone for 5 to 6 years-old learners. It is considered as a year filled with joy and excitement while learning new experiences and gaining new skills with their peers. Kindergarten pupils use their imagination and creativity while starting to learn basic facts and concepts.

Laws and policies relevant to kindergarten education in the Philippines include Republic Act No. 10157 (Kindergarten Education Act), Republic Act No. 10410 (Early Years Act), and Republic Act No. Republic Act No. 10533, also known as the Improved Basic Education Act of 2013, treats early childhood as an integral part of human development and mandates the provision of compulsory, developmentally appropriate kindergarten education. They use developmentally appropriate pedagogies and learning technologies for child-centered learning and delivery systems. They comply with the policy guidelines of the Department of Education within the framework of international quality standards for inclusive and equitable education.

This study was conducted over the different districts. The study intended to investigate how gamified instruction affects kindergarten pupils' holistic development. More specifically,

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ISSN: 2704-3010
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Available online at https://www.instabrightgazette.com

this study identified how technology-enabled game-based learning could impact on the social, physical, emotional and cognitive development of children. In this regard, the current study provides key information to both practitioners and policy makers as to how the use of gamified instruction within play-oriented digital learning environments in the 21st century classroom can improve the quality and equity of kindergarten education.

METHODOLOGY

This chapter presents an in-depth discussion of the research design, sources of data, respondents to the study, research instruments, instrument validation, ethical considerations, data gathering procedures, and the statistical tools used for data analysis.

Research Design

This study employed a descriptive research design using survey techniques and documentary analysis to systematically describe the research variables. As noted by McCombes (2023), descriptive research suitable for addressing questions related to what, where, when, and how, and it allows for the use of various methods to examine one or more variables.

In this study, survey techniques were used in collecting data about the impact of gamified instruction on early childhood development in public elementary schools to gain deeper understanding of the extent of the learning strategies using gamified instruction. In this method, it helped the researcher to obtain data needed to determine the impact of gamified instruction in cultivating the social, emotional, physical, and cognitive development of kindergarten learners in public elementary schools. Through this process the results of the data can be seen as reliable, valid, and accurate.

In this study, survey techniques were utilized through a questionnaire checklist given to the respondents, complemented by documentary analysis of relevant class records and instructional materials. The survey and document review together provided comprehensive data to answer every indicator based on the extent of the learning outcomes using gamified

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ISSN: 2704-3010
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instruction and the level of performance of kindergarten pupils after using gamified instruction in the teaching-learning process.

Sources of Data

In this research, there were two sources of data categorized into primary and secondary sources. The primary data, which included the level of performance of kindergarten pupils, were obtained from the responses of kindergarten teachers through the distributed survey questionnaire and documentary analysis. The secondary data were gathered from related literature and studies sourced from DepEd issuances, books, published and unpublished theses, research journals, magazines, and credible internet websites, which provided additional information relevant to the problem of the study.

Respondents of the Study

The respondents of this study are presented in Table 1. This study consisted of seventy-two (72) kindergarten teachers at fifty-five (55) public elementary schools, which have three sub-districts: District A with Clusters A, B, and C; District B with Clusters D, E, and F; and District C with Clusters G, H, I, and J. The respondents included seventy-two (72) kindergarten educators, fifty-five (55) school heads, and five (5) jurors who are knowledgeable on the Revised K to 12 Curriculum. These respondents were reliable data sources since they are working directly with kindergarten learners and are involved in early childhood education among the three districts in the setting of the study.

Table 1

Respondents of the Study

Public Elementary Schools	Number of Respondents		
	Teachers	School Heads	Total
East District	27	18	45

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West District	27	19	46
South District	18	18	36
Juror		**5**	
Total	**72**	**55**	**127**

Research Instruments

To achieve the objectives of the study, a survey questionnaire, teacher-made questions, and documentary analysis were utilized as data-gathering tools. The research instrument consisted of a teacher-made questionnaire checklist that focused on four (4) variables pertaining to the learning outcomes of kindergarten pupils using gamified instruction in in the teaching-learning process.

The questionnaire contained indicators measuring the extent of learning strategies used in gamified instruction across the domains of social, physical, emotional, and cognitive development. Each indicator was interpreted based on the percentage of its frequency count using the following rating scale: 4 – Very High Impact, 3 – High Impact, 2 – Low Impact, and 1 – Very Low Impact.

In addition, documentary analysis was employed to assess the performance level of kindergarten pupils categorized under Beginning, Developing, and Consistent stages. These instruments were deemed appropriate for this study, as they allowed the researcher to comprehensively identify the impact of gamified instruction on the holistic learning development of kindergarten pupils.

Validation of the Research Instruments

The questionnaire used in this study was validated by kindergarten teachers from other divisions which are not part of the respondents. Five respondents were requested to answer and evaluate the instruments. The necessary corrections suggested by the respondents were incorporated into the revision of the research instruments. The researcher provided

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an explanation of the purpose of the study on the impact of gamified instruction in the holistic development of kindergarten pupils. The instruments were finalized and distributed. The suggestions and recommendations provided by the adviser and panel members are incorporated into the revised questionnaire.

Ethical Considerations

Pursuant to the Data Protection Act (1998), the researcher adheres to the tenets of social and ethical responsibility. The researcher observed thorough measure to protect the identities of the respondents in conducting this study. The identities of the different respondents in selected public elementary schools were not revealed; instead codes were used to maintain privacy. Approval from Schools District Superintendent was secured before the conduct of the study, as well as an endorsement from the Public Schools Supervisor and the consent of the respondents to participate in the study. All the data gathered would be for research purposes only. In this study, all the statements, sources of data, and authors were acknowledged and recognized. The ideas and thoughts of different writers and researchers will not be claimed. All data gathered were treated with great confidentiality. The researcher did not commit to the fabrication of public documents, falsification or dishonesty in the interpretation of data. The actual findings of the research were revealed without prejudicial acts against the respondents. The researcher will not own the ideas of others; instead, proper credit was given to the rightful authors. Environmental ethics in the utilization of resources were also observed. I used reusable papers and folders in making the draft.

Data Gathering Procedures

Before the study was conducted, the researcher ensured that the research protocol and policies were strictly followed. A permission from the Schools Division Superintendent duly recommended and approved by the Dean of Republic Colleges of Guinobatan, Inc.

The researcher proceeded through several stages after obtaining all necessary permission letters from the relevant offices. This includes the following: gathering references

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for manuscript preparation and validating the curriculum and content. The distribution and response rate of the questionnaire are shown in Table 2.

A systematic research process was followed to ensure the reliability and validity of the results. The research was developed based on the impact of gamified instruction on kindergarten pupils. The research problem was identified, defined, and presented to the research panel for approval.

The research instrument used in this study was a survey questionnaire designed to measure the impact of gamified instruction on the holistic development of pupils in kindergarten. This test was adapted from previous studies and was verified to ensure statistical validity and reliability.

Table 2

Distribution and Retrieval of the Survey Questionnaire

Public Secondary Schools	Number of Questionnaire		Percent
	Distributed	Retrieved	
East District	45	45	100
West District	46	46	100
South District	36	36	100
Juror	**5**	**5**	**100**
Total	**127**	**127**	**100**

A permit to conduct the study was requested from the school principal to allow the researcher to carry out the study. The researcher submitted a formal letter of request from the Schools District Superintendent to conduct the study with kindergarten teachers.

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Once the request to conduct the study was approved, the researcher personally distributed the questionnaire to kindergarten teachers. The collected data were tallied, organized, and prepared for presentation in tables and statistical analysis.

The analysis, interpretation, and discussion of the results were conducted. After organizing the data and completing the analysis and interpretation, the researcher prepared the research report, which underwent a series of revisions and improvements. Finally, the completed research report was submitted and presented to the panel of examiners at the Graduate School.

Statistical Tools

In the context of the study, the statistical tools are Frequency Count, Percentage Technique, Weighted Mean, Analysis

of Variance (ANOVA)and Spearman Rank Correlation Coefficient.

Frequency Count. This is a measure used in organizing the score to facilitate the statistical result for the analysis and interpretation of data (Research Optimus 2022). In this study, this indicator was used to determine the number of respondents who rated the items according to their answer. Moreover, this tool was used to determine the variables.

Percentage Technique. It was used as a tool in which a relative proportion of the value taken from the general guidelines enumerated was determined by dividing the sum of the value of the entire group and multiplying them by one hundred percent (Korb 2013). In this research, it was used to quantify the teacher's response to the impact of play-based technology integration in early childhood development.

The formula used:

$$P = \frac{f}{N} \times 100$$

Where:

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P = percent

f = frequency

N= number of respondents

100 = constant

Weighted Mean. Weighted mean is the weighted average of observed data. It is the result of dividing the sum of the products of each observed value and the number of times it occurs by the total number of observations (Broto,2007). In the context of the study, it was used to quantify the data on the activities undertaken by the teachers and the assessment of jurors on the play-based technology integration materials prepared by the researcher. It will be used to make the interpretation more objective (Caruso and Cliff, 2007).

The formula is shown below.

$$\mathrm{Mw} = \frac{\Sigma \mathrm{f}\omega}{\mathrm{n}}$$

Where:

Mw = weighted mean

Σ = summation

f = frequency

w = weight

n = number of respondents

F-Test or Analysis of Variance (ANOVA). This is a test used to compare the means of two or more groups of independent samples. It is also known as Analysis of Variance (ANOVA) (Broto, 2007).

Sources of Variation	Degrees of Freedom (df)	Sum of Squares (SS)	Mean Squares (MS)	F-Value	
				Computed	Tabular

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Between Groups	K-1	BSS	$\frac{BSS}{df}$	$\frac{MSB}{MSW} = F$	See the table of F Distribution at 0.05 α
Within Groups	(N-1) (K-1)	WSS	$\frac{WSS}{df}$		
TOTAL	(N-1)	TSS			

Where:

F = F-Value (MSB divided by MSW)

K = number of groups

N = number of samples

CF = correction factor

TSS = total sum of squares minus the CF

BSS = between sum of squares minus CF

WSS = difference between the TSS minus BSS

MSB = mean squares between (BSS/df)

MSW = mean of squares within (WSS/df)

In this study, ANOVA was employed to determine whether there was a significant difference in the extent of learning outcomes using gamified instruction across the four developmental domains—social, physical, emotional, and cognitive - among kindergarten pupils.

Spearman Rank Correlation Coefficient. It is a nonparametric measure used to assess the strength and direction of the monotonic relationship between two ranked variables (Hauke & Kossowski, 2011). In this study, the Spearman Rank Correlation Coefficient was employed to determine the degree of relationship between the extent of learning outcomes

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using gamified instruction and the performance level of kindergarten pupils across different performance categories: Beginning, Developing, and Consistent.

$$rs = 1 - \frac{6\sum d_i^2}{n(n^2-1)}$$

Where:

r_s = Spearman Rank Correlation Coefficient

O = Difference between paired ranks of the two variables

E = Number of paired observations

Extent of the Learning Strategies
Used in Gamified Instruction
Along Social Development

This section focuses on the types of learning strategies employed in gamified instruction, with a special emphasis on social development. Social development in early childhood entails children's ability to communicate, interact, cooperate, and build positive relationships with peers and teachers. They are encouraged to share thoughts, work in groups, take turns, and use positive reinforcement to gain confidence in social settings via interactive activities, group work, and use of reinforcement. The key concepts of developing social competence and adaptability in young learners are supported through such strategies and the type of meaningful interaction and shared learning experiences.

Table 3 details the learning outcomes of kindergarten pupils in terms of their social development when they received such gamified instruction.

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Table 3

Extent of Learning Strategies Used in Gamified Instruction Along Social Development

Social Development Indicators	N = 127				Extent	
	4	3	2	1	WM	VI
1. Help to develop verbal communication skills of kindergarten pupils through picture cues and guessing games	102	20	5	0	3.76	VHI
2. Encourage Kindergarten pupils to share their ideas with their peers	97	23	7	0	3.71	VHI
3. Promote inclusivity by allowing all types of learners to interact regardless of their backgrounds	93	29	5	0	3.69	VHI
4. Strengthen relationship between peers and teachers by enjoying activities together	106	15	6	0	3.79	VHI
5. Boost social confidence of kindergarten pupils through positive reinforcement	99	24	4	0	3.75	VHI
Average					3.74	VHI

Range of Weighted Mean (WM)	Verbal Interpretation (VI)
3.50 – 4.00	Very High Impact (VHI)
2.50 – 3.49	High Impact (HI)
1.50 – 2.49	Low Impact (LI)
1.00 – 1.49	Very Low Impact (VLI)

The findings demonstrate that all types of social development indicators are given an interpretation of Very High Impact; each has a weighted mean between 3.69 and 3.79. It is

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of particular interest to note that the indicator strengthening relationship between peers and teachers by enjoying activities together was scored the highest weighted mean value (3.79), indicating that gamified teaching has a significant impact on the promotion of the quality of social relations and positive interactions in the classroom.

On the other hand, this category promotes inclusivity by allowing all types of learners to interact regardless of their backgrounds; it had the minimal weighted mean of 3.69 but was also rated Very High Impact. The final average weighted mean of 3.74 further supports this conclusion: Gamified instruction consistently and robustly enhances pupils' communication abilities and facilitates better cooperation, inclusiveness, and social confidence as well as a learning environment that is much more interactive and socially active.

Danniels and Pyle (2023), Heang et al. (2021), and the current study show that inclusive and play-based learning environments facilitate meaningful interaction between pupils and teachers, supporting collaboration, communication, and conflict resolution through teacher-facilitated and child-driven activities. Danniels and Pyle (2023), for instance, highlighted the contributions of play-based instruction to positive social engagement and cooperative behavior, whereas Heang et al. (2021) emphasized that interactive learning leads to mutual respect and social-emotional development among the youngest students.

Consistent with these findings, a strong finding of statistically significant positive indicators and overall high mean emerges in contemporary research that gamified instruction can lead to more positive social development in kindergarten students based on features such as inclusion and supportive classroom relationships. Conclusively, gamified teaching was found to be an appropriate method to develop social competence and encourage positive peer relations among children during the early childhood phase. It is recommended that teachers regularly incorporate play-based gamified activities into their day-to-day teaching to help support pupils' social growth and interpersonal skills further.

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Extent of the Learning Strategies

Used in Gamified Instruction

Along Physical Development

This section explains the relationship between physical development and the strategies of learning employed in gamified instruction. It emphasizes how movement, play, and interactive activities serve not only as avenues for physical growth but also as effective strategies that enrich the learning process. Integrating physical development into instructional design, this section emphasizes the importance of gamified methods to develop both motor skills and meaningful engagement in early childhood education.

Table 4 presents the Physical Development level of performance of kindergarten pupils after gamified instruction. For the physical development domain, the indicator Promotes physical development through interactive play got the highest weighted mean of 3.81, described as Very High Impact. This indicates that pupils learn best through movement play, and the use of gamified instruction improves pupils' coordination.

Table 4

Extent of Learning Strategies Used in Gamified Instruction Along Physical Development

Physical Development Indicators	N = 127				Extent	
	4	3	2	1	WM	VI
1.Gamified instruction enhance fine motor skills development of kindergarten pupils	85	37	5	0	3.63	VHI
2.Enhance gross motor skills of kindergarten pupils such as walking, balancing and running	99	21	7	0	3.72	VHI

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Physical Development Indicators	N = 127				Extent	
	4	3	2	1	WM	VI
3.Promote physical development through interactive play	108	14	5	0	3.81	VHI
4.Gamified instruction motivates children to stay active for extended period	97	25	5	0	3.72	VHI
5.Encourage children to improve their physical abilities through playing	102	20	5	0	3.76	VHI
Average					3.73	VHI

Range of Weighted Mean (WM)	Verbal Interpretation (VI)
3.50 – 4.00	Very High Impact (VHI)
2.50 – 3.49	High Impact (HI)
1.50 – 2.49	Low Impact (LI)
1.00 – 1.49	Very Low Impact (VLI)

In contrast, gamified instruction enhances fine motor skills development of kindergarten pupils received a weighted mean of 3.63 which is qualitatively interpreted as very high impact. Thus, the mean weighted average of 3.73 suggests that gamified instruction is very effective in strengthening involvement, coordination and psychomotor skills, both fine and gross motor skills through classroom play activities.

In addition, gamified activities help children learn about their own physical abilities when opportunities arise for them to improve motor coordination and body awareness through interactive movement (Zhang & Guo, 2025). This supports the current research's claim that gamified instruction can improve the physical development of kindergarten children by keeping them active and coordinated.

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Extent of the Learning Strategies Used in Gamified Instruction Along Emotional Development

This section presents the extent of learning strategies used in gamified instruction in relation to the emotional development of kindergarten pupils. It focuses on how interactive and play-based strategies support learners' self-confidence, emotional awareness, motivation, and resilience in a supportive learning environment.

Table 5 shows the extent of learning outcomes through the application of a gamified set of instructions among kindergarten pupils. The highest weighted mean in terms of the impact of gamified instruction is the first indicator Develops emotional skills of kindergarten pupils by building self-confidence with a weighted mean of 3.76. The second in terms of weighted mean is the indicator Develops emotional intelligence of kindergarten pupils through interactive and engaging experiences with a weighted mean of 3.76. Both are Very High Impact. This means that gamified instruction can impact children's self-confidence and emotional skills greatly.

The indicator Helps kindergarten pupils develop greater self-awareness by exploring their own emotions and attitudes and the indicator Provides engaging activities that promote resilience had the lowest computed weighted mean of 3.68, interpreted as Very High Impact. The overall average weighted mean was 3.72; Very High Impact and this conclusive result implies that gamified instruction has a very high impact on the emotional development of pupils in terms of their self-regard, motivation, and resilience in playing activities.

This finding supports the implication made by Carcelén-Fraile (2025) in his study, where he highlights that gamification supports children's and adolescents' emotional regulation and resilience by creating safe, supportive, and enjoyable educational settings. In line with this, the present review concluded that gamified instruction supports the emotional development of kindergarten children by promoting positive changes in children's attitudes towards learning and improving their emotional regulation and self-confidence.

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Table 5

Extent of Learning Strategies Used in Gamified Instruction Along Emotional Development

Emotional Development Indicators	N = 127				Extent	
	4	3	2	1	WM	VI
1.Develop emotional skills of kindergarten pupils by building self-confidence	100	23	4	0	3.76	VHI
2.Develop emotional intelligence of kindergarten pupils through interactive and engaging experiences.	100	23	4	0	3.76	VHI
3. Help kindergarten pupils develop greater self-awareness by exploring their own emotions and attitudes.	90	33	4	0	3.68	VHI
4. Help to reduce anxiety, stress and motivates the learners to learn through play	95	27	5	0	3.71	VHI
5.Provide engaging activities that promotes resilience.	91	31	5	0	3.68	VHI
Average					3.72	VHI

Range of Weighted Mean (WM)	Verbal Interpretation (VI)
3.50 – 4.00	Very High Impact (VHI)
2.50 – 3.49	High Impact (HI)
1.50 – 2.49	Low Impact (LI)
1.00 – 1.49	Very Low Impact (VLI)

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Extent of the Learning Strategies Used in Gamified Instruction Along the Cognitive Development

This section discusses the extent of learning strategies used in gamified instruction in relation to the cognitive development of kindergarten pupils. It highlights how gamified activities influence learners' attention, creativity, critical thinking, and memory retention through interactive and engaging learning experiences.

Table 6 reveals the level of cognitive development of kindergarten pupils using gamified instruction in learning outcomes. The highest-scored weighted mean indicator is the Influence the ability of learners to focus and engage in learning activities with a weighted mean of 3.72 and interpreted as Very High Impact, which indicated that gamified instruction sustains learners' attention and active participation during lessons. The weighted mean was 3.68, and the lowest score was Develops the critical thinking abilities of kindergarten pupils by answering Higher Order Thinking Skills questions, which was still interpreted as Very High Impact. A weighted mean of 3.70 (very high impact) indicates that gamified learning has a marked effect upon pupils' cognition, cultivating attention, creativity, and critical thinking with an interactive learning experience.

Table 6

Extent of Learning Strategies Used in Gamified Instruction Along Cognitive Development

Cognitive Development Indicators	N = 127				Extent	
	4	3	2	1	WM	VI
1.Influence the ability of learners to focus and engage in learning activities	97	25	5	0	3.72	VHI
2.Enhance the creativity and imagination of kindergarten learners through visualizing pictures and videos	95	25	7	0	3.69	VHI

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3.Develop the critical thinking abilities of kindergarten pupils by answering Higher Order Thinking Skills questions	93	27	7	0	3.68	VHI
4.The use of gamified instruction develops cognitive skills development of kindergarten learners compare to traditional play methods	93	29	5	0	3.69	VHI
5. Help to improve the memory retention of the learners by engaging them in teaching-learning process	95	27	5	0	3.71	VHI
Average					3.70	VHI

Range of Weighted Mean (WM)	**Verbal Interpretation (VI)**
3.50 – 4.00	Very High Impact (VHI)
2.50 – 3.49	High Impact (HI)
1.50 – 2.49	Low Impact (LI)
1.00 – 1.49	Very Low Impact (VLI)

Alotaibi (2024) also had the same findings, wherein he states that game-based learning helps young children develop key skills like problem-solving, computational thinking, and cognitive processing. This means we learn deliberately during play, which backs the current study's suggestion about how gamified instructional methods improve cognitive skills for kindergarten students. Learning is more meaningful, interactive, and intellectually stimulating.

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Significant Difference in the Extent of Learning Strategies Used in Gamified Instruction Among the Variables

This section presents the test of significant difference in the extent of learning strategies used in gamified instruction among the four developmental variables: social, physical, emotional, and cognitive. It aimed to determine whether variations existed in how gamified strategies influenced each domain of kindergarten pupils' development.

Table 7 examines the significance of gamified instruction on the differences in learning outcomes among the various groups across the four domains of social, physical, emotional and cognitive development.

Since the computed F value of 0.800 was lower than the tabular value of 3.23 at the 0.05 level of significance with 3 and 16 degrees of freedom, the result was not significant. Thus, the null hypothesis was accepted while the alternative hypothesis was rejected. These results indicate that there was no significant difference among the four developmental domains, suggesting that gamified instruction produced comparable levels of learning outcomes across social, physical, emotional, and cognitive areas, thereby supporting its balanced impact on early childhood development.

Kaimara et al. (2021) supports the researcher's findings that digital game-based learning creates balanced opportunities for the development of multiple learning domains, ensuring that children's growth is not confined to one area. This supports the findings of the present study that gamified instruction holistically contributes to the overall development of kindergarten pupils, showing consistent positive effects across all developmental domains.

Table 7

Significant Difference in the Extent of Learning Strategies Used in Gamified Instruction Among the Variables

Variables	Weighted Mean
Social Development	3.74

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Physical Development					3.73
Emotional Development					3.72
Cognitive Development					3.70
Average					**3.72**

Sources of Variation	**Degrees of Freedom**	**Sum of Squares**	**Mean Squares**	**F-Value**	
				Computed	**Tabular**
Between Groups	3	0.005	0.0016	0.800	3.239
Within Groups	16	0.031	0.0020		
TOTAL	19	0.036			

Level of Significance : 0.05
Remark: : Not Significant
Null Hypothesis: : Accepted
Alternative Hypothesis : Rejected

Level of Performance in Terms of the Percentage of Kindergarten Pupils Categorized Under Beginning, Developing and Consistent

This section presents the performance level of kindergarten pupils after the implementation of gamified instruction as observed by the teachers for the first quarter of the school year 2025–2026. It aimed to determine how gamified instruction influenced pupils' social, physical, emotional, and cognitive performance in classroom learning experiences.

As can be seen from Table 8, 50% of the respondents were Beginning (Mastery of Learning Competencies), 37% were Developing, and 13% were Consistent. Based on this information, it is known that approximately half of the participants in kindergarten were in the process of starting to develop, while a few of them had already acquired the learning competencies. This finding indicates that gamified instruction was able to successfully engage nearly all learners and motivate them; continued use could lead to more students achieving consistent performance. Implementing gamified instruction and interactive modes of instruction increases children's motivation to learn and develops their social skills by engaging

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ISSN: 2704-3010
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them and working together with peers (Cruz & Mateo, 2020). Based on the findings of the present study, gamified instruction seems to be an effective way of bringing the early and advanced stages by stimulating interaction and collaboration and maintaining students' interest in the classroom.

Table 8

Level of Performance in Terms of the Percentage of Kindergarten Pupils Categorized Under Beginning, Developing and Consistent

Level of Performance	Number Kindergarten Pupils	Percent
Beginning	1000	50
Developing	740	37
Consistent	251	13
Total	**1991**	**100**

Significant Relationship Between the Use of Gamified Instruction to the Performance Level of Kindergarten Pupils

This section examines the significant relationship between the use of gamified instruction and the performance level of kindergarten pupils across the Beginning, Developing, and Consistent stages. It aims to determine whether the extent of learning outcomes achieved through gamified instruction is significantly associated with pupils' progression in performance levels.

Table 9 shows how significant the relationship was when considering the extent of learning outcomes obtained from gamified instruction and the levels of performance of kindergarten pupils towards the Beginning, Developing, and Consistent stages.

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The average extent of learning outcomes in each stage was consistently high at 3.78, while the performance levels were 51.07% in Beginning stage, 36.99% in Developing stage, and 11.94% in Consistent stage. But the calculated Spearman rank correlation coefficient for all of the three stages (r_s = 0.069 for Beginning, r_s = -0.282 for Developing, and r_s = 0.027 for Consistent) were all lower than the tabular value of 0.600, which is at the 0.05 level of significance.

The findings suggest that there was no correlation between the degree of learning outcomes implemented with gamified instruction and the distribution of learners across the three performance trajectories. The null hypothesis was accepted, while the alternative hypothesis was rejected at all stages.

Similar to the findings described by Giráldez and Rodríguez (2022), who noted that gamified learning can improve learning engagement and participation but must be implemented on a regular basis to achieve measurable performance level improvement, the current study likewise did not identify a significant relationship between the extent of gamified instruction and pupils' performance levels over the Beginning, Developing, and Consistent stages.

Table 9

Significant Relationship Between the Use of Gamified Instruction to the Performance Level of Kindergarten Pupils

Factors	Beginning Stage	Developing Stage	Consistent Stage
Level of Significance	0.05	0.05	0.05
Degrees of Freedom	9	9	9

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Extent of Learning Outcome (Average of Weighted Means)	3.78	3.78	3.78
Level of Performance (in percent of Kindergarten Pupils)	51.07	36.99	11.94
Summation of D^2	153.0	211.5	160.5
Tabular r_s value	0.600	0.600	0.600
Computed r_s value	0.069	-0.282	0.027
Remark	Not Significant	Not Significant	Not Significant
Null Hypothesis	Accepted	Accepted	Accepted
Alternative Hypothesis	Rejected	Rejected	Rejected

It suggests that gamified instruction has been shown to motivate and promote foundational learning, but that it may not be sufficient to achieve immediate transitions to mastery with short periods of exposure. Finally, gamified instruction should be considered a support and developmental strategy, not an instant performance accelerator. This would suggest that teachers use gamified instruction consistently, in a much longer manner, and include differentiated scaffolding and guided facilitation support to encourage kindergarten learners to progress slowly and predictably into a higher performance stage.

Gamified Instruction Prepared

to Enhance the Learning of

Kindergarten Pupils

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Of all the developmental domains analyzed, it was the cognitive domain with the lowest weighted mean of 3.70, followed by the emotional domain at 3.72 and the physical domain at 3.73 in relation to Very High Impact. This indicates that gamified instruction worked well in all domains but only influenced activity that required a greater level of thinking, better emotional regulation, and physical coordination. In particular, benchmarks like improving fine motor skills (WM = 3.63), building self-awareness (WM = 3.68), and critical thinking (WM = 3.68) were represented in the lowest means across the tables, indicating that learners required extra assistance in these domains. Overall, the social domain exhibited the highest mean of 3.74, as students responded well overall to activity that promoted interaction, communication, and collaboration.

For the areas where the results were a bit lower, the researcher designed a supplemental gamified instructional material called "Pick a Magic Box." The tool was intended to augment cognitive, emotional, and physical growth thanks to vibrant, colorful imagery, sound effects, and animations that encourage active participation and sustained attention. Jurors recommended adding moving graphics to the content to help make learning even better and make it fun for the learners to experience, so this material was included in the final version. Consistent with Darling-Hammond et al. (2020), this output highlights that adequately structured gamified instruction facilitates developmentally appropriate, play-based learning, characterized by a combination of enjoyment and intentional learning—empowering younger learners with the opportunity to learn coordination, emotional awareness, and critical thinking through exploration and play. This approach allows children to take an active role in their own learning while feeling safe to try new ideas. Through guided play, they can practice problem-solving and build confidence in their abilities. As a result, learning becomes a meaningful experience that supports both personal growth and academic progress.

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Acceptability of the Prepared Gamified Instruction Materials as Evaluated by the Jurors

This section presents the level of acceptability of the prepared gamified instructional materials, as evaluated by selected jurors based on their appropriateness, developmental suitability, quality, and impact on kindergarten learners.

The table shows that all indicators obtained highly acceptable interpretations, with a general weighted mean of 4.85. The highest ratings (5.00) were given to the criteria that assess the material's appropriateness for kindergarten pupils and its ability to enhance cognitive, social, and physical development, while the lowest mean (4.20) still reflects high acceptability in terms of addressing learner diversity. These findings indicate that the jurors found the "Pick a Magic Box" supplemental gamified instructional material to be developmentally appropriate, visually engaging, and effective in motivating young learners. The results imply that the material successfully integrates educational content with interactive play, aligning with the principles of child-centered and inclusive learning for kindergarten pupils.

This finding is supported by Darling-Hammond et al. (2020), who highlighted that technology-integrated, play-based instructional materials, such as gamified PowerPoint presentations, enhance engagement, adaptability, and inclusivity in early learning environments. Therefore, it can be concluded that the prepared gamified instructional material is highly acceptable for kindergarten instruction, as it effectively combines simplicity, interactivity, and developmental relevance to foster holistic learning among young children.

Table 10

Acceptability of the Prepared Gamified Instruction Materials as Evaluated by the Jurors

Criteria for Evaluation	Weighted Mean	Interpretation

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1. The Gamified Instruction prepared is appropriate for kindergarten pupils	5.00	Highly Acceptable
2. The Gamified Instruction prepared is suitable to the diversity and abilities of kindergarten pupils.	4.20	Highly Acceptable
3. The Gamified Instruction prepared will enhance learners' cognitive development.	5.00	Highly Acceptable
4. The Gamified Instruction prepared will enhance learners' social development.	5.00	Highly Acceptable
5. The Gamified Instruction prepared will enhance learners' physical development.	5.00	Highly Acceptable
6. The Gamified Instruction prepared will enhance learners' emotional development.	4.80	Highly Acceptable
7. The Gamified Instruction will motivate and stimulate the learners' interest in learning.	5.00	Highly Acceptable
8. The quality of the Gamified Instruction prepared is simple, colorful, and easy to manipulate (attractive to kindergarten pupils)	4.80	Highly Acceptable
General Weighted Mean	**4.85**	**Highly Acceptable**

Range of Weighted Mean (WM)	**Verbal Interpretation (VI)**
4.21 – 5.00	Highly Acceptable
3.41 – 4.20	Very Acceptable
2.61 – 3.40	Acceptable
1.81 – 2.60	Fairly Acceptable
1.00 – 1.80	Poorly Acceptable

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Conclusions

Based on the findings, the following conclusions were drawn:

1.The implementation of gamified instruction resulted in very high learning outcomes in the social development of kindergarten pupils, particularly in enhancing communication skills, peer interaction, cooperation, and the formation of positive relationships within the classroom environment.

2.There was no significant difference in the extent of learning strategies among the four domains.

3. While many kindergarten pupils remained in the beginning and developing stages, the consistent application of gamified instruction fostered meaningful engagement and gradual progress toward higher performance levels.

4.The extent of gamified instruction showed no significant relationship with performance levels when analyzed separately across the beginning, developing, and consistent stages, suggesting that sustained exposure, differentiation, and teacher facilitation are essential for mastery.

5.The study identified supplemental gamified instructional materials as an effective and accessible gamified tool.

6.The supplemental gamified instructional material, "Pick a Magic Box," was evaluated as highly acceptable by jurors, confirming its suitability, appeal, and effectiveness as a learning tool for kindergarten pupils.

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