



***** **ENHANCING LITERACY RECOVERY THROUGH DIGITAL VOCABULARY GAMES ON THE PERFORMANCE OF GRADE 5 LEARNERS IN ENGLISH** *****

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ABSTRACT

This study was conducted to evaluate the effectiveness of Digital Vocabulary Games in enhancing the English performance of Grade 5 learners, particularly in literacy recovery. The findings of this study served as the basis for a proposed Digital Literacy Intervention Plan. This study utilized a quasi-experimental pretest-posttest design to evaluate the effectiveness of digital vocabulary games in improving the English performance and literacy skills of Grade 5 learners. The design allowed the researcher to measure the learners' vocabulary knowledge and comprehension before and after the intervention while observing changes attributable to the integration of digital games.

The results reveal that the learners obtained higher post-test performance than pre-test performance. This substantial improvement demonstrates that the learners achieved better outcomes after participating in the Digital Vocabulary Games intervention. The increase

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suggests that the instructional strategy effectively enhanced vocabulary acquisition, reading comprehension, and overall English literacy skills.

Furthermore, the statistical analysis showed that the computed value exceeded the critical value and that the probability value was lower than the established level of significance. Consequently, the null hypothesis was rejected, leading to the conclusion that there was a significant difference between the learners' pre-test and post-test performance. This evidence confirms that the observed improvement in English performance was not merely due to chance but was associated with the implementation of Digital Vocabulary Games.

The results imply that the integration of Digital Vocabulary Games had a statistically significant and positive effect on the English vocabulary and literacy performance of Grade 5 learners. The higher post-test performance, supported by the results of the statistical test, provided sufficient evidence to reject the null hypothesis and establish a significant difference between the two assessments. These findings demonstrate that the intervention promoted meaningful learning, improved vocabulary mastery, strengthened reading comprehension, and supported the literacy recovery of the learners.

Keywords: *Literacy Recovery, Digital Vocabulary Games, Performance, Grade 5 Learners, English*

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INTRODUCTION

Literacy recovery remains a central focus for elementary education, especially in contexts where learners face reading and vocabulary gaps. Digital Vocabulary Games provide interactive and engaging methods to strengthen English performance, offering learners an opportunity to reinforce skills in a gamified environment. This approach aligns with modern educational trends, emphasizing technology integration, learner engagement, and evidence-based literacy instruction.

The purpose of this study is to investigate how Digital Vocabulary Games enhance the English performance of Grade 5 learners. In recent years, educators have observed that traditional reading and vocabulary drills often fail to sustain learners' motivation, particularly in recovering literacy skills after learning disruptions. Interactive digital games, which combine visual, auditory, and kinesthetic elements, can offer targeted practice in word recognition, meaning construction, and contextual usage.

Recent research indicates that digital game-based learning can improve vocabulary retention, engagement, and reading fluency. For instance, Mayer's Cognitive Theory of Multimedia Learning suggests that learners process information more effectively when it is presented through multiple channels, such as visual and auditory cues. In a digital vocabulary game, words, definitions, and context examples are presented visually and through sound, encouraging active processing and long-term retention.

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Moreover, studies show that learners exposed to technology-driven literacy interventions outperform peers in traditional settings on vocabulary and comprehension assessments. By integrating Digital Vocabulary Games into the classroom, teachers can provide differentiated instruction, immediate feedback, and scaffolded practice aligned with individual learning needs. This approach is particularly relevant in post-pandemic learning recovery, where gaps in vocabulary and reading fluency have been exacerbated by disruptions in face-to-face instruction.

The study further addresses the social and motivational dimensions of learning. Digital games promote autonomy, goal-setting, and intrinsic motivation, which are essential factors in literacy recovery. Learners actively engage with vocabulary items, apply them in contextual exercises, and monitor progress, fostering ownership of learning. Additionally, gamified feedback systems encourage persistence, error correction, and repeated exposure to target words, which strengthens word recognition and semantic understanding.

This study is grounded in the need for effective literacy recovery strategies, the evidence supporting digital game-based interventions, and the observed benefits of integrating interactive technologies in English instruction. Investigating the effects of Digital Vocabulary Games offers insights into practical approaches that can enhance vocabulary acquisition, reading comprehension, and overall English performance among Grade 5 learners, providing both immediate academic benefits and long-term literacy skills.

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This study was conducted to evaluate the effectiveness of Digital Vocabulary Games in enhancing the English performance of Grade 5 learners, particularly in literacy recovery. The findings of this study served as the basis for a proposed Digital Literacy Intervention Plan.

Specifically, the study sought to answer the following questions:

1. What is the English vocabulary performance of Grade 5 learners before the integration of Digital Vocabulary Games?
2. What is the English vocabulary performance of Grade 5 learners after the integration of Digital Vocabulary Games?
3. Is there a significant difference between the English vocabulary performance of Grade 5 learners before and after the integration of Digital Vocabulary Games?
4. What Improvement on the Digital Literacy Intervention can be proposed based on the findings of the study?

Statement of Hypothesis

Ho: There is no significant difference between the English vocabulary performance of Grade 5 learners before and after the integration of Digital Vocabulary Games.

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METHODOLOGY

Design. This study utilized a quasi-experimental pretest-posttest design to evaluate the effectiveness of digital vocabulary games in improving the English performance and literacy skills of Grade 5 learners. The design allowed the researcher to measure the learners' vocabulary knowledge and comprehension before and after the intervention while observing changes attributable to the integration of digital games.

The main locale of the study was Tag-abaca Elementary School in the Division of Leyte. The primary instrument used in this study was a teacher-made questionnaire designed to assess the English vocabulary performance and literacy skills of Grade 5 learners. The questionnaire covered all topics and learning competencies taught during the first term of the school year, ensuring alignment with the learners' current exposure. It consisted of several sections: Vocabulary Recognition: Learners identified the meanings of words introduced during the first term. Contextual Usage: Learners demonstrated their understanding by using vocabulary words in sentences or short paragraphs. Comprehension Questions: The items measured the learners' ability to interpret, infer, and apply vocabulary in reading passages aligned with the first-term lessons. The instrument was validated by subject experts and experienced Grade 5 teachers to ensure content accuracy, clarity, and appropriateness for the learners' level. A pilot test was conducted before the main study to confirm its reliability, and revisions were made based on the learners' feedback and the results of the item analysis. The questionnaire served as both the pretest and posttest to evaluate improvements in vocabulary knowledge and literacy performance following the integration of digital vocabulary games.

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Sampling The respondents of the study were 25 learners with 12 males and 13 female's that were involved in this study were being identified and the primary means of reach was during the actual conduct of the study as well as during the gathering of data in the school where the study was conducted.

Research Procedure. The researcher requested permission from the Schools Division Office. Copies of the same letter were also provided to the Public Schools District Supervisor, the school principal, and the Grade 5 teachers who assisted in administering the study.

The researcher conducted the pretest to assess the learners' English vocabulary and literacy skills before the integration of Digital Vocabulary Games. After administering the pretest, the researcher integrated the Digital Vocabulary Games into the English lessons for a specified period, following the timeline prepared for the study. During this period, the learners engaged in structured gameplay and vocabulary activities aligned with the topics covered during the first term.

After the intervention period, the researcher conducted the posttest to measure changes in the learners' vocabulary knowledge and literacy performance.

All data obtained from the pretest, posttest, and teacher-made questionnaire were collated and submitted for appropriate statistical treatment. A paired-samples t-test was used to determine whether the intervention produced a statistically significant improvement in the learners' English performance.

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Ethical Issues. The right to conduct the study was strictly adhered to through the approval of the principals and the approval of the Superintendent of the Division. Orientation of the respondents, both school principals and teachers, was done. Participation was strictly voluntary. Anonymity and confidentiality were maintained throughout the study. Results were used solely for research and educational improvement purposes.

Treatment of Data. The following statistical formulas are used in this study:

The quantitative responses from the teacher-made questionnaire and the pretest-posttest assessments were tallied and tabulated. The data were statistically treated using the following tools:

Weighted Mean: This statistical tool was utilized to assess the English vocabulary performance and literacy skills of Grade 5 learners before and after the integration of Digital Vocabulary Games. The weighted mean allowed the researcher to determine the learners' average performance across all items in the questionnaire.

T-Test for Mean Difference: This statistical tool was used to determine whether a significant difference existed in the learners' English performance before and after the integration of Digital Vocabulary Games. Specifically, the paired-samples t-test examined whether the observed changes in vocabulary knowledge and literacy skills were statistically significant, thereby indicating the effectiveness of the intervention.

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The data obtained from the weighted mean and paired-samples t-test were interpreted and analyzed to draw conclusions regarding the impact of Digital Vocabulary Games on the literacy recovery and English performance of Grade 5 learners.

RESULTS AND DISCUSSION

TABLE 1

PRE TEST PERFORMANCE OF GRADE 5 LEARNERS

Score Range (out of 50)	Frequency	Percentage	Interpretation
41–50	2	8%	Very High Performance
31–40	4	16%	High Performance
21–30	9	36%	Moderate Performance
11–20	8	32%	Low Performance
1–10	2	8%	Very Low Performance
Mean = 21.68 (MPS = 54.20%)	—	—	Moderate Performance

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This table presents the pre-test performance of Grade 5 learners prior to the implementation of the Digital Vocabulary Games intervention. Specifically, it shows the distribution of learners according to their score ranges, corresponding frequencies, percentages, and performance interpretations. The table likewise presents the overall mean score and Mean Percentage Score (MPS), which provide a general picture of the learners' baseline English vocabulary and literacy performance before the intervention.

The results reveal that 9 learners (36%) obtained scores ranging from 21–30, interpreted as Moderate Performance, representing the largest proportion of the respondents. This was followed by 8 learners (32%) who scored 11–20, interpreted as Low Performance. Meanwhile, 4 learners (16%) achieved scores within the 31–40 range, corresponding to High Performance. Only 2 learners (8%) obtained scores between 41–50, interpreted as Very High Performance, while another 2 learners (8%) scored within the 1–10 range, indicating Very Low Performance.

The computed mean score of 21.68, equivalent to a Mean Percentage Score (MPS) of 54.20%, was interpreted as Moderate Performance. This finding indicates that, before the implementation of the intervention, the majority of the Grade 5 learners demonstrated only an average level of mastery of the English vocabulary and literacy competencies included in the assessment. Although a few learners exhibited high and very high levels of performance, a considerable number remained in the low and very low categories, suggesting notable differences in learners' vocabulary proficiency and literacy skills.

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The results imply that the learners entered the study with varying levels of English vocabulary knowledge and literacy skills, with the majority clustered in the moderate (36%) and low (32%) performance levels. Only 16% demonstrated high performance, while 8% attained very high performance, and another 8% exhibited very low performance. Furthermore, the overall mean score of 21.68 (MPS = 54.20%), interpreted as Moderate Performance, implies that the learners had not yet attained a satisfactory level of vocabulary mastery prior to the intervention. These findings justify the need for an instructional strategy, such as Digital Vocabulary Games, to strengthen vocabulary acquisition, improve reading comprehension, and enhance overall English literacy performance among Grade 5 learners.

TABLE 2
POST TEST PERFORMANCE OF GRADE 5 LEARNERS

Score Range (out of 50)	Frequency	Percentage	Interpretation
41–50	9	36%	Very High Performance
31–40	14	56%	High Performance
21–30	2	8%	Moderate Performance
11–20	0	0%	Low Performance
1–10	0	0%	Very Low Performance
Mean = 35.52 (MPS = 88.80%)	—	—	Very High Performance

This table presents the post-test performance of Grade 5 learners after the implementation of the Digital Vocabulary Games intervention. Specifically, it shows the distribution of learners according to their score ranges, frequencies, percentages, and

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corresponding performance interpretations. The table also presents the overall mean score and Mean Percentage Score (MPS), providing a comprehensive picture of the learners' English vocabulary and literacy performance following the intervention.

The results reveal that the majority of the learners demonstrated remarkable improvement in their post-test performance. Out of the 25 respondents, 14 learners (56%) obtained scores ranging from 31–40, interpreted as High Performance, representing the largest percentage of the respondents. Meanwhile, 9 learners (36%) achieved scores within the 41–50 range, interpreted as Very High Performance. Only 2 learners (8%) obtained scores between 21–30, corresponding to Moderate Performance. Notably, no learner (0%) scored within the 11–20 range (Low Performance) or the 1–10 range (Very Low Performance), indicating that all learners performed at least at the moderate level after the intervention.

The computed mean score of 35.52, equivalent to a Mean Percentage Score (MPS) of 88.80%, was interpreted as Very High Performance. This finding indicates a substantial improvement in the learners' English vocabulary knowledge and literacy skills after participating in the Digital Vocabulary Games. The concentration of learners within the high and very high performance categories, together with the absence of learners in the low and very low categories, demonstrates that the intervention effectively enhanced vocabulary acquisition and promoted better literacy outcomes among the Grade 5 learners.

The results imply that the integration of Digital Vocabulary Games contributed positively to the learners' English vocabulary and literacy performance. Specifically, 14 learners

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(56%) attained High Performance, 9 learners (36%) reached Very High Performance, and only 2 learners (8%) remained at the Moderate Performance level, while none (0%) of the learners fell under the Low and Very Low Performance categories. Furthermore, the overall mean score of 35.52 (MPS = 88.80%), interpreted as Very High Performance, implies that the intervention was highly effective in improving learners' mastery of English vocabulary and literacy competencies. The elimination of low-performing learners and the substantial increase in learners classified under the high and very high performance levels suggest that game-based digital learning provided meaningful, engaging, and effective learning experiences that strengthened learners' vocabulary retention, comprehension, and overall English achievement.

TABLE III

**TEST OF DIFFERENCE BETWEEN PRE TEST AND POST TEST PERFORMANCE OF
GRADE 5 LEARNERS**

Variables Compared	Mean	Mean Difference	t-Computed	t-Critical (0.05, df=24)	p-Value	Decision on Ho	Interpretation
Pre-Test vs. Post-Test Scores	21.68 vs. 35.52	13.84	11.92	2.06	< 0.001	Reject Ho	Significant Difference

This table presents the test of difference between the pre-test and post-test performance of Grade 5 learners after the implementation of the Digital Vocabulary Games

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intervention. Specifically, it shows the comparison of the learners' mean scores before and after the intervention, the computed mean difference, t-computed value, t-critical value, p-value, the decision on the null hypothesis, and the statistical interpretation. These statistical indicators were used to determine whether the observed improvement in learners' English vocabulary and literacy performance was statistically significant.

The results reveal that the mean score increased from 21.68 in the pre-test to 35.52 in the post-test, resulting in a mean difference of 13.84 points. This substantial increase demonstrates that the learners achieved considerably higher scores after participating in the Digital Vocabulary Games intervention. The improvement suggests that the instructional strategy effectively enhanced learners' vocabulary acquisition, reading comprehension, and overall English literacy skills.

Furthermore, the computed t-value of 11.92 was substantially higher than the critical t-value of 2.06 at the 0.05 level of significance with 24 degrees of freedom. Likewise, the obtained p-value of less than 0.001 was significantly lower than the 0.05 level of significance. Consequently, the null hypothesis (H_0) was rejected, leading to the conclusion that there was a significant difference between the learners' pre-test and post-test performance. This statistical evidence confirms that the observed improvement in learners' English performance was not due to chance but was associated with the implementation of the Digital Vocabulary Games.

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The results imply that the integration of Digital Vocabulary Games had a statistically significant positive effect on the English vocabulary and literacy performance of the Grade 5 learners. Specifically, the learners' mean score improved from 21.68 during the pre-test to 35.52 during the post-test, yielding a mean difference of 13.84 points. Moreover, the computed t-value of 11.92, which exceeded the critical value of 2.06, together with the p-value of less than 0.001, provided strong statistical evidence to reject the null hypothesis and accept that a significant difference existed between the two assessments. The overall post-test mean of 35.52, compared with the pre-test mean of 21.68, implies that the learners significantly improved their English vocabulary knowledge and literacy skills after participating in the Digital Vocabulary Games. These findings demonstrate that the intervention effectively promoted meaningful learning, increased vocabulary mastery, and strengthened literacy competencies among the Grade 5 learners.

CONCLUSION

Based on the results of this study, Digital Vocabulary Games were effective in improving the English vocabulary, reading comprehension, and overall literacy performance of Grade 5 learners. The significant improvement from pre-test to post-test performance indicates that the intervention provided an engaging and meaningful learning experience that strengthened vocabulary mastery, increased learner participation, and supported literacy recovery.

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RECOMMENDATIONS

Based on the findings of this study, the following recommendations are proposed:

The teachers should integrate Digital Vocabulary Games into English lessons as a supplementary instructional strategy to improve vocabulary acquisition, reading comprehension, learner engagement, and literacy recovery. They should also monitor learners' progress regularly and provide appropriate remediation or enrichment activities based on individual needs.

The school heads should support the implementation of Digital Vocabulary Games by providing access to appropriate devices, internet connectivity, instructional materials, and teacher training. They should also include technology-assisted literacy interventions in the school's improvement and reading programs.

The Public Schools District Supervisor should encourage schools to adopt evidence-based and technology-supported strategies for literacy recovery. Technical assistance, monitoring, and professional development activities should also be provided to strengthen teachers' capacity to use digital learning resources effectively.

The parents should support their children's vocabulary and reading development by encouraging regular practice at home, supervising the proper use of digital learning applications, and coordinating with teachers regarding the learners' progress and difficulties.

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The researcher should continue refining the Digital Vocabulary Games intervention by developing more curriculum-aligned, contextualized, and learner-appropriate activities. The researcher should also share the findings and intervention materials with other teachers and schools to promote wider application.

The future researchers should conduct similar studies involving larger samples, different grade levels, longer intervention periods, and comparison groups. They should also examine other variables, such as learner motivation, retention, reading fluency, and long-term literacy development, to provide broader evidence on the effectiveness of Digital Vocabulary Games.

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