

Enhancing Consonant-Vowel-Consonant (CVC) Word Patterns among Grade 1 Pupils Through Flashcard Gamification

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ABSTRACT

This research investigated the impact of flashcard gamification on the mastery of consonant-vowel-consonant (CVC) word patterns among Grade 1 students facing challenges in early reading development. Utilizing a quasi-experimental design with a one-group pretest-posttest framework, the study involved 30 Grade 1 pupils from Barangay Masico, Pila, Laguna, who were identified as struggling with CVC words. A comprehensive 35-item test, developed by the researchers, assessed pupils' performance in accuracy, fluency, and comprehension pre- and post-intervention. The intervention employed structured gamified flashcard activities designed to enhance learner engagement, sustain motivation, and promote active participation in CVC word learning. These activities

provided progressive levels of practice aimed at strengthening decoding skills and word recognition among young learners. The effectiveness of the intervention was determined through comparison of pretest and posttest results. Analyzing the results, the average pretest score of 10.67, categorized as moderate, improved significantly to a posttest mean score of 20.10, classified as high. This indicates a substantial enhancement in the pupils' understanding and application of CVC word structures. Additionally, while accuracy and comprehension achieved high levels of competency, fluency showed moderate progress, indicating a need for ongoing practice to facilitate reading automaticity. Statistical analysis demonstrated a significant difference in performance between pretest and posttest scores ($p=0.000$), validating the effectiveness of the intervention. The study concludes that implementing flashcard gamification provides an engaging and effective instructional approach, fostering early reading skills and significantly improving mastery of CVC word patterns among Grade 1 pupils.

Keywords: *CVC word patterns, flashcard gamification, Grade 1 pupils, early reading, reading skills, word recognition, decoding skills, learner engagement*

INTRODUCTION

Reading is a fundamental skill that serves as the foundation of all learning, especially in the early years of education. For Grade 1 pupils, the ability to read is not only essential for academic success but also for developing confidence and independence as learners. One of the most critical components of early reading instruction is phonics, particularly the mastery of consonant-vowel-consonant (CVC) word patterns. These simple word structures help learners understand the relationship between letters and sounds,

enabling them to decode unfamiliar words and build reading fluency. Without a strong foundation in CVC patterns, pupils may experience difficulty progressing to more complex reading tasks, which can affect their overall academic performance.

In the Philippine educational context, early literacy remains a priority under the Department of Education's initiatives to improve reading outcomes among young learners. However, despite these efforts, many Grade 1 pupils continue to struggle with basic reading skills. According to the Department of Education (2023), a significant number of learners in the early grades have not yet achieved the expected reading proficiency levels, particularly in phonics and word recognition. This situation highlights the need for more effective and engaging instructional strategies that can address learners' diverse needs and learning styles. According to Dela Cruz (2022), traditional teaching methods that rely heavily on rote memorization and repetitive drills may not be sufficient to sustain learners' interest and motivation in reading activities.

To address these challenges, educators have explored the use of instructional materials such as flashcards, which are widely recognized as effective tools in teaching early reading skills. Flashcards provide visual cues that help learners associate sounds with letters and words, making it easier for them to recognize and recall information. According to Santos (2021), the use of visual learning materials like flashcards enhances pupils' phonemic awareness and supports memory retention, especially among beginning readers. However, while flashcards are effective, their traditional use may become repetitive and less engaging over time, which can limit their impact on learners' motivation.

In recent years, gamification has emerged as an innovative approach in education that integrates game elements such as rewards, challenges, and interactive activities into the learning process. This approach has been shown to increase learners' engagement, participation, and overall learning experience. According to Reyes (2024), incorporating gamified strategies in classroom instruction significantly improves learners' motivation and encourages active participation, particularly among young learners. By transforming traditional learning activities into enjoyable and interactive experiences, gamification helps sustain learners' interest and promotes a positive attitude toward learning.

The Integration of flashcards and gamification presents a promising instructional approach in teaching CVC word patterns among Grade 1 pupils. By combining the visual and repetitive benefits of flashcards with the motivational aspects of gamification, teachers can create a more dynamic and engaging learning environment. This approach not only supports the development of phonics skills but also addresses learners' need for interactive and meaningful learning experiences. Moreover, it aligns with current educational trends that emphasize learner-centered and activity-based instruction in the classroom.

The general aim of this study is to enhance the mastery of consonant-vowel-consonant (CVC) word patterns among Grade 1 pupils through the use of flashcard-based gamification. Specifically, it seeks to determine how this approach can improve learners' ability to recognize, decode, and read CVC words effectively. Furthermore, this study aims to explore how gamified flashcard activities can increase learners' motivation, engagement, and participation in reading lessons. By implementing this innovative strategy, the study hopes to contribute to the improvement of early literacy instruction in the Philippine context.

Ultimately, this research is grounded in the belief that effective reading instruction should not only focus on skill development but also consider learners' interests and engagement. By introducing a creative and interactive approach such as flashcard gamification, this study aims to provide teachers with practical and effective strategies to support the reading development of Grade 1 pupils. Through this effort, it is hoped that learners will develop stronger reading foundations, leading to better academic outcomes and lifelong learning skills.

METHODS

Research Design

A quasi-experimental research design, specifically a one-group pre-test/post-test approach, is adopted for this study. This design is ideal for community-based educational research where the primary goal is to observe the impact of an intervention on a specific group of learners over time. The researchers will first assess the participants' baseline CVC proficiency, implement the flashcard gamification program, and then conduct a final assessment to measure growth. This structure ensures that any enhancement in CVC word patterns can be systematically tracked and compared against initial performance levels. As noted by Solihah et al. (2025), the use of pre-test and post-test assessments is a reliable way to determine the success of game-based activities in developing foundational reading abilities.

Research Locale

The study is conducted as a community-based intervention in Masico, Pila, Laguna, Philippines. Unlike traditional classroom-based research, this setting allows for a more personalized and flexible learning environment, catering to the specific needs of children within their local neighborhood. By bringing the literacy program directly into the community, the researchers can foster a supportive atmosphere that encourages active participation from both the pupils and their guardians. Community-centered literacy initiatives have been shown to bridge the gap for learners who require additional support outside of formal schooling hours, providing a vital supplement to their early childhood education.

Sampling Technique

The study utilizes purposive sampling to identify participants who currently demonstrate a "Frustration Level" in CVC word pattern, ensuring the intervention reaches those who will benefit most from the enhancement program. Arta and Anggraeni (2025) emphasize that targeted selection of struggling readers is essential for interventions aimed at correcting decoding error patterns in beginning readers.

RESULTS AND DISCUSSION

Pretest Mean Score of Grade 1 Pupils

Table 1 presents the baseline performance of the Grade 1 pupils in their mastery of CVC word patterns prior to the implementation of the intervention.

Table 1. *Pretest Mean Score of Grade 1 Pupils in the Mastery of Consonant-Vowel-Consonant (CVC) Word Patterns*

Pretest	Mean	SD	Verbal Interpretation
	10.67	5.23	Moderate

**29-35 Very High, 19-28 High, 10-18 Moderate, 1-9 Low*

The data in Table 1 reveals that the Grade 1 pupils obtained a pretest mean score of 10.67, which falls under the "Moderate" verbal interpretation. This suggests that while the learners possessed a fundamental knowledge of decoding and blending simple word patterns, they had not yet achieved a high level of proficiency. Furthermore, the standard deviation of 5.23 indicates a wide dispersion of scores, highlighting a diverse range of skill levels within the classroom where some pupils performed near the "High" range while others remained in the "Low" category. These findings underscore a clear opportunity for targeted instructional interventions to transition pupils from a moderate level of understanding toward mastery. The findings of this study are supported by Ederio (2023), who emphasized that young learners

often encounter difficulties in recognizing phonemes and identifying rhyming patterns despite having basic exposure to reading activities. This explains why the Grade 1 pupils in the present study achieved only a “Moderate” mean score of 10.67, indicating that they possessed foundational decoding and blending skills but had not yet attained mastery. Ederio further noted that differences in learners’ readiness, exposure, and comprehension abilities contribute to variations in reading performance, which supports the high standard deviation of 5.23 observed in this study, reflecting the diverse skill levels among the pupils. Additionally, the study highlighted the importance of structured and targeted instructional interventions to strengthen phonological awareness and decoding skills, reinforcing the present study’s implication that focused teaching strategies are necessary to help learners progress from a moderate level of understanding toward higher reading proficiency and mastery.

Table 2. *Extent of Mastery of Grade 1 Pupils in Consonant-Vowel-Consonant (CVC) Word Patterns During the Intervention*

Indicators	Mean	SD	Verbal Interpretation
Accuracy	4	0.63	High
Fluency	3	0.73	Moderate
Comprehension	4	0.61	High
Overall	4	0.65	High

*5 Very High, 4 High, 3 Moderate, 1-2 Low

As shown in Table 2, the Grade 1 pupils achieved an overall mean score of 4, corresponding to a “High” level of mastery during the flashcard gamification phase. Analysis of the specific indicators shows that both Accuracy and Comprehension earned a mean of 4 (“High”), indicating that the students were successful in correctly identifying word patterns and associating them with their respective meanings. However, Fluency recorded the lowest mean score of 3 (“Moderate”), suggesting that while pupils were accurate, they still required further practice to improve the speed and smoothness of their reading. The overall standard deviation of 0.65 indicates that the pupils’ performances were fairly consistent across the group during the intervention. The findings of this study are supported by Solihah et al. (2023), who found that gamified flashcards effectively enhance learners’ participation, phonological awareness, and overall engagement in reading activities. Their study explained that the use of interactive and visually stimulating flashcards motivates young learners to actively participate in identifying sounds, recognizing word patterns, and connecting words with meanings, which contributes to improved reading performance. This supports the present study’s results wherein the Grade 1 pupils attained a “High” level of mastery in both Accuracy and Comprehension, with a mean score of 4, indicating that the pupils were able to correctly identify word patterns and understand their meanings during the flashcard gamification phase. Furthermore, Solihah et al. emphasized that gamified learning promotes enjoyment and sustained attention among learners, helping create more consistent performance outcomes, which aligns with the low standard deviation of 0.65 observed in the present study. Although fluency remained at a “Moderate” level, the findings of Solihah et al. suggest that continued exposure to gamified reading activities can further strengthen learners’ speed and smoothness in reading over time.

Post Test Mean Score of Grade 1 Pupils

Table 3 presents the terminal performance of the pupils after their exposure to the flashcard gamification strategy.

Table 3. *Post Test Mean Score of Grade 1 Pupils in the Mastery of Consonant-Vowel-Consonant (CVC) Word Patterns*

Post Test	Mean	SD	Verbal Interpretation
	20.10	6.83	High

**29-35 Very High, 19-28 High, 10-18 Moderate, 1-9 Low*

The results in Table 3 show that after the instructional intervention, the Grade 1 pupils achieved a posttest mean score of 20.10, signifying a “High” level of mastery. This demonstrates a significant progression from the initial pretest mean of 10.67, moving the class into a higher bracket of literacy proficiency. Notably, the standard deviation increased to 6.83, suggesting that while the majority of the class improved, the gap between the highest-performing and lowest-performing students widened. This variance implies that while the strategy was successful, certain students may still require additional individualized support to keep pace with the class average. The findings of this study are supported by Marifuddin et al. (2025), who demonstrated that multimodal learning strategies, particularly those combining visual and auditory reinforcement, significantly improve learners’ word recognition, pronunciation accuracy, and overall literacy performance. Their study explained that when learners are exposed to both visual cues, such as flashcards and images, and auditory stimuli, such as guided pronunciation and sound recognition, they are more likely to retain information and develop stronger decoding skills. This supports the present study’s findings wherein the Grade 1 pupils achieved a posttest mean score of 20.10, interpreted as a “High” level of mastery, indicating substantial improvement in literacy proficiency after the instructional intervention. Furthermore, Marifuddin et al. emphasized that multimodal approaches cater to diverse learning styles and encourage active engagement, which may explain the notable increase in pupils’ performance from the pretest to the posttest. However, their findings also acknowledge that learners progress at different rates depending on their individual abilities and learning needs, which aligns with the increased standard deviation of 6.83 in the present study, suggesting that although most pupils improved, some still required additional individualized support to achieve the same level of proficiency as their peers.

Difference Between Pretest and Post Test Scores

Table 4 compares the pupils' performance before and after the implementation of the gamified strategy to determine its statistical significance.

Table 4. *Difference in the Pupils' Performance in CVC Word Patterns Before and After the Implementation of Flashcard Gamification*

Assessment	t-stat	p-value	Analysis
Pretest			
	-13.52	0.000	Significant
Post Test			

**p-value < 0.05, significant*

Table 4 reveals a highly significant difference in the pupils’ ability to recognize and read CVC word patterns following the introduction of flashcard gamification. The t-stat value of -13.52 and a p-value of 0.000 (which is well below the 0.05 threshold) indicate that the substantial jump in scores was not a result of random chance but was a direct consequence of the intervention. By transforming traditional drills into competitive and game-based activities, the intervention successfully bridged the learning gap, proving that gamified visual aids are potent tools for boosting early phonetic competence. The significant difference (p=0.000) validates the findings of this study are strongly supported by Hasanuddin and Prayoga (2025), who confirmed that flashcard-based instruction is significantly more effective than traditional teaching

methods in improving foundational literacy skills among young learners. Their study explained that flashcards enhance learners' ability to recognize letters, sounds, and word patterns through repeated visual exposure and interactive engagement, making reading activities more enjoyable and meaningful for pupils. This supports the present study's results, wherein the Grade 1 pupils showed a highly significant improvement in recognizing and reading CVC word patterns after the implementation of flashcard gamification, as evidenced by the computed t-stat value of -13.52 and p-value of 0.000. Hasanuddin and Prayoga further emphasized that gamified flashcard activities increase learner motivation, participation, and retention of phonetic concepts compared to conventional drill-based approaches. These findings align with the present study's conclusion that transforming traditional reading exercises into competitive and game-based activities effectively bridged learning gaps and enhanced the pupils' phonetic competence, proving the effectiveness of gamified visual aids in early literacy instruction.

Table 5. *Relationship Between Mastery in CVC Word Patterns & Post Test Scores*

Indicator	r	Strength of Relationship	p-value	Interpretation
Accuracy	0.679	Moderate	<0.001	Significant
Fluency	0.837	Strong	<0.001	Significant
Association	0.682	Moderate	<0.001	Significant

**0.90-1.00 Very Strong, 0.70-0.89 Strong, 0.50-0.69 Moderate, 0.30-0.49 Weak, 0.00-0.29 Very Weak **p-value<0.05, significant*

The statistical data reveals that all three reading indicators maintain a positive and statistically significant relationship with the post-test scores, given that all computed p-values are less than 0.001. Among these metrics, Fluency exhibits the strongest connection ($r = 0.837$), indicating a Strong correlation. This demonstrates that pupils who can decode CVC words with higher speed and automaticity secure substantially better test outcomes. Meanwhile, both Association ($r = 0.682$) and Accuracy ($r = 0.679$) manifest a Moderate correlation with the post-test results. Taken together, these findings imply that a student's capacity to map letter-sound connections, blend sounds accurately, and read text fluidly acts as a critical driver of overall literacy performance, with structural decoding speed and reading smoothness serving as the most decisive factors.

The findings of this study are supported by Cabillas, Patigayon, and Baluyos (2025), who noted that strengthening young learners' familiarity with foundational word patterns directly contributes to better decoding and significantly improves reading fluency. Their study emphasized that utilizing structured, interactive interventions to reinforce phonetic patterns helps learners overcome initial decoding barriers, which ultimately bridges early childhood literacy gaps and accelerates overall reading proficiency.

CONCLUSION

The findings of this study lead to the general conclusion that flashcard gamification is a highly effective, learner-centered intervention for enhancing CVC word pattern mastery in early childhood education. By transforming traditional, often monotonous, phonics drills into interactive and rewarding experiences, the intervention not only improves cognitive outcomes, specifically in word recognition and comprehension, but also fosters the intrinsic motivation necessary for sustained literacy development. The study demonstrates that when foundational reading skills are supported by multisensory, game-based strategies, Grade 1 pupils are better equipped to overcome decoding barriers. Ultimately, the significant progression from a moderate to a high level of proficiency confirms that integrating gamification into the primary school curriculum is a robust and essential practice for reducing literacy gaps and preparing young learners for successful academic communication.

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