Game-Based Learning Strategies and the Vocabulary Performance of Selected Grade Five Pupils

April Ann M. Remo[1], Cecilia Q. Velasco[2]
0000-0003-4099-9958[1], 00000-0027-900-6469[2]
aprilann.remo003@deped.gov.ph[1], cecilia.velasco@lspu.edu.ph[2]
Paaralang Elementarya ng Tipas, San Juan, Batangas, Philippines[1]
Laguna State Polytechnic University, San Pablo City, Laguna, Philippines[2]

Abstract

Strategies for teaching vocabulary help students understand and remember the vocabulary they have acquired through their language learning experience as vocabulary learning is one of the most important elements in the advancement of language learning and communication development. All other skills such as reading, writing, speaking, and listening are vocabulary-based. Relative to this, the study aimed at determining the effectiveness of Game-Based Learning Strategies in improving the Vocabulary Performance of Selected Grade Five Pupils. A quasi-experimental design was used to establish a cause-and-effect relationship among the variables. This study involved the selected Grade Five Pupils from Paaralang Elementarya ng Tipas. Two groups from different learning modalities were tested: one group was under Modular Distance Learning and the other group was from Online Distance Learning. The administration of the pretest and posttest were vital in measuring the performance of the students before and after their exposure to Game-Based Learning Strategies. The results of the study showed that there is a significant difference between the pretest and posttest of the respondents before and after exposure to Game-Based Learning Strategies. The use of the Vocabulary Wheel for Modular Distance Learning and Travel around the "words" for Online Distance Learning were found to be effective in terms of improving learners' word knowledge, word association, and word consciousness. On the other hand, no significant difference was found in the posttest of the respondents from Modular and Online Distance Learning. This finding supported the notion that both game strategies can be used in improving students' vocabulary performance in the two modes of learning delivery. This study also emphasizes the need to take into account the positive effects of game-based learning strategies in improving vocabulary performance. Choosing games and activities to help learners learn vocabulary effectively requires careful consideration.

Keywords: Game-Based Learning Strategies, Vocabulary Performance, Quasi-Experimental Design, Philippines

Introduction

Vocabulary learning is one of the most important elements in language learning and communication development. It is as important as the four main skills of listening, reading, writing and speaking. The words necessary for communication are actually basic knowledge. The more words a learner knows, the better for the learner. Since vocabulary knowledge is fundamental to learning, students who have

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advanced vocabulary can create an, even more, a larger pool of concepts and words and can use them in any way they want. On the other hand, a lack of proper vocabulary prevents students from fully understanding concepts. Vocabulary deficits hinder language comprehension and production.

Students learn new vocabulary from class teachers, classmates, or materials. The main task of the teacher in the classroom is to explain new words to the students and to strengthen their independence to improve their vocabulary. There are several ways such as to train them with a good vocabulary learning strategy, build independence to learn new words and make other efforts necessary to learn words.

Vocabulary learning strategies are part of language learning strategies, which in turn are part of general learning strategies. These are the actions students decide to take to understand and remember the vocabulary they have learned while learning a new language. One of the growing strategies that have become popular today is Game-Based Learning.

According to Trybus (2015), Game-Based Learning is an innovative teaching method that integrates game elements into education and learning, sometimes referred to as gamification.

Game-based learning (GBL) is an educational strategy that has become an integral part of modern education, shifting the focus from lecture and written assignment learning to game learning, especially in improve learners' vocabulary performance.

In this study, the researcher considered the report of the Program for International Student Assessment (PISA) of the Organization for Economic Co-operation and Development (OECD) in 2018 which showed students in the Philippines ranked the lowest among 79 countries in mathematics, science, and reading.

Poor learning outcomes were observed among students in the Philippines across all three assessments. Over 80% of Filipino students did not achieve a minimum level of reading proficiency, representing one of the highest proportions of low performers among all PISA-participating countries. This difficulty in achieving proficiency in the subjects covered in school was due to a lack of understanding of the language in which they were taught -in the case of mathematics and science, the English language.

Consequently, the researcher also observed and noted that the results of oral reading, word recognition, and reading level assessment through the administration of the Department of Education (DepEd) Philippine Informal Reading Inventory (PHIL-IRI) revealed that miscues on mispronunciation and repetition of words were identified among Grade Five pupils at Paaralang Elementarya ng Tipas.

Most pupils encountered miscues in mispronunciation and repetition of words in English and the comprehension check test data showed that many of the pupils had difficulty in answering the eight questions based on the graded passage they had read. This made them fall under the "frustration" category.

In addition, most pupils cannot read well especially English words thus making them slow readers this is due to their limited vocabulary. This leads to a communication gap between the teacher and learner creating hindrances in the effective teaching-learning process.

Grade Five pupils under the modular learning modality implemented for two years now, as of writing, tend to perform low on vocabulary-related activities based on the outputs submitted and graded.

These observations resulted in a proposition of conducting online support classes along with modular classes. Through online instruction, learners are engaged in activities that increase students' motivation and interest in learning vocabulary. The researcher incorporated the use of "games" in teaching vocabulary through Game-Based Learning using Vocabulary Games in both learning modalities therein.

In the study by Hidayat (2016), playing word games with students can help them improve their vocabulary mastery and can be an effective strategy in teaching English. The game helped students remember vocabulary more easily, and it also made them enjoy the learning process. It encouraged both

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competition and cooperation in the process of teaching and learning. It also became a good strategy for the teacher to use word games while taking into account the students' time and level.

Accounting for this, Bondaug (2021) pointed out that the impact of games, especially in this era of the technological revolution, is irreplaceable. Therefore, more materials for game-based learning need to be designed, developed, and validated to improve and improve learners' achievements.

Game-based learning makes classes entertaining and sustains effort and interest. The games allow young learners to interact, explore, and experiment with their surroundings. The use of games not only motivates students but also provides incentives and stimuli to use the language.

With this, the researcher uses Game-Based Learning Strategies and considers the influence of Game-Based Learning on students' vocabulary performance. Game-Based Learning strategies include the use of games such as vocabulary wheels and Travel around the "words".

Game-based learning (GBL) is based on a constructivist type of learning. Constructivism is an approach to learning that assumes that people actively build or create their knowledge and that reality is determined by the learner's experience.

Many have long recognized Jean Piaget's view of the role of play and its importance in development and learning. When looking at game-based learning from a cognitive constructivist perspective, the purpose of learners' involvement in games is to build mental models.

Play, according to Piaget, becomes more abstract, symbolic, and social as children progress through the stages of development. One way that play contributes to a child's cognitive development is to activate the schema so that the child can transcend direct reality. This can be achieved in this digital age through game-based learning. This learning allows students to learn how to solve problems, think critically, and make decisions through games. Interactive tasks are also customizable and fun.

Game-Based Learning (GBL) as a theory refers to borrowing specific game principles and applying them to the real environment to attract users (Trybus, 2015). Game-based learning is not only about creating games for students to play, but also about step-by-step introduction of concepts and designing learning activities that can guide users to their ultimate goal.

Game-based learning tools allow enthusiastic students to embrace learning instead of seeing it as a burden. Using games to teach vocabulary to young learners necessitates trained teachers who engage children in play while also mastering the linguistic aspect of the language. These tools make classes entertaining and sustain effort and interest. The games allow young learners to interact, explore, and experiment with their surroundings. The use of games not only motivates students but also provides incentives and stimuli to use the language.

The educational tools that integrate with game-based learning combine learning and play to achieve great results. The process choice of the tool to use also depends on the student's skills and interests. In addition to entertainment value, game-based learning tools have great educational potential. Games that are specifically designed to address specific issues or teach specific skills have been extremely successful because they are motivating, engaging, and interactive, and provide rewards and reinforcement to improve.

Generally, these theories influenced this research study in such a way that it focuses on the use of Game-Based Learning Strategies in improving the vocabulary performance of the students. Teaching vocabulary using games has become very important for English learners as it maintains their enjoyment and interest in learning and encourages the use of fearless and creative language.

Objectives of the Study

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The main purpose of this study was to determine the effectiveness of Game-Based Learning in improving the vocabulary performance of the selected Grade Five pupils in Paaralang Elementarya ng Tipas. Specific aims included the following: 1) to compare the significant difference between the pretest and posttest of the respondents before and after exposure to Vocabulary Wheel and Travel around the "words" Game-Based Learning Strategies; 2) to determine the significant difference between the posttest of the respondents who used Vocabulary Wheel and Travel around the "words" Game-Based Learning Strategies.

Methodology

This study focused on the effectiveness of Game-Based Learning (GBL) Strategies in the vocabulary performance of selected Grade Five pupils. The quasi-experimental research design was used since it aims to establish a cause-and-effect relationship among the variables.

The subjects were the Grade Five pupils at Paaralang Elementarya ng Tipas during the School Year 2021-2022. A total of 50 pupils participated in the experiment. It involved testing two groups, wherein 25 pupils used Game-Based Learning activities under the online learning modality and the other 25 pupils utilized Game-Based Learning strategies under the modular distance learning modality. Purposive sampling was the sampling method used in this study.

Since this study utilized a quasi-experimental research design, it involved the administration of a Pretest and Posttest. This tool measured the performance of the students before and after their exposure to Game-Based Learning Strategies.

The content of the Pretest/Posttest was based on the Department of Education (DepEd) K to 12 curriculum guide for English V under the domain of Vocabulary Development. These standards were the enabling competencies needed to understand and unpack the Most Essential Learning Competencies (MELCs).

The Pretest/Posttest consisted of 45 items, 17 of which were constructed to measure respondents' word knowledge, 17 for word association, and 11 items for word consciousness.

For this study, the researcher administered a Pretest to the respondents to assess their vocabulary performance. This determined the base scores that were used as a point of comparison. The Pretest/Posttest was consisted of 45 items. Words and phrases used, skills and competencies developed were aligned with the MELCs for the Third Quarter of SY 2021-2022.

Game-Based Learning Strategies were used in their instructions. Vocabulary Wheel for the pupils under the modular distance learning modality and Travel around the "Words" for the respondents under the online learning was the games used. Vocabulary Wheel game is a modified strategy adopted from a blog in English Language Learning of the Cambridge University Press and is defined as a handy learning tool that organizes words and their synonyms, as well as occasionally antonyms, in a circle.

Each respondent was provided with the Vocabulary Wheel kit placed inside a long brown envelope with clear instructions pasted on it. This game was done once a week for four consecutive weeks during the Third Quarter period. The Set of words included in the Vocabulary Wheel game varied every week based on their modules and the MELCs.

Travel around the "Words" is an adventure type of game created by the teacher through the use of MS Powerpoint. This strategy is also a modified strategy adopted from different online games. It is a

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combination of a quiz-like inspired game from the synonym and antonym quiz and a geo game inspired by online geography games but instead of searching for places, players will look for "words".

The players must complete and travel to all the destinations in the game by answering the questions in all 7 levels and collecting 7 tickets from their journey. The questions include looking for synonyms, antonyms, denotation and connotation of the words, and context clues.

Travel around the "Words" game was also played once a week for four weeks during the English class via an online platform. The objectives are aligned with their learning tasks in their modules and in the MELCs. Weekly Lesson Log was prepared and the game was integrated in the different parts of the lesson each week. The Set of words included in the Travel around the "words" game varied every week. The game was made using MS Powerpoint and saved as a slideshow and uploaded on the platform. Pupils downloaded the game and they were allowed to share their screens while playing.

After the exposure to Game-Based learning strategies, the level of performance of the respondents was evaluated through the administration of Post Test, which contains the same items as the Pre-Test. Results of the Pretest and Posttest of the Grade Five pupils were statistically analyzed with the data requirements of the study to determine the influence of Game-Based Learning on the vocabulary performance of the learner-respondents.

T-Test for two correlated samples was employed to determine and compare the before and after treatment in this research. T-test for the equality of means allowed the study to consider differences between two groups or sets of scores that are related.

Results and Discussion

1. Significant difference between the pretest and posttest of the respondents before and after exposure to the Vocabulary Wheel for modular distance learning modality

1.1. In terms of the Vocabulary Wheel for modular distance learning modality

Table 1
Significant difference between the pretest and posttest of the respondents before and after exposure to Game-Based Learning Strategies for Modular Distance Learning Modality

Vocabulary Performance	Pretest		Posttest		T	df	Sig. (2-tailed)	Verbal Interpretation
	Mean	Std. Deviation	Mean	Std. Deviation				
Word Knowledge	10.96	3.45	13.64	2.31	7.020	24	.000	Significant
Word Association	10.68	2.69	13.84	2.44	5.350	24	.000	Significant
Word Consciousness	3.92	2.18	6.72	1.86	5.881	24	.000	Significant

Table 1 presents the pretest and post-test results of the respondents in the vocabulary performance using a vocabulary wheel game in teaching English in a modular distance learning modality.

Based on the data presented, in terms of word knowledge with a mean of 10.96, t-value of 7.020; word association with a mean of 10.68, t-value of 5.350; and word consciousness with a mean of 3.92, t-value of 5.881, it is found to be with a significant difference as shown by the figures. Results are lower than 0.05 level of significance.

The use of the vocabulary wheel in improving vocabulary performance is seen as effective in modular distance learning modality.

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This is supported by the study of Bee Choo and Wahab (2016) which found that the use of the Vocabulary Wheel improved the pupils' language learning in vocabulary. Pupils were able to remember vocabulary easily with the help of images and words. It also encouraged their participation and fostered their interest in learning vocabulary.

Vocabulary games, including vocabulary wheels, are useful and effective tools that should be used in vocabulary classes, according to Rohani and Pourgharib (2013), because they bring real-world context into the classroom.

However, based on the findings, it can also be implied that among the three areas of vocabulary performance tested, the word consciousness area has the lowest mean, with 3.92 in the pretest and 6.72 in the post-test.

It can be seen that the majority of the respondents from the modular distance learning modality had difficulty answering the items in word consciousness since this area posed the lowest scores in the pretest conducted.

It can be seen that the majority of the respondents from the online distance learning modality had difficulty answering the items word consciousness since this area posed the lowest scores in the pretest conducted.

Learners' awareness of words and their different meanings, when used in different contexts, was seen as limited. Helping students become word conscious is an important goal for teachers across grade levels, especially teachers working with students who may have limited prior vocabulary exposure.

It was then improved after they utilized the Vocabulary wheel game included in this study. This strategy helped students enhance their vocabulary performance by immersing them in a "gaming" environment filled with words and their meanings. This is evident in the improvement in scores in the word consciousness area.

Additionally, Young learners can learn new words, form emotional connections to words, and utilize words more skillfully if their word consciousness is developed.

Word consciousness can help students improve their reading skills, and the teacher can help create a stimulating environment in which students learn about words.

When playing educational games, it is assumed that the game, as well as the interactions of players with the game, will motivate them. They will make the cognitive processing of game content easier. As a result, learning improves (Delacruz, 2012).

Thus, the vocabulary wheel game has much significance for students in learning vocabulary. One of them is to increase the student's ability in mastering vocabulary.

Teachers should make every concentrated effort to cater to the needs of students of different learning styles to maximize their learning in the classroom.

1.2. In terms of Game-Based Learning Strategies for Online Distance Learning Modality

Table 2 shows the pretest and post-test results of the respondents in the vocabulary performance using the Travel around the "words" game in teaching English in an online distance learning modality.

Based on the data presented, in terms of word knowledge with a t-value of 7.094; word association with a t-value of 4.733; and word consciousness with a t-value of 6.604; it is found to be with a significant difference as shown by the figures. Results are lower than 0.05 level of significance.

The use of Travel around the "words" in improving vocabulary performance is seen as effective in online distance learning modality. The results obtained here are consistent with those obtained by Ashraf et al. al (2014). They emphasized that online games can be effective in vocabulary acquisition because

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they create an interactive and motivating environment in which students can easily and subconsciously share their knowledge.

Students learn new words through games because they want to be the winner. In a relaxed setting, they compete and collaborate.

Table 2
Significant difference between the pretest and posttest of the respondents before and after exposure to Game-Based Learning Strategies for Online Distance Learning Modality

Vocabulary Performance	Pretest		Posttest		T	df	Sig. (2-tailed)	Verbal Interpretation
	Mean	Std. Deviation	Mean	Std. Deviation				
Word Knowledge	10.16	2.91	13.92	2.90	7.094	24	.000	Significant
Word Association	11.04	3.03	13.84	2.41	4.733	24	.000	Significant
Word Consciousness	4.96	1.99	7.52	2.06	6.604	24	.000	Significant

The cores of the games to be used in teaching have also an impact on their purpose and outcomes. These games should motivate and involve learners throughout the duration. The significance of game design elements in engaging children in learning.

Game design fundamentals such as challenge, Curiosity, and fantasy are regarded as intrinsically motivating for student-players.

Yip and Kwan (2006) pointed out in their study that students who were exposed to an electronic environment and games were more successful in learning new words than those who learned the same vocabulary through activity-based lessons.

One possible explanation for this finding is that students prefer greater autonomy in their learning and prefer to be in control of their learning when using vocabulary websites with games.

However, based on the findings, it can also be implied that among the three areas of vocabulary performance tested, the word consciousness area has the lowest mean, with 4.96 in the pretest and 7.52 in the post-test.

It can be seen that the majority of the respondents from the online distance learning modality had difficulty answering the items word consciousness since this area posed the lowest scores in the pretest conducted.

This is because the learners' experience with words and their different meanings, when used in different contexts, is limited. When students have a diverse range of experiences with words, their expressive vocabulary often increases.

Accordingly, creating an environment that encourages word learning is critical for promoting word consciousness, and teachers must encourage their students' vocabulary knowledge in the classroom by implementing strategies and tools that support and build on students' word consciousness.

Vocabulary-rich-environment can also be provided even in the virtual set-up as this study incorporated the use of the game as a strategy in teaching vocabulary in their online class.

Using games, it is a good way to increase exposure to vocabulary which enhances students' vocabulary acquisition.

The results also suggest that, based on the presented difference, the use of Game-Based Learning Strategies has an impact on developing the learners' vocabulary performance, gauging them to attain the objectives of the game, and bringing real-world context into the class under online distance learning.

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2. Significant difference between posttest of the respondents who used Vocabulary Wheel and Travel around the "words" Game-Based Learning Strategies

Table 3
Significant difference between the posttest of the respondents who used Vocabulary Wheel and Travel around the "words" Game-Based Learning Strategies

Vocabulary Performance	t-test for Equality of Means					
	95% Confidence Interval of the Difference					
	Lower	Upper	T	df	Sig. (2-tailed)	Verbal Interpretation
Word Knowledge	-1.210	1.770	.378	48	.707	Not Significant
Word Association	-1.380	1.380	.000	48	1.000	Not Significant
Word Consciousness	-.317	1.917	1.440	48	.156	Not Significant

Table 3 shows the analysis of the post-test score using a t-test for equality. Based on the data presented, there is no significant difference between the post-test of the respondents who used Vocabulary Wheel and Travel around the "words" games in terms of word knowledge (t-value of .378), word association (t-value of .000), and word consciousness (t-value of 1.440). Results are higher than 0.05 level of significance.

The results of this study indicate that even though the posttest of the respondents from Modular and Online Learning did not have a significant difference, this finding supports the notion that both game strategies can be used in improving students' vocabulary performance in the two modes of learning delivery.

Cahill (2020) stated that using games in digital lessons is a method of approaching online education in which the goal is to promote joy and fun in learning. Learning retention improves dramatically when students participate in gamified lessons.

Students, on the other hand, can always try again and choose a different strategy or answer if they fail a level, cultivating critical thinking, problem-solving, and creativity.

As game-based strategies are not only used in the online mode of learning, these have long been utilized in the traditional classroom setup where games were introduced, incorporated, integrated, and used in teaching instruction in English classes, as well as in other learning areas.

Yusof et. al. (2021) mentioned in their study that game-based learning also acts as an active learning environment and encourages learning activities that engage and challenge students to achieve the learning objectives.

Providing activities that go beyond simply memorizing new definitions will encourage deeper and more active processing in which relationships between words and help build these activities will help the learners examine semantic networks. been utilized in the traditional classroom setup where in games were introduced, incorporated, integrated and

It is "essential" for students to be actively engaged in and take increasing responsibility for their learning". Engagement is key to improvement with any skill or concept, including word consciousness.

However, students should not bear sole responsibility for their participation in word consciousness work. Teachers can increase student engagement by playing educational games that are also exciting and fun for their students.

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Games have proven to be a successful way to teach young learners vocabulary, but teachers and students have some challenges. Teachers need to understand the characteristics of their students to create a good learning environment.

Teachers of young learners need to choose a variety of creative games to get the young learner's attention, rather than being busy with other things. A careful selection of games to be included in the lesson should be done.

The use of games in teaching and improving vocabulary is a strategy that can help and encourage learners to acquire new words or phrases more easily.

Game-Based Learning strategies help create a communicative atmosphere where learners take an active role in playing and learning, at the same time. Vocabulary games highlight the necessary words intended for the learners to achieve their objectives.

Conclusions

Considering the findings of the study, the following conclusions were drawn:

1. There is a significant difference between the pretest and posttest of the respondents before and after exposure to Vocabulary Wheel and Travel around the "words" Game-Based Learning Strategies. The use of the Vocabulary Wheel for Modular Distance Learning and Travel around the "words" for Online Distance Learning were found to be effective in terms of improving learners' vocabulary performance in word knowledge, word association, and word consciousness. Thus, the hypothesis is rejected.
2. There is no statistically significant difference in the post-test of the respondents who used Vocabulary Wheel and Travel around the "words" Game-Based Learning Strategies. This finding supports the notion that both game strategies can be used in improving students' vocabulary performance in the two modes of learning delivery. Thus, the hypothesis is retained.

Recommendations

Established from the summary of findings and conclusion previously discussed and presented, the following recommendations are hereby suggested.

1. A careful selection of games to be included in teaching vocabulary in English should be done to ensure that these games are suited to the type of learners they have and the learning modality they use.
2. To take full advantage of Game-Based Learning strategies, it is necessary for teachers to fully understand the concept of "games" and "play" in the teaching and learning process.
3. Incorporating this study into a broader scope of participants by including more grade levels would also contribute to the findings and implications of the study.
4. For the teachers to be more familiar with the concept of Game-Based Learning, Learning Action Cells (LACs), training and seminars may be provided by the schools, districts, or divisions.
5. The findings of this study prompt further research and analysis for supporting data, and comparison and to examine more thoroughly the effectiveness of Game-Based Learning Strategies in improving learners' vocabulary performance.

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