Mobile-assisted Exercises in Improving learner's Vocabulary and Learner's Engagement

Anarose Altamira [1,] Arvy Diegas [2,] Glaiza Capadosa [3,] Rosemarie D. Gorero [4], Marlo C. Regalachuelo Jr. [5], Prof. Resty C. Samosa [6]

[1-5]*Colegio de San Gabriel Arcangel*
[6] *Colegio de San Gabriel Arcangel & Graceville National High School*
anarosealtamira@gmail.com [1], arvydiegas00@gmail.com[2], glaizacc04@gmail.com [3], rmbsed@gmail.com [4],
marlocaparasregal@gmail.com [5,] resty.samosa002@deped.gov.ph [6]

Abstract: *This study tried to identify the effectiveness of mobile-assisted exercise to improve learners' vocabulary and learning engagement amongst the thirty (30) Grade 4 learners of Kaypian Elementary School in the School Division of San Jose del Monte, Bulacan. This study made use of different researcher made and existing electronic media namely vocalanged, word wall, and google forms as research instrument and material in teaching and assessing learning. Pretest-posttest and Likert scale was utilized in this study to identify the effectivity of the innovative material in improving learners' vocabulary acquisition and engagement towards the innovative material. The main goal of this research paper is to enrich learners' vocabulary knowledge and positive engagement towards vocabulary acquisition and learning that would improve their competency and use the findings of this paper to design for the wide utilization of mobile-assisted exercises in teaching across curriculum.*

Keywords: learners' engagement, mobile-assisted exercise, vocabulary

INTRODUCTION

The COVID-19 Pandemic has affected many people and the branches of society particularly the educational sector. Since schools were forced to close temporarily, face-to-face classes are restricted and we were forced to adopt a new form of learning delivery such as offline learning (modular), blended learning, and online learning. Teaching English as a second language is difficult even before the pandemic hit, teaching the English language is not the same thing as being familiar to the English language, the English language is known to be difficult because of the complex syntax rule, strange spellings, and pronunciation (Sands, 2018) a difficulty exacerbated by the pandemic.

Vocabulary is defined by Vocabulary.com as a set of words in a language or sentence that you are trying to learn. Identifying the Connotative and Denotative meaning of words is important to readers. Dictionary.com (2016) defines Denotative as the literal or dictionary meaning of words while Connotative refers to the implied or inferred definition of a word, identifying the purpose of words will help learners grasp a better understanding of what is being conveyed in a given text. The lack of vocabulary will affect the ability of learners to comprehend what they are reading.   As a matter of fact, Dong et al (2020) stated that the relationship between vocabulary acquisition and reading comprehension is high and comprehension cannot appear if there is nothing known because then readers have no ground to link the unknown (Estremera and Estremera, 2017).

These findings and researches might be connected to the 2018 Program for International Students Assessment (PISA) where they conducted a global assessment in a different academic subject. There were seventy-nine (79)

countries that participated and one of them was the Philippines. Unfortunately, Filipinos occupied the penultimate spot in three categories: reading comprehension, science, and mathematics. The Philippines also experienced a seven-spot drop in English Proficiency Index from 20th spot to 27th (CNN Philippines,2020). There are many possible factors affecting the vocabulary acquisition of learners and one of them is the traditional way of teaching Morrison (2019) stated that the traditional education system has been outdated by the digital revolution. Meaning, the use of a modern approach in teaching is necessary to equip learners with better skills, Maffea (2020) stated that integration of technology in education is beneficial for all because it will help students acquire new techniques in searching matters online— and it will ease communication between students and teachers. Swantarathip and Orawiwatnakul (2015) stated in their paper that multiple studies have shown that mobile phones and other electronic devices can create a positive effect on the learning process citing different researchers such as Cobroft, Towers, Smith, and Burns in 2006, and Serrano-Santoyo and Oraganista-Sandoval in 2010. Maffea (2020) also stated that an inadequate amount of learning materials can hinder students' ability to learn at their fullest capacity other reasons such as the interest of learners also affect their learning process (Nootens et al 2019 and Sulaiman et al 2020).

Educational innovation should be utilized in order to achieve better educational outcomes, teachers should use innovative teaching materials especially in teaching vocabulary that could improve learner engagement of students with the aid of mobile devices or gadgets such as cell phone, tablet, computers, or laptops, creating an accessible learning material to students (Swantarathip and Orawiwatnakul, 2015). Therefore, this study aims to identify the effectiveness of Mobile-Assisted Exercises in vocabulary acquisition and student engagement.

ACTION RESEARCH QUESTION

This study aims to assess the effectiveness of Mobile-Assisted Games as an instructional material in vocabulary acquisition and improvement of learners' engagement of the Grade 4 students of Kaypian Elementary School, Academic Year 2021-2022. Particularly, this action research will seek to answer the following questions:

1. How effective are mobile-assisted exercises as learning instructional tools in improving the learner's vocabulary acquisition of Grade 4 English as revealed by their pretest and posttest mean scores?
2. Is there a significant difference between the pretest and posttest mean scores?
3. What is the respondent's level of learning engagement in the vocabulary acquisition in terms of:

        4.1 Affective

        4.2 Behavioral

        4.3 Cognitive

4. What lesson exemplar in English 4 may be developed based on the findings of the study?

HYPOTHESIS

This study tested the following null hypothesis, which will be subject to a statistical test at α 0.05 level of significance.

H_{O1}: There is no a significant difference between the pretest and posttest mean scores.

METHODS

The researcher utilized pretest and posttest activities to learners to identify whether there is a difference between their score before and after they were exposed to the interactive learning material for vocabulary acquisition, this study also employed Likert scale in order to identify the learning engagement of learners according to three categories which are cognitive, affective, and behavioral. The participants of this study are composed of thirty (30) Grade 4 learners of Graciano Lopez Jaena from Kaypian Elementary School purposive sampling was used in this study to identify the respondents. The researcher made material will be subjected to material assessment of two (2) master teachers of the said Elementary School where the study will be conducted. One group pretest and posttest experimental design was used in this study to identify the effectivity of the innovative material in teaching vocabulary and improving learning engagement of Grade 4 learners of Kaypian Elementary School. The pretest will be administered to the learners before their exposure to the proposed innovative learning material or VocaLangEd the score of the learners

from the pretest activity will be used to identify the vocabulary competency of learners prior to the exposure to the innovative material and the posttest will be used in this study to identify whether the proposed learning material is effective in teaching vocabulary base on the scores of learners. The scores of learners from two activities will be compared from one another using a statistical tool to identify the effectivity of the innovative material.

The respondents of this study are 30 (thirty) learners from Kaypian Elementary School who was subjected to the utilization and exposure to the proposed innovative material and research instruments such as pretest-posttest and Likert scale. The pretest and posttest contain fifteen (15) items while the Likert scale measured the engagement of learners base on the three factors namely affective, cognitive, and behavioral factors contains ten (10) statements per each factors the contents of both research instrument undergone evaluation from two master teachers who was advised by the researchers to give their constructive criticism to improve and help the material to attain its objective. The respondents of this study were made aware that their data will only be utilized in identifying the effectivity of the proposed material.

The researchers will be analyzing and discussing the data that have been gathered from the respondents through the use of different research instrument namely pretest, posttest activity, and Liker scale. The data will undergo various statistical treatment whose product will be used in later comparison that will answer the research question and for the testing of hypothesis. The statistical tool used in this study are the following:

T-test this statistical tool was utilized by the researchers of this study in comparing the mean of the pretest and the posttest score percentage of the respondents.

Weighted Mean the researchers made use of this statistical tool in identifying learners' engagement after being exposed to the innovative material. The numerical figures will be translated into descriptive level or verbal interpretation 5.00-4.20 High positive attitude, 4.19-3.40 positive attitude, 3.39-2.60 neutral, 2.59-1.80 Low positive, and 1.79-1.00 very low positive.

RESULTS AND DISCUSSION

The data obtained from the respondents through the use of pretest, posttest, and Likert scale will be analyzed and interpreted in this part of the paper to identify the effectiveness of Mobile-Assisted Exercise in Vocabulary Acquisition and Learners' Engagement.
The results of the study are mentioned below.

Table 1: Pretest-posttest of Grade 4 learners on vocabulary acquisition

The given table above contains the pretest-posttest of Grade 4 learners in vocabulary acquisition in vocabulary acquisition and in teaching connotative and denotative. It is observable in the table that the mean of the learners prior to the exposure to the innovative material is 47.33 while in post exposure the posttest mean is 72.83 with a gain score of 25.5. Therefore, the innovative material is highly effective in improving learners' vocabulary and in teaching connotative and denotative words, meaning, and concept.

A similar finding to the findings of Moreno (2020) wherein he has concluded that the utilization of Glogster as an innovative material in enriching learner's vocabulary acquisition and achievement is high. Combination of education and interactive exercises can become entertaining and academical and vocabulary acquisition is easier (Barabadi and Khajavi, 2017).

Table 2: **Test of significant difference between the pretest and posttest on vocabulary acquisition of learners pre-and-post exposure to the innovative material.**

df	t-test	t-test critical value	Probability Level	Decision	Interpre tation
28	6.79	2.05	P>0.05	H∘ is rejected	**Highly Significant**

Based on the given computed statistical table above the t-computed with the value of 6.79 is greater than the computed T-critical value of 2.05 with the probability level of 0.05 and degree of freedom of 28. With these numerical figures the researchers can say that there is a significant difference between the pretest and posttest score of learners after being exposed to the innovative material. Therefore, the null hypothesis is rejected.

This result similar to the study of Jan, Li, and Yo (2012) where groups of respondents showed a significant improvement from the before and after exposure to the word data bank as an innovative material in enriching learner's vocabulary knowledge.

Table 3: Learner's engagement in terms of affective, behavioral, and cognitive after being exposed to the innovative material

Statements	Mean	Verbal Interpretation
AFFECTIVE ENGAGEMENT.		
1. I love browsing the website vocalanged.	4.70%	High positive attitude
2. I have a hard time browsing	1.93%	Low positive

	Pres-test score	Posttest score	Gain score
Mean	**47.33**	**72.83**	**25.5**
the website vocalanged,		
3. I enjoy solving word problems.	4.60%	High positive attitude
4. I can actively participate in answering the wordwall on the website.	2.20%	Low positive
5. I am confident while learning on the website vocalanged.	4.10%	Positive attitude
6. I am not interested in reading on the website vocalanged.	1.83%	Low positive
7. I am motivated when participating in the activities	4.07%	Positive attitude
8. I'm in doubt about answering the question on the website	2.30%	Neutral
9. I can actively participate in answering the activities on the website.	4.23%	High positive attitude
10. I am worried to participate in the activity on the website	2.80%	Neutral
Overall Weighted Mean	3.28%	Neutral
COGNITIVE ENGAGEMENT		
1. I can identify the difference between connotative and denotative.	4.20%	High positive attitude
2. I have issues recognizing the denotative words in the sentence.	2.40%	Positive attitude
1. I can easily recognize if the given word is being used as a	4.27%	High positive attitude

	positive or negative connotation.		
2.	I struggle in identifying negative connotative and positive connotation	2.27%	Low positive
3.	I can express my idea using Positive or negative connotations.	3.97%	Positive attitude
4.	I have difficulties understanding the lesson.	2.13%	Low positive
5.	I understand the meaning of the word on the website and use it in a sentence	3.93%	Positive attitude
6.	I have challenges in creating my sentence using connotative and denotative words.	3.63%	Positive attitude
7.	I can interpret the meaning of the denotative word in the sentence.	3.93%	Positive attitude
8.	I am having trouble composing my own sentence using Positive and negative connotations	2.53%	Low positive
Overall Weighted Mean		3.33%	Neutral
BEHAVIORAL ENGAGEMENT			
1.	I try hard to answer the questions on the website vocalanged.	4.63%	High positive attitude
2.	When I'm on the website vocalanged,	1.63%	Very Low Positive

	I just act like I'm working.		
3.	I pay attention when reading the website vocalanged.	3.93%	Positive attitude
4.	I get easily distracted from the lesson.	2.23%	Low positive
5.	When I am unable to write my sentences, I try to go back to the website vocalanged.	3.93%	Positive attitude
6.	Browsing the website makes me sleepy.	1.90	Low positive
7.	The website is very engaging.	3.73%	Positive attitude
8.	When I 'm on the website vocalanged, I just act like I'm working.	2.30%	Low positive
9.	My mind is focused on the lesson whenever I'm on the website vocalanged.	4.20%	High positive attitude
10.	I do only enough on the website vocalanged to get by.	3.53	Positive attitude
Overall Weighted Mean		3.20%	Neutral

Legend: High positive attitude (4.20-5.00), positive attitude (3.40-4.19), neutral (2.60-3.39), low positive (1.80-2.59), very low positive (1.00-1.79).

Table number 2 contains the engagement of learners in three terms affective, behavioral, and cognitive. The table

reveals that the learners' engagement varies based on the domain's question but specifically on the general assessment of each term. In the affective factor engagement of learners, the computed weighted is 3.33% with verbal interpretation of neutral, cognitive engagement of learners have a weighted mean of 3.28% with verbal interpretation of neutral behavioral engagement has a weighted mean of 3.20% with a verbal interpretation of neutral.

This result is aligned with the study of Stroud (2014) that internet games in Quizlet as an innovative material affects learners' engagement in affective, cognitive, and behavioral terms.

UTILIZATION OF THE FINDINGS IN DIFFERENT LESSON EXAMPLAR

The findings of this study has been significant in enriching learner's vocabulary in teaching connotative and denotative, therefore, it can be used in different course to enrich the vocabulary of learners. Teachers and other members of the academe can use the findings of this study as a springboard to adapt mobile assisted exercises, that would help learners acquire set of vocabulary across different courses such as Mathematics and Science. Since many learners have been identified in having difficulties in acquiring, understanding, and comprehending vocabulary used in Science and Mathematics. Mulwa (2015) identified that learners have difficulty in understanding Mathematical lesson because of their inability to grasp the set of words used in the said course Bresser (2019) identified different mathematical words that students have difficulties in understanding such as odd, even, and functions. The research material and instrument can be utilized in differentiating these technical terms from common terms

CONCLUSIONS

The researchers of this study were able to draw conclusion from the data gathered and analyzed. Those conclusions are as follow:

1. The utilization of the innovative material is effective in enriching learners' vocabulary acquisition base on the mean and the gained score of the pretest and posttest and had positive impact on learners' achievement.

2. Mobile-assisted exercise shown highly-significant difference between the pre and post exposure of learner's base on their pretest and posttest. And therefore, effective in teaching connotative and denotative and in enriching learners' vocabulary acquisition base on the t-test result.

3. Learner's engagement based on the overall weighted mean of the three factors namely cognitive, affective, and behavioral the use of mobile-assisted exercise is neutral with a range of 3.20-3.33. Therefore, the utilization of material and its effectivity in engaging learners is not clear base on the computed and interpreted data.

RECOMMENDATIONS

With the use of the data gathered and analyzed and the conclusion the researchers recommend the following for the improvement of the material for future endeavors.

1. Utilization of retention test to identify the level of learner's ability and level of retention in regards to the acquired vocabularies.
2. A longer exposure to the innovative material is needed to identify the longer effects of the innovative material.
3. School-based seminar and training for teachers in implementation of the innovative material in improving learners' vocabulary and the possible utilization of the innovative material in different courses to improve learners' vocabulary.
4. This study was conducted with students from kaypian elementary school. Future studies may be conducted among students drawn from different regions of the country.
5. Additional studies at the same school may be conducted for more comprehensive findings as well as the benefit of more students.

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