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Research Article

Picture Word Inductive Model (PWIM) on Students' Vocabulary Achievement and Attitude

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ABSTRACT

Picture Word Inductive Model (PWIM) is an inquiry-based vocabulary strategy which uses pictures to transmit information to the learners. This study investigated how PWIM affected the vocabulary achievement and attitude of the Grade 8 students. There were 50 participants of the study, 25 from the group exposed to PWIM and 25 from the group not exposed to PWIM. The vocabulary achievements of the students were identified using the 64-item teacher-made pre-test, posttest, and retention test. Students' attitudes towards vocabulary learning were determined through a 20-item Likert-Scale Questionnaire on The Learners' Attitude Towards Vocabulary Learning adapted from Gimolatan (2016). Results showed that the group exposed to PWIM strategy outperformed the unexposed group in vocabulary achievement in terms of posttest and retention test. Non-PWIM strategy was able to increase the students' vocabulary achievement, but the increase was not as high as of the learners exposed to PWIM. Also, the students exposed to PWIM improved their attitude towards vocabulary learning from moderately positive to positive attitude while the group not exposed to PWIM remained to have a moderately positive attitude. Moreover, the vocabulary achievement of students exposed to PWIM was significantly higher than the students who were not exposed to PWIM. There was also a significant difference on the attitude of the students exposed and not exposed to PWIM towards vocabulary learning. Thus, PWIM was effective in improving the students' vocabulary achievement as well as in enhancing their attitude towards vocabulary learning.

Keywords: Picture Word Inductive Model (PWIM); Vocabulary Achievement; Attitude

1. INTRODUCTION

The Philippines' educational system adopted the K to 12 programs for the purpose of equipping learners with the 21st century skills and producing graduates who possess life and career skills, one of which is communication skills. Communication entails the development of the language skills, which in turn requires mastery of the four basic skills such as listening, speaking, reading, and writing. And apparently, learners who have mastered the four basic skills also have sufficient vocabulary. Vocabulary provides much of the basis how well the learners speak, listen, read, and write. Sufficient vocabulary is also crucial in expressing one's idea, in understanding written and spoken materials, and in writing efficiently. Rohmah (2017) also elaborated that it promotes fluency, improves academic achievement, and enhances thinking and communication skills since words are considered as tools in analyzing, inferring, evaluating, and reasoning. However, it has been observed that many students lack sufficient vocabulary which is manifested on their inability to convey their ideas and to get the necessary information from a material. Moreover, they also find it difficult to understand what the words mean which subsequently results to poor comprehension and poor academic performance.

Undeniably, the situations above have been a pressing problem of the Department of Education which can readily be observed in the National Achievement Test (NAT) results. The country's NAT shows a constant failure to reach the needed 75% mastery level across all learning areas for the school year 2010 - 2015. In particular, Valencia National High School only had an average of 50.28%. And since SY 2010 – 2014, the school's NAT in English subject has also shown at least an average increase of 10.96%, but in the last year of its administration, SY 2014-2015, it drastically decreased by 30.72%. Moreover, vocabulary insufficiency was also evident on the school's Diagnostic Reading Test result conducted last June 2018. Results revealed that Junior High School in particular had 1,339 or 25.35% Frustration Readers, 2,614 or 49.50% Instructional, and 1,328 or 25.15% Independent Readers out of 5,280 learners.

Insufficient vocabulary resulted to poor reading comprehension and in a bigger scope, continuous failure of the learners to meet the national standards on the achievement tests. Undoubtedly, these persistent problems pose a negative impact on the thrust of the Department of Education which is quality education. Furthermore, if these problems will not be properly addressed, the aim of adopting the K to 12 program which is to produce globally competitive graduates would be at stake.

In this vein, the researcher finds it imperative for the teachers to develop and enrich their instructional methods and teaching techniques that would address the learners' vocabulary problem and learning preferences. With the proven effectiveness of Picture Word Inductive Model (PWIM), improvement of the students' vocabulary achievement would be made possible. Picture Word Inductive Model (PWIM) is an inquiry-oriented arts strategy which was developed by Emily Calhoun in 1999. It uses pictures containing familiar objects and actions to elicit words from children's listening and speaking vocabulary (Andriani, 2015). It also focuses on the children studying various pictures and then "shake out" the words they have seen. The word "shake out" means that the children will discover the English words which describe the objects or actions in the picture (Li, X., 2011). Furthermore, this model is also designed to capitalize on the children's natural ability to play with words in building phonetic and structural analysis, in observing and analyzing words within the context of content area themes, in thinking inductively, and in making generalizations about the meaning of words, ideas, and concepts represented by the picture (Colon & Martinez, 2013).

In learning new words, phrases and sentences, this strategy also provides an authentic and concrete reference because the students could have the opportunity to use the words repeatedly in an authentic way (Colon & Martinez, 2013). It also motivates them to think inductively and to make generalizations that can help them to master the language (Rohmah, 2017). Hence, this strategy could also address the problem of retention of words and how to move the concept into the long-term memory. This is because it uses picture containing familiar objects and actions which are used to elicit words from children's listening and speaking vocabulary. It also encourages active involvement of the learners in discovering concepts based on their background knowledge (Li, X., 2011). The use of pictures alongside with words proved a positive effect on vocabulary learning and retention. Thus, this research sought to investigate the effects of Picture Word Inductive Model (PWIM) on the vocabulary achievement and attitude of the Grade 8 learners towards vocabulary learning.

2. RESEARCH METHOD

This study used a quasi-experimental method of research. This type of research focused on the effects of the variables in the study. The said method was used to determine the effect of PWIM on the vocabulary achievement and attitude of the students towards vocabulary learning. The participants were chosen through random sampling. The sample groups were two sections who were identified as frustration readers based on the Reading Center Diagnostic Reading Test Result. The experimental group was exposed to PWIM strategy, and the control group was not exposed to PWIM strategy in vocabulary learning. To make the data gathering easy, communicating with the respondent school was done first. After getting permission from the principal, the researcher made an arrangement with the English 8 teachers of the two classes to make the conduct of the study possible. The students were also verbally informed about the conduct of the study, and they participated at their free will. They were also fully informed about the procedure of the research project and were assured that their safety, confidentiality of their identity, and privacy will be given utmost consideration.

After that, the researcher then created two assessment tools: vocabulary achievement test (pre-post-retention) and attitude test towards vocabulary learning. The vocabulary items were taken from the eight select reading texts from the K to 12 learning modules for the third grading period. The test was pilot tested first in the other DepEd Secondary School. One hundred students answered the 95-item vocabulary achievement. The test gained a test-reliability of 0.932 Cronbach's Alpha which indicated that it was reliable. Moreover, the attitude test was adapted from Gimolatan (2016). It was pilot tested first in which 20 items were drawn-out from the 24-item test. A scale test was run to check its reliability, and it gained .754 Cronbach's Alpha which indicated that the test was reliable. Prior to the interventions, pre-test on vocabulary achievement and attitude were administered to the two groups to identify their vocabulary achievement and attitude towards vocabulary learning. A coin was then tossed to determine which of the two sections will be exposed and not exposed to PWIM strategy. Class A was assigned as experimental group and was exposed to PWIM while Class B was assigned as control group and was not exposed to PWIM intervention.

Eight vocabulary sessions of treatment were held over the eight-week periods in all classes where four days were allotted for each reading selection. During the eight sessions of treatment, 56 vocabularies were instructed to the participants. It means that in every vocabulary session, learners learned a maximum of seven new words. The lesson also involved a reading passage with commonplace following the pattern in teaching reading. However, the learners in the two groups followed different paths in terms of vocabulary learning. The unexposed group received the vocabulary teaching such as wordlist, giving of synonyms and definitions, and translations. This approach was pursued every vocabulary session of the eight-week period. To begin the teaching process, handouts of the reading selections were given individually to the students. The teacher then gave out the new wordlist with seven words they do not know. It was followed by reading out the new wordlist, explaining their dictionary meaning, and letting the students recognize the pronunciation, spelling, and meaning. The students were then instructed to read aloud and spell the words repeatedly. The teacher also assisted the learners in reviewing the previous learning of the new words followed by a formative test.

On the other hand, the teaching and learning approach on the experimental group was totally different from the control group. Prior to the teaching and learning session, the participants were oriented on the concept of the strategy and its definition. They were also provided with some examples to master the intended strategy. The learners were also grouped into five, were given handouts of the reading selection, worksheets for the picture-word dictionary, pictures of each word being studied which were pasted in a Manila paper for the picture-word chart, and underwent on the three steps graded formative vocabulary activity. This graded formative vocabulary means that their scores on the three steps were recorded which were used to track their understanding only not for the computation of their grades. They were also instructed to skim and underline seven words which were new to them. The rationale behind this phase is for them to have a self-vocabulary assessment.

The first step of the intervention started with the showing of pictures in each of the difficult words with the use of LED TV. It was followed by the "shaking out" or letting the students find out five English words which described the objects on the picture which were written in their picture-word chart. The participants were also reminded to draw a line connecting their answer to the object/s in the picture. After five minutes, the representatives of each group were instructed to stand and to show their answers for the checking which was facilitated by the teacher. Each group was also instructed to read and spell their correct answers followed by the whole class. This process initially created a picture-word chart. The second step was to guess what might be the word represented by each picture. The teacher then revealed the answers, read each word aloud, and spelled them one by one. The students were also allowed to read and to spell them one by one repeatedly.

Lastly, they were instructed to construct a meaning of a word by considering the words related to the picture and the words represented by the picture. The teacher also assisted the students in reviewing words learned and gave a formative assessment. Moreover, they were also given worksheets which were compiled as their Picture-Word Dictionary. The same procedure was followed in every vocabulary session for the eight-week duration. After the interventions, posttest on vocabulary achievement and attitude was administered to the two groups to know if there were improvements and significant difference on their vocabulary and attitude towards learning the vocabulary. Lastly, retention test was also administered to the two groups two weeks after the posttest to determine how far they could recall the concepts learned and if there is a significant difference of their scores.

3. RESULTS AND DISCUSSION

3.1 Level of Vocabulary Achievement of Grade 8 Students

The level of vocabulary achievement of grade 8 students of Valencia National High School was determined through their pre-post, and retention tests scores.

Table 1. Vocabulary Achievements of the Students

MPS	Control Group (Non-PWIM)						Experimental Group (PWIM)					
	Pre-test		Posttest		Retention Test		Pre-test		Posttest		Retention Test	
	N	%	N	%	N	%	N	%	N	%	N	%
90 – 100	0	0	1	4	0	0	0	0	3	12	1	4
85 – 89	0	0	0	0	1	4	0	0	3	12	1	4
80 – 84	0	0	1	4	0	0	0	0	11	44	10	40
75 – 79	0	0	7	28	4	16	0	0	7	28	12	48
74 and below	25	100	16	64	20	80	25	100	1	4	1	4
Total $\bar{x}$	14.76	DNME	33.84	DNME	32.08	DNME	15.08	DNME	45.92	DNME	44.44	DNME

Legend:

Range	Qualitative Description
90 - 100	Outstanding
85 – 89	Very Satisfactory
80 – 84	Satisfactory
75 – 79	Fairly Satisfactory
74 and below	Did Not Meet Expectation

Table 1 shows the vocabulary achievement of the two groups exposed and not exposed to PWIM in terms of pre-test, posttest, and retention test. As reflected in the table, pre-test scores revealed that the students exposed and not exposed to PWIM obtained "Did Not Meet Expectation" mastery level on their vocabulary achievement with the scores of below 75. This means that prior to the interventions, the students had little knowledge of the select words. The result also showed that the two groups were homogeneous in terms of vocabulary knowledge prior to the conduct of the study, and that there is a need to use strategies to upgrade their vocabulary achievement. However, after the eight-week vocabulary interventions, posttest result revealed that although both groups exposed and not exposed to PWIM had a positive outcome, the group exposed to PWIM outscored the group not exposed to PWIM with a mean difference of 12.08. This is shown in the increase of 96% of the group exposed to PWIM compared to the 36% increase in the group not exposed to PWIM. Out of 25 participants, 21 students in the exposed group met the 75% national standard mastery level where three were considered outstanding, three were very satisfactory, 11 were satisfactory, and 7 were fairly satisfactory. On the other hand, only 9 students in the group not exposed to PWIM met the 75% national standard mastery level where one was considered outstanding, 1 was satisfactory, and seven were fairly satisfactory.

Most of the students in the group exposed to PWIM were able to improve their vocabulary achievement with the help of the strategy. They benefitted from the intervention which resulted to their improved vocabulary achievement. On the other hand, majority of the students in the group not exposed to PWIM still showed difficulty in mastering the discussed vocabularies. It was also observed during the vocabulary sessions that they were not very participative and attentive to the activity which explain why they did not improve their vocabulary achievement compared to the group exposed to PWIM.

Moreover, retention test scores also revealed that the group exposed to PWIM had better retention of the concept with a mean difference of 12.36. The table also reflected that 24 out of 25 students in the group exposed to PWIM were able to meet the 75% mastery level of the national standard while there were only 5 students or 20% from the groups not exposed to PWIM. The above data also revealed that the use of pictures as stimuli in vocabulary learning posed a positive effect on the retention of the students. Nevertheless, although there is a high increase on the vocabulary achievement of the group exposed to PWIM in terms of their posttest and retention test scores, the overall mean of 45.92 and 44.44 revealed that they still failed to meet expectation. This may be attributed to the span of time of the students' exposure to the intervention which was only eight weeks with one hour vocabulary session per week.

The increased number of students who performed better in the exposed group manifests that PWIM strategy in vocabulary learning was effective in improving students' vocabulary achievement. This is for the reason that the use of pictures alongside with words helped the students focus on the lesson. Through the use of pictures, the students also were able to improve their vocabulary achievement because as they analyzed the objects in the pictures, they were also learning at their own pace and discovered the concepts of their own. They were also involved actively in the process of learning and were repeatedly exposed to the spelling, pronunciation, and meaning of words. Furthermore, this study supports the idea of Carter (2013) that students' achievement will increase when quality instruction is used to teach instructional standards. Also, there are many variables that can impact successful students' achievement, but the most important is classroom instruction. However, children do not learn the same way or at the same rate.

In addition, the findings of this study also support the claim of Li, X. (2011). Accordingly, the meaning of new words can be learned better through the use of pictures than just by defining since pictures are considered as universal stimuli that provide a starting point for language sharing in the classroom. Thus, teaching vocabulary using PWIM strategy is found to be more enjoyable and more effective in learning new English vocabulary of Second Language Acquisition (SLA). In addition, the claim of Jiang and Perkins (2013) that PWIM strategy provides more opportunities for the students to make generalizations that will assist them in mastering the language is also parallel to the result of this study. Learners who were exposed to PWIM in learning new words were the ones who identify the concepts based on the pictures presented to them. Out of the concepts they discovered, they also constructed meanings which eventually lead them to master the language compared to those who were not exposed to pictures.

Similarly, pictures stimulate the learners to think inductively. This is because the moment they see pictures, they will think specifically, and the moment that they make the available word become a paragraph, the will think generally (Andriani, 2015). This is true to the study because the pictures helped them to discover words related to the objects in the picture and they were also able to construct meanings in their own words.Furthermore, it was emphasized that retention is improved by the three pedagogical factors such as deep learning, repeated testing, and project related learning. The students who engage in deep learning and go beyond the rote of memorization strive to comprehend the material, achieve a deeper understanding of the material, and more likely to score well on tests. Repeated exposure also affects retention and lead to greater learning when those exposures are spread over time. Project-related learning which calls for more active learning also improves retention in the sense that active learning enhances memory by encouraging the students to make additional connections with the target material (Bacon & Stewart, 2006). This study agrees with the stated claim due to the fact that in the PWIM strategy, the three factors can be observed.Along the process, the students were actively involved in the activity. They were also exposed repeatedly to the words including their pronunciation, spelling, and meaning. Lastly, the project-related learning activities were also observed just like the classroom discussions, the making of picture-word chart, and picture-word dictionary.These activities somehow developed the retention of the concepts learned as shown in their achievement test results.

The use pictures also make retention easier by identifying previous experience stored in memory. Pictures can also address the problem of retention of words, how to move into long-term memory, and how to make them available for future use (Li, 2011). The result of this study is parallel to the said claim. The participants of the study were able to access their stored knowledge in the "shake out" phase based on the pictures they have seen. And because they discovered the concepts of their own, they outperformed the group not exposed to PWIM as manifested in their posttest and retention test score. The results of the vocabulary achievement tests of the students in terms of their posttest and retention test clearly explained that PWIM helped a lot in improving the students' vocabulary achievement. It was observed that majority of the students in the exposed group were able to go beyond the 75% national standard mastery level. Although few of the students in the unexposed group were able to go beyond the 75% mastery level, its number was not enough to surpass the performance of the exposed group.

3.2. Attitude of Students Exposed and Not Exposed to PWIM Towards Vocabulary Learning

Table 2 presents the students' attitude towards vocabulary learning before the intervention. The exposed group had a mean of 2.89 while the unexposed group had a mean of 3.15. The overall means show that the two groups had a moderately positive attitude towards vocabulary learning. It can be noticed that in the beginning, the group not exposed to PWIM had a higher mean compared to the group not exposed to PWIM. This can be explained through understanding the various backgrounds these students have. The students focused in this study were homogeneous in terms of vocabulary knowledge and were inclined to sports, but they came from different families with various cultural backgrounds. Thus, the two groups were not expected to have the same level of attitude towards vocabulary learning. Moreover, neither of the group was expected to have a higher attitude than the other. Attitude towards vocabulary learning does not depend on the group they belong because it is an individuals' belief about language learning (Ali, 2012). It can also be expressed positively or negatively after evaluating a particular subject (Deng, 2010). Alkaff (2013) also claimed that attitude plays an important role in second language learning as it determines to a large extent the learners' behaviors, their actions taken to learn, or their efforts

exerted during the learning process He further elaborated that although it is not accountable for the degree of learners' responses, but it also predicts achievement and contribute to it. The scores on the pre-test of both groups denote that the two groups had almost the same attitude towards vocabulary learning because they are homogeneous. However, their attitude towards vocabulary learning could be changed through the help of some interventions. Therefore, teachers are encouraged to use an effective intervention like the PWIM strategy to improve their attitude towards English vocabulary learning.

Table 2. Pretest scores on attitude towards vocabulary learning of groups exposed and not exposed to PWIM

	Control Group		Experimental Group	
	Mean	Qualitative Description	Mean	Qualitative Description
Overall Mean	3.15	Moderately Positive	2.89	Positive

Legends:

Scale	Descriptive Rating	Qualitative Description
4.51-5.00	Strongly Agree	Highly Positive
3.51-4.50	Agree	Positive
2.51-3.50	Uncertain	Moderately Positive
1.51-2.50	Disagree	Fairly Positive
1.00-1.50	Strongly Disagree	Negative

3.3. Posttest scores on attitude towards vocabulary learning

The results show that the overall mean of the two groups in the posttest were 3.89 (Positive) for the group exposed to

PWIM and 3.40 (Moderately Positive) for the group not exposed to PWIM. Both groups improved in their attitude towards vocabulary learning, but the group exposed to PWIM still had a higher mean than the group not exposed to PWIM. Nonetheless, the group exposed to the PWIM had increased 1.0 which is bigger than the .25 increase of the group not exposed to PWIM. The increase in the attitude of the group exposed to PWIM supported the claim that positive attitude towards learning can also be developed if the students' abilities will be given consideration (Ali, 2012). The use of PWIM strategy in vocabulary learning motivated the students in learning a language because it is an inquiry-oriented strategy where they were actively involved in the activities and discovered concepts of their own; thus, their natural abilities in learning a language were being addressed. Moreover, the increase of the students' attitude towards vocabulary learning on the group exposed to PWIM showed its effects to the students. After all, PWIM encouraged the students to learn more English words.

Table 3. Posttest scores on attitude towards vocabulary learning of groups exposed and not exposed to PWIM

	Control Group		Experimental Group	
	Mean	Qualitative Description	Mean	Qualitative Description
Overall Mean	3.40	Moderately Positive	3.89	Positive

Legend:

Scale	Descriptive Rating	Qualitative Description
4.51-5.00	Strongly Agree	Highly Positive
3.51-4.50	Agree	Positive
2.51-3.50	Uncertain	Moderately Positive
1.51-2.50	Disagree	Fairly Positive
1.00-1.50	Strongly Disagree	Negative

3.4. Comparison of Posttest Scores of Exposed and Not Exposed to PWIM

The group exposed to PWIM had a higher mean score compared to the group not exposed to PWIM. Out of 64 points, the average score of the students exposed to PWIM is 71.75 while the unexposed group is 52.87. The scores revealed the effectiveness of PWIM in improving the students' vocabulary achievement since the students exposed to PWIM outscored the students not exposed to PWIM. In addition, the overall achievement of both groups is 62.31 indicating "did not meet expectations"mastery level. Although this is considered low based on 75% national standard mastery level, the PWIM group still has higher vocabulary achievement level compared to the non-PWIM group. This could be attributed to the short span of time of the students' exposure to the intervention which was only 32 days. The data also implied that there can be a meaningful yield in terms of vocabulary achievement if the students will be exposed more to the intervention. Table 4 further presents the F value of the test which is 39.242 and the probability value of .000. The value referred means that the hypothesis "There is no significant difference between the vocabulary achievement of the learners exposed and not exposed to PWIM in terms of posttest scores" is rejected.

The significant difference can be explained by the level of significance the test gained (0.00). The scores of the students from the exposed group increased drastically compared to the group not exposed to PWIM. The said increase was far higher than the increase of the unexposed group which means that PWIM was able to increase the students' vocabulary achievement signifying its effectiveness. This further explains that the strategy had a significant effect on the vocabulary achievements in the exposed group. Moreover, the significant result of this study supported several pieces of research.For instance, the study of Swartzendruber (2007) which investigated the effects of PWIM in enhancing the students' vocabulary acquisition. After a four-week interventions among the 35 students, results of the study revealed the group exposed to PWIM performed better than those who were not exposed to PWIM.

Similarly, the findings of Li, X. (2011) supported this study. Using the grade 4 Swedish pupils in a primary school as the participants, results revealed that the group taught with PWIM gained relatively higher scores, performed more actively, and considered the lesson more enjoyable than those who were taught with word-list. The result of this study was also supported by Rohmah (2017). Her quasi-experimental study aimed to find out whether there is significant difference of the students' vocabulary mastery between the group exposed to PWIM and those who were not. Two groups of seventh grade learners were used, one exposed to PWIM (experimental) and other one to non PWIM (control). With the gathered data using a test and documentation, result showed that there was a significant difference between vocabulary mastery of students who were taught using PWIM than those who were not. Furthermore, PWIM was also able to improve the vocabulary achievement of the first year students of MTs Al Fajar Pekanbaru. Using a multiple-choice items with 25 questions and matching word test with ten questions, result showed that there was a significant effect of PWIM on the students' vocabulary learning achievement. To sum it up, the results of this study did not contradict to other studies on PWIM. This study also reveals that PWIM was able to improve significantly the scores of the students in the posttest. PWIM helped increase the vocabulary achievement of the students which proves that it is an effective vocabulary strategy.

Table 4. Posttest scores of students exposed and not exposed to PWIM

Group	Mean	Std. Deviation	N
Control	52.87	15.62	25
Experimental	71.75	7.55	25
Total	62.31	15.44	50

Source	Type II Sum of Squares	Df	Mean Square	F	Sig.
Model	2000568.793	3	66856.264	597.239	.000*
Preper	1973.090	1	1973.090	17.626	.000*
Group	8785.632	2	4392.816	39.242	.000*
Error	5261.285	47	111.942		
Total	205830.078	50			

3.5. Comparison of Retention Test Scores of Grade 8 Students Exposed and Not Exposed to PWIM

The group exposed to PWIM had a higher mean score compared to the group not exposed to PWIM. Out of 64 points, the average score of the students exposed to PWIM is 69.43 while the unexposed group is 50.12. The scores revealed that the students exposed to PWIM manifested higher retention compared to those who were not. Table 5 further presents the F value of the test which is 47.455 and the probability value of .000. The value referred means that the hypothesis "There is no significant difference between the vocabulary achievement of the learners exposed and not exposed to PWIM in terms of retention test scores" is rejected. The significant difference can be explained by the level of significance the test gained (0.00). The scores of the students from the exposed group increased drastically compared to the group not exposed to PWIM. The said increase was far higher than the increase of the unexposed group which means that PWIM was able to increase the students' vocabulary retention signifying its effectiveness. This further explains that the strategy had a significant effect in recalling the concepts learned as manifested on the scores of the exposed group. Moreover, the significant result of this study supported several pieces. For instance, the study of Bruno (2007) focusing on long-term retention of material taught and examined in chiropractic curricula: its relevance to education and clinical practice, the students in the "deep processing" group performed better on the retention examination than those in the "superficial processing". This implies that when students are involved in the process of learning, they are more likely to remember important concepts. Moreover, the result also supported the claim of Li (2011) that the use of pictures in the PWIM strategy make retention easier by identifying previous experience stored in memory. It can also address the problem of retention of words, how to move into long-term memory, and how to make them available for future use (Li, 2011). To sum it up, the results shown in Table 4 and 5 on the posttest and retention test disclose that the use of Picture Word Inductive Model (PWIM) as a vocabulary strategy has a significant effect on the students' vocabulary achievement. Given more time and longer exposure, PWIM as a vocabulary strategy would surely increase students' vocabulary achievement.

Table 5. Retention test scores in vocabulary achievement test of groups exposed and not exposed to PWIM

Group	Mean	Std. Deviation	N
Control	50.12	13.98	25
Experimental	69.43	7.44	25
Total	59.78	14.76	50

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	184832.171[a]	3	61610.724	637.766	.000
Preper	1480.120	1	1480.120	15.322	.000
Group	9168.738	2	4584.369	47.455	.000
Error	4540.388	47	96.604		
Total	189372.559	50			

3.6. Difference in the Attitude Towards Vocabulary Leaning of the Groups Exposed and Not Exposed to PWIM

Table 5 shows the mean scores of the attitude of the groups exposed (3.89) and not exposed to PWIM (3.40). The f value of the test was 54.318 and the probability value was .000. This implies that there was a significant difference between the scores of the groups. It means that the hypothesis "There is no significant difference between the attitude of learners exposed and not exposed to PWIM" is rejected. The significant difference entails that the change of scores between the groups was observable and was enough to claim that PWIM significantly affected the students' attitude towards vocabulary learning. The significant difference can be attributed to the features of PWIM intervention in the study which had addressed their learning preferences. The use of pictures (printed and presented in LED TV) supported the claim of Li (2011) that learners are living in a visual world and are surrounded by visual information. They also get used in receiving information with visual support, thus, it is undeniable that they are also craving for visual strategies in the classroom. In this study, pictures were used as visual support and stimuli for language learning. They also motivated the students to discover the concepts of their own developed which eventually developed their natural abilities freely. Another feature of PWIM strategy that affected the students' attitude is its influence in the learning process. Accordingly, the use of pictures is simple but powerful (Anderson, 2012), easier and more effective (Hashemi & Pourgharib, 2013). Also, they can help the visual learners in creating a mental picture for vocabulary (Phillips, 2016), can stimulate the students to describe an object or a person in the pictures, and can help them in explaining the event and in acquiring meaning without the teacher's explanation (Pushpanathan, 2017). And because PWIM uses pictures related to the content material in the study, the students could have the opportunity to use the words repeatedly in an authentic way which makes them feel part of the classroom community (Colon & Martinez, 2013). This is true to the study because as the process went on, the students' active participation and inquisitiveness were evident. Furthermore, it was also observed that they were like playing word games at the same time learning the concepts.

The findings of the conformed with the theory of Pourmandia and Hosseini (2013) that attitude can be changed because it is affected by many internal and external factors. Among these factors are teaching and learning variances. Thus, it is very crucial for educators to design learning strategies that would cater their needs and preferences. The results of this study also supported the view of Ali (2012) that individual's belief about language learning largely affect their affective state: thus, some may be fearful while others are confident about learning a language. His findings also demonstrated that positive attitude can be developed if the students' abilities will be given consideration. This notion is evident in the results of the study in the sense that prior to the administration of PWIM, the exposed group had a moderately positive attitude towards vocabulary learning. However, after the intervention, they developed a positive attitude towards vocabulary learning. Thus, PWIM had addressed their learning abilities.

In addition, the findings also supported the statement of Gardner cited by Nyamubi (2016) that language learners with positive attitude towards the target language learn more effectively compared to those who don't have. This implies that the learner's attitude towards the language they are learning could lead to mastery of the language and success in performance at school and in real life situations. In this study, the group exposed to PWIM had developed a positive attitude towards vocabulary learning after the intervention and performed better in terms of vocabulary achievement compared to the unexposed group. The results of this study also conformed with the findings of some researchers with regards to the correlation of attitude and achievement. Among these researchers was Abidin (2012) who concluded that learning should be approached as a social and psychological phenomenon rather than a purely academic one. He supported this claim by explaining that attitude is an essential factor influencing language performance. Achievement on a target language rely not only on intellectual capacity, but also on the learners' attitude towards language learning. In this study, attitude displayed as an essential factor affecting the language performance. This is evident on the higher vocabulary achievement of the group exposed to PWIM who had a positive attitude towards vocabulary learning and the lower vocabulary achievement of the unexposed group who had a moderately positive attitude towards vocabulary learning.

In addition to the influence of attitude on the language performance, Oroujlou and Vahedi (2011) also affirmed that positive attitude towards language learning is a good start to learn a language. On the contrary, negative attitude and lack of motivation hinders successful language learning. They also concluded that motivation, attitude, and language learning

play an important role in raising efficiency and proficiency in language learning. They further cited that even the brilliant and talented students who have low attitude and motivation have achieved little progress. Along this line, Hasseini and Pourmandia (2013) also explained that attitude and other affective variables are as important as aptitude for language development. They also concluded that the way learners behave and perceive learning strategies and their ability in maintaining higher levels of learning are affected by the learners' motivation, the type of task at hand, cultural background and learning experiences. Positive and negative attitude towards a certain language and the way the learners perceive that language therefore greatly influenced their performance on the language itself.

Furthermore, Alkaff's (2013) study on the students' attitude and perceptions towards learning English also supported the findings. Accordingly, attitude plays an important role in second language learning as it determines to a large extent learners' behaviors, action taken to learn, or efforts exerted during the learning process. Although it is not accountable for the degree of learners' responses, but it also predicts achievement and contribute to it. Parallel to this, Li, Y. (2009) also concluded in his study which focused on the attitude to the strategies among successful and unsuccessful learners in their vocabulary learning that successful learners are more in favor of using learning strategies to learn vocabulary, and they viewed most strategies as helpful. However, unsuccessful learners have different opinions. They seem not to favor using learning strategies in their study and only few strategies in vocabulary learning are useful. Thus, in teaching vocabulary, teachers could teach some strategies and guide them to use these strategies in their learning process.

Liu (2018) also stated that attitude plays an important role in the learning situation and can enhance the motivation for learning. Students with low achievements would most likely have weak motivation, would not take seriously in learning the language, and tend to have negative attitude towards learning English. This could be manifested on the observable behavior like not listening to the teacher and not participating in the activities. On the contrary, the result of this study differs with the result of some researchers. On the study conducted by Manalu (2014) focusing on investigating the relationship among motivation in learning English, attitude, and learning achievement as a foreign language, result indicated that there is no significant relationship between attitude towards English language, attitude towards native speaker, attitude towards English lecturer, and attitude towards English learning achievement. He further explained that these variables are statistically not the predictors in increasing the students' learning achievement. He also elaborated that even the learners have positive attitudes towards these variables, other factors are assumed to be the determinants for the students' academic performance.

The result also differed with the study of Kartubi (2017) where he concluded that there was no significant correlation between attitude towards English and the English proficiency of the eleventh grade. He further emphasized that the learners' positive attitude could not guarantee their proficiency level for factors such as intelligence and thrive for learning also affect their performance. He also mentioned that the most dominant factors that influenced English proficiency are motivation, self-confidence, condition in taking the test, and English background, need and interest. As a whole, the use of Picture Word Inductive Model (PWIM) helped in improving the students' vocabulary achievement and attitude towards vocabulary learning.

Table 6. Comparison of posttest scores in attitude test of groups exposed and not exposed to PWIM

Group	Mean	Std. Deviation	N
Control	3.40	.226	25
Experimental	3.89	.230	25
Total	3.64	.240	50

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	531.070[a]	3	177.023	3327.650	.000
Preper	.005	1	.005	.100	.753
Group	5.779	2	2.890	54.318	.000
Error	2.500	47	.053		
Total	533.570	50			

4. CONCLUSION

The students' level of vocabulary achievement in the pretest showed that the groups exposed and not exposed to PWIM had "did not meet expectation" mastery level. However, after exposure to PWIM, a significant increase in scores was noted on the exposed group. Moreover, the exposed group still gained higher retention scores compared to the unexposed group. Results showed that the students exposed to PWIM performed better in the posttest and retention test compared to the unexposed group. On the other hand, in terms of attitude prior to the interventions, the groups exposed and not exposed to PWIM had a moderately positive attitude towards vocabulary learning. However, after the interventions, the group exposed to PWIM developed a positive attitude while the unexposed group remained to have a moderately positive attitude towards vocabulary learning. Although the PWIM and non-PWIM strategies had increased the exposed and not exposed groups' attitude towards vocabulary learning, the exposed group still outscored the unexposed group. Also, a significant statistical difference on the level of vocabulary achievement of the groups exposed and not exposed to PWIM in terms of posttest and retention test were noted. The average growth of the students' performance in the unexposed group did not increase as much as the exposed group. It was also observed that majority of the students from the exposed group improved their scores compared to the unexposed group.This is a manifestation of the effectiveness of PWIM in improving the students' vocabulary

achievement and retention of the concept. A highly significant difference on the attitude of the students exposed and not exposed to PWIM was also noted. The students exposed to PWIM improved their attitude towards vocabulary learning from moderately positive to positive attitude while the group not exposed to PWIM remained to have a moderately positive towards vocabulary learning at the end of the intervention. However, there was also an increase in their mean score but was not as high as the exposed group. This infers that PWIM and non-PWIM strategy improved the students' attitude towards vocabulary learning, but PWIM strategy had a relatively higher effect than the non-PWIM strategy. Self-efficacy is judgement of a person to his capabilities to plan and implement the action to reach certain goals (Mukhid, 2009). In an academic context, self-efficacy reflects how confident students are in performing specific tasks (Perez & Ye, 2013). Self-efficacy plays a role in academic motivation and learning motivation (especially students' ability to manage their learning activities), and resistance to learning (Zimmerman, 2000).

RECOMMENDATIONS

English teachers are encouraged to use Picture Word Inductive Model in order to address the students' difficulty in vocabulary mastery and to improve their level of reading comprehension. Likewise, school administrators need to encourage the language teachers to make use of PWIM to attain an optimum mastery of vocabulary learning of every student. Moreover, they may also find ways to make resources and materials available to the teachers for them to give a full and unhampered utilization of PWIM strategy. Educators may create classroom situations and activities using the PWIM strategy for it could motivate students to think inductively and to discover the concepts on their own. However, further research and longer experimental period is also hoped to be conducted to yield better results in terms of vocabulary achievement. In using the PWIM strategy in vocabulary learning, it is also recommended that further research in vocabulary learning may be conducted to determine other factors that may affect and influence the students' level of vocabulary achievement.

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AUTHOR'S CONTRIBUTIONS

All authors discussed the results and contributed to from the start to final manuscript.

CONFLICT OF INTEREST

The authors declare that they have no competing interests.

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