Image Creation Intervention: Effectiveness on the Reading Comprehension of Learners

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Abstract

Image Creation Intervention is a method that emphasizes the use of mental images in comprehending the written texts. Learners draw the characters, sequence the events, and extract essential activities in the story. It aids the reading comprehension of the pupils by providing a tangible and vivid outcome that will help them recall the happenings in the story. This study aimed to determine the effectiveness of Image Creation Intervention on the reading comprehension of the pupils. This study applied a quasi- experimental design conducted for 10 sessions to 60 subjects that were selected though criterion sampling and equally distributed to control and experimental groups. The researchers developed a comprehension test to collect data on the test performance of the subjects conducted through pretest and posttest method. The data were analyzed using percentage rate, frequency count, percentage mean, and t-test for independent samples. Results revealed that learners in both groups have moderately mastered the reading comprehension before and after applying image creation intervention. There is no significant difference in the reading comprehension of the pupils in both groups before and after using image creation intervention. Hence, the application of Image Creation Intervention is not significantly effective in enhancing the reading comprehension of the pupils. Based on the result, teachers should continue to facilitate the imagery method for an extended period to practice familiarization to children who prefer spatial activities while teachers can use other strategies to facilitate learners' multiple intelligences and learning styles.

Keywords: Drawing, Image Creation Intervention, Mental Imagery, Reading Comprehension, Spatial Intelligence

INTRODUCTION

Reading comprehension is not an easily acquired skill. It is one type of skill that teachers find the difficulty in enhancing and developing. It requires a strong foundation in word identification and decoding. Without skills in comprehension, pupils cannot understand and interpret the text that they are reading [12]. Not all the pupils were able to develop their skills when it comes to reading comprehension. Most teachers have difficulty in finding the most effective way to help the pupils comprehend the printed text or story that they are reading. The National Reading Panel stated that there are five distinct practices that teachers should utilize in making the pupils learn how to comprehend the text and improve their reading skills. It includes phonemic awareness, instruction in phonics, oral reading practice, vocabulary instruction, and comprehension strategy. Among these practices, reading comprehension can be the most essential.

The study of Majors [6] concluded that reading comprehension is a process that involves a lot of scopes. The primary participants of this process are the readers, the written text, and the reader's condition. The images innately elicit during or after the reading interact with images and prior knowledge. During the reading process, the readers enter the story world and connect and reflect it on the whole reading procedure. In line with this, the dual-coding theory assumes that in comprehending and remembering information, two codes are better than one system. When new knowledge is encoded verbally and nonverbally, the information is elaborated and promoted, the comprehension is increased, and the memory trace is strengthened [13]. It has been expanded recently in three different interventions, but the most similar of this theory was image creation intervention [3].

Miller [9] upholds this thought and defined image creation which is a part visualization as "forming a mental image in one's mind." To help the children comprehend words, an intervention can be an aid to this problem. Image creation is an intervention which pupils are responsible for drawing their image and another term of this is called draw-and-label visualization activity, wherein the teacher read aloud and let the pupils sketch pictures in their mind.

Similarly, image creation is the construction of internal representations that utilizes nonverbal mental codes that include the five senses [14]. Readers form mental pictures that represent the ideas in the texts. These images serve to enhance the interpretation of the written texts and may include our sense of sight, hearing, taste, smell, and touch. Visualizing or imaging is a substantiated best exercise to improve reading comprehension [8]. Research also implies that readers have an opportunity to extrapolate about the text, rather than be told by a teacher what is correct.

In addition, Van Meter, Aleksic, Schwartz, and Garner [16] stressed that drawing is one of the effective strategies that can help improve the reading comprehension of the pupils by knowledge organization. They suggested that when the readers draw, elements are organized to create mental representations as they connect their

background knowledge to form a new one. It was also found out that elementary pupils learn more information through drawing strategy rather than just text representations.

Likewise, it is easier to distinguish a picture rather than a text. A human can recall delicate details in images longer, with 90% restore of information three days afterward and 63% restore of information a year. The recall and recognition superiority of pictures over text is called Picture Superiority Effect (PSE) [1]. Additionally, image creation approach makes the story more fun, engaging, and understandable for the visual learners and even to the people with disability.

Eitel and Scheiter [5] also emphasized that pictures provide a backbone in which the pupils will use it as a basis of creating mental representations. Adding photos in a text can be helpful, especially to those poor readers because images can display more information that is hard to understand by the little text only. Moreover, pictures can also work as a clue to the readers to decide on which portion of the text are essential in making visual images. Images help learners develop their comprehension of the text. Image creation is one of the practical approaches to hasten the reading comprehension of the young learners to help the mind and attention more active in the process of this activity as visual provides a strong focus on vocabulary and help pupils to communicate and comprehend [2].

Hence, the importance of image creation in enhancing the reading comprehension of the elementary pupils is undeniable. Though some researchers are questioning the effectiveness of image creation and that understanding what is behind the text or the story is difficult, the positive effect of image creation can decrease the difficulty in understanding and interpreting the text. Creating images in the minds of the pupils can improve their comprehension. It is easy for the pupils to explain the ideas or the thoughts that they have in their minds rather than defining the concepts that they are not familiar with. As a result, pupils with skills in mental imagery are good readers and evaluators. Apart from it, the pupils who are not skilled in making mental images are poor readers, and they have difficulty in comprehending the story or text that they are reading.

OBJECTIVES OF THE STUDY

The researchers aimed to aid the learners' difficulty in reading comprehension by contributing and participating in the development of a variety of teaching strategies that will respond to the demands of the learners in learning. Hence, there is a need to administer a study that is intended to determine the effectiveness of Image Creation Intervention in Grade IV pupils of Bula Central Elementary School during S.Y. 2018-2019. The problems are as follows;

1. What is the level of mastery in reading comprehension of the control group and experimental group in pretest?
2. What is the level of mastery in reading comprehension of the control and experimental group in posttest?
3. Is there a significant difference in reading comprehension in the pretest and posttest scores of the control group and the experimental group?
4. Is there a significant difference in reading comprehension in the posttest scores of the control group and the experimental group?
5. Is there a significant difference in the mean gain score in reading comprehension of the control group and experimental group?

MATERIALS AND METHODS

Respondents of the Study

There was a total of 60 Grade IV pupils as subjects of the study. The subjects consisted of two groups, with 30 students in experimental group and control group. They were chosen as the subjects of the study through criterion sampling because most of them have difficulty in reading and understanding the given texts or story independently based on their Philippine Reading Inventory (PHIL-IRI) result. To identify the experimental and control group, the tossing of the coin was used.

Instrumentation

The researchers developed a thirty-five (35) item reading comprehension test. The coverage was based on the third grading period. It was constructed to measure the reading comprehension of the pupils before and after applying image creation intervention. It was validated by three Master Teachers major in Literature and English language related expertise. Afterwards, the reading comprehension test was subjected to pilot testing at Fatima Central Elementary School. Then, the reliability of the test was calculated to ensure that the test questionnaire was appropriate for the level of learning of the Grade IV pupils. The validated test questionnaire for reading comprehension was then used during the pretest and posttest activity of the pupils.

Additionally, different kinds of worksheets or the so-called image creation intervention tools about image creation were given. It was evaluated by the cooperating teacher and was approved to utilized in the learning process of the pupils. Each session, the pupils were given worksheet wherein they had drawn what they understand, and they converted their mental images into a drawing. They made sure that they can easily remember the flow of the story based on what they had drawn.

Moreover, 10 lesson plans were developed by the researchers as a guide in conducting the actual experiment. Its methodology specifically emphasized the image creation intervention. The other 10 lesson plans for the control group were grounded to

the lesson plans of the experimental group but the image creation intervention activities were removed. The lesson plans made was based on the actual lessons of the subjects in the Curriculum Guide (CG) and Daily Lesson Log (DLL) of the teachers. The lesson plans were evaluated by the cooperating teachers in terms of its appropriateness in the learning capacity of the pupils and was approved to employ during the 10 sessions.

Data-gathering Procedure

Before the actual data collection, the researchers wrote a letter of permission to the Principal of Bula Central Elementary School. Upon approval of the request, the researchers coordinated and discussed the research and arranged the research activities with the School Head. The research activity commenced on informing the subjects on all the features of the research that may affect their willingness to participate. During the conduct of the study, the researchers explained the objectives and directions of the study to the pupils in their classroom. They guided them in answering the items. After the given time, the tests were collected. Before the implementation of image creation intervention, the pretest was administered both in the experimental and control group. The pupils were given 30 to 60 minutes to finish the test. After the given time, the reading comprehension test was collected. The image creation intervention was administered in the experimental group by the researchers for a period of ten days. By the end of ten sessions, a posttest was administered in both experimental and control group. After the given time, reading comprehension test was collected. Lastly, all the gathered data were collected. They were subjected to statistical treatment and data analysis to determine the effectiveness of image creation in enhancing the reading comprehension of Grade IV pupils.

Table 1: Ebel's Criteria of Mastery

Scores	Ebel's	Qualitative Description	Verbal Interpretation
30-35	86-100%	Very Good	Very Highly Mastered
25-29	71-85%	Good	Highly Mastered
14-25	40-70%	Average	Moderately Mastered
6-13	15-39%	Poor	Less Mastered
0-5	0-14%	Very Poor	Least Mastered

Statistical Treatment

The data gathered for this study were treated using frequency count and weighted mean. The scale with range and description below was used to describe the level of the reading comprehension based on Ebel's criteria of mastery.

RESULTS AND DISCUSSION

Table 2 presents the level of reading comprehension of the pupils in control and experimental group during the pretest in Bula Central Elementary School located in General Santos City. Results reveal that the mastery of reading comprehension of the control group

Table 2. Mastery Level in the Reading Comprehension of the Pupils in the Control Group and Experimental Group during the Pretest

Score	Ebel's Criteria	Control		Experimental		Verbal Interpretation
		f	%	f	%	
30-35	86-100	0	0.0	0	0	Very Highly Mastered
25-29	71-85	1	3	0	0	Highly Mastered
14-24	40-70	14	47	17	57	Moderately Mastered
6-13	15-39	14	47	12	40	Less Mastered
0-5	0-14	1	3	1	3	Least Mastered
Mean		**40.6**		**40.0**		Moderately Mastered

shows that 47% of the pupils have less mastered and 47% have moderately mastered the reading comprehension. There are 3% of the pupils who highly mastered reading comprehension and 3% have least mastered reading comprehension. None of the pupils have very highly mastered reading comprehension.

On the other hand, results reveal that the mastery of the reading comprehension of the experimental group gives 57% of the pupils have moderately mastered reading comprehension and 40% have less mastered the reading comprehension. There are 3% of the pupils who have least mastered reading comprehension. None of the pupils have very highly and highly mastered reading comprehension.

Overall, the pupils in the control group have moderately mastered reading comprehension with a mean of 40.6 while the pupils in the experimental group have moderately mastered reading comprehension with a mean of 40.0. This implies that the pupils in the control group and experimental group have average level of mastery in reading comprehension. This indicates that the pupils have moderately mastered reading comprehension before applying image creation intervention. This means that there should be more reading materials that should be provided to the pupils to improve their reading comprehension.

In line with this, the subjects of the study were mostly frustration readers and instructional readers that are shown in their PHIL-IRI results. To elaborate it, 74% of the pupils in control and experimental group were frustration readers during Philippine Informal Reading Inventory for pretest oral reading in English S.Y 2018 – 2019. This situation is coherent because the pupils have limited understanding in the story or written text that they are reading. Pang [11] stated that average readers have difficulty in answering the text-implicit questions and that text reprocessing can help them pay their language shortfalls. To become good readers, the pupils need to incorporate their prior knowledge in information that was written in the text that they are reading.

Moreover, the study of Stewart [15] involved fourth grade pupils who have an average level of reading comprehension. He used non-fiction text that were based on the average level of reading comprehension of the pupils. In his study, those pupils can read the text but have the difficulty in comprehending and interpreting the written text. To help the pupils improve their reading comprehension, he allowed the pupils to read the non-fiction text. Then, he instructed the pupils to draw or sketch the picture in their minds. Lastly, he asked comprehension questions to the pupils. The comprehension questions include open-ended questions to validate if the pupils were able to comprehend the text that they are reading.

Table 3 presents the level of reading comprehension of the pupils in control and experimental group during the posttest in Bula Central Elementary School located in General Santos City.

Table 3. Mastery Level in the Reading Comprehension of the Pupils in the Control Group and Experimental Group during the Posttest

Score	Ebel's Criteria	Control		Experimental		Verbal Interpretation
		f	%	f	%	
30-35	86-100	0	0.0	0	0.0	Very Highly Mastered
25-29	71-85	1	3.3	2	6.7	Highly Mastered
14-24	40-70	11	36.7	14	46.7	Moderately Mastered
6-13	15-39	18	60.0	14	46.7	Less Mastered
0-5	0-14	0	0.0	0	0.0	Least Mastered
Mean		42.5		43.0		Moderately Mastered

Results reveal that the mastery of reading comprehension of the control group shows that 60% of the pupils have less mastered and 37% have moderately mastered the reading comprehension. There are 3% of the pupils who highly mastered reading comprehension. None of the pupils have least mastered and very highly mastered reading comprehension.

On the other hand, results reveal that the mastery of the reading comprehension of the experimental group gives 47% of the pupils have moderately mastered reading comprehension and 47% have less mastered the reading comprehension. There are 7% of the pupils who have highly mastered reading comprehension. None of the pupils have least and very highly mastered reading comprehension.

Overall, the pupils in the control group have moderately mastered reading comprehension with mean of 42.5 while the pupils in the experimental group have moderately mastered reading comprehension with mean of 43.0. This implies that the pupils in the control group and experimental group have average level of reading comprehension during posttest. Consequently, this means that the pupils in control and experimental groups have moderately mastered reading comprehension after intervention.

In line with this, it can be seen from the results that there is a mild increase in the mean score generated in both groups however, the pupils in the experimental group have more increase than the control group. This mild difference can be presumed to the Image Creation Intervention employed in the experimental group. The intervention has a possibility to contribute to this change as Stewart [15] stated in his study that the poor readers were able to comprehend the text effectively when Image Creation Intervention was embedded in their learning process.

Table 4. Difference between the Means of the Pretest and Posttest Scores in the Reading Comprehension of Pupils of the Control Group and the Experimental Group

	Pretest	Posttest
Control Group	14.200	14.867
Experimental Group	14.000	15.033
t-computed	0.157	-0.121
p-value	0.876	0.904
Remarks	Not Significant	Not Significant

Table 4 presents the difference between the means of the pretest and posttest scores in the mastery level in the reading comprehension of Grade 4 pupils of the control group and experimental group. The t- computed value during pretest of the control group and experimental group is 0.157 with a p-value of 0.876, while the t-computed value during posttest is -0.121 with a p-value of 0.904. Results reveal that there is no significant difference between the means of the pretest scores and posttest scores of the control group and experimental group. The result implies that there is no significant difference in the reading comprehension of the pupils in the control and experimental group before and after the intervention. It can be noted however that though not significant, there is better increase in the mean of the reading comprehension of the pupils in the experimental group than the control group after a 10-session intervention.

Similarly, this result is aided by the study of Yusuf [17] that the pupils who were engaged in Image Creation Intervention got a higher score in the test after the intervention compared to the control group. Pupils in the experimental group were eager to learn when the intervention was applied because they feel that they are making movies inside their minds. Some pupils said that during the image creation session, they pretend like they are turning on a television inside their heads. As a result, the pupils were able to improve their comprehension and make their reading task more engaging and fun.

Table 5. Difference in the Posttest Scores of the Reading Comprehension of Grade IV Learners of the Control Group and the Experimental Group

Group	Mean	Mean Difference	t computed	p-value	Remark
Control	14.867				Not Significant
		-0.166	-0.121	0.904	
Experimental	15.003				

Table 5 presents the difference in the posttest scores of the control group and experimental group. The result shows that the t computed value of the posttest scores of the pupils in the control and experimental group after the intervention is -0.121 with the p-value of 0.904.

The results in both the control and experimental group indicates that there is no significant difference between the posttest scores of the pupils. This implies that there is no significant difference in the reading comprehension level of the pupils in both control and experimental groups after intervention.

These findings correlate to the result of the study of McNamara and Kendeou [7] that deterioration in reading strategy often leads to poor reading performance and low mastery of reading comprehension skill. It is because reading comprehension is a result of mental images in the learners' mind. Without the ability in creating images, the learners will find it hard to understand the written text.

The sample drawings of good readers (Figure 1) shows the interpretation and comprehension of the pupils based on the stories that they read. Each drawing reflects how the mind of the pupils create a picture and as a result, the events in the stories were clearly presented in their drawing and it can be easily understood.
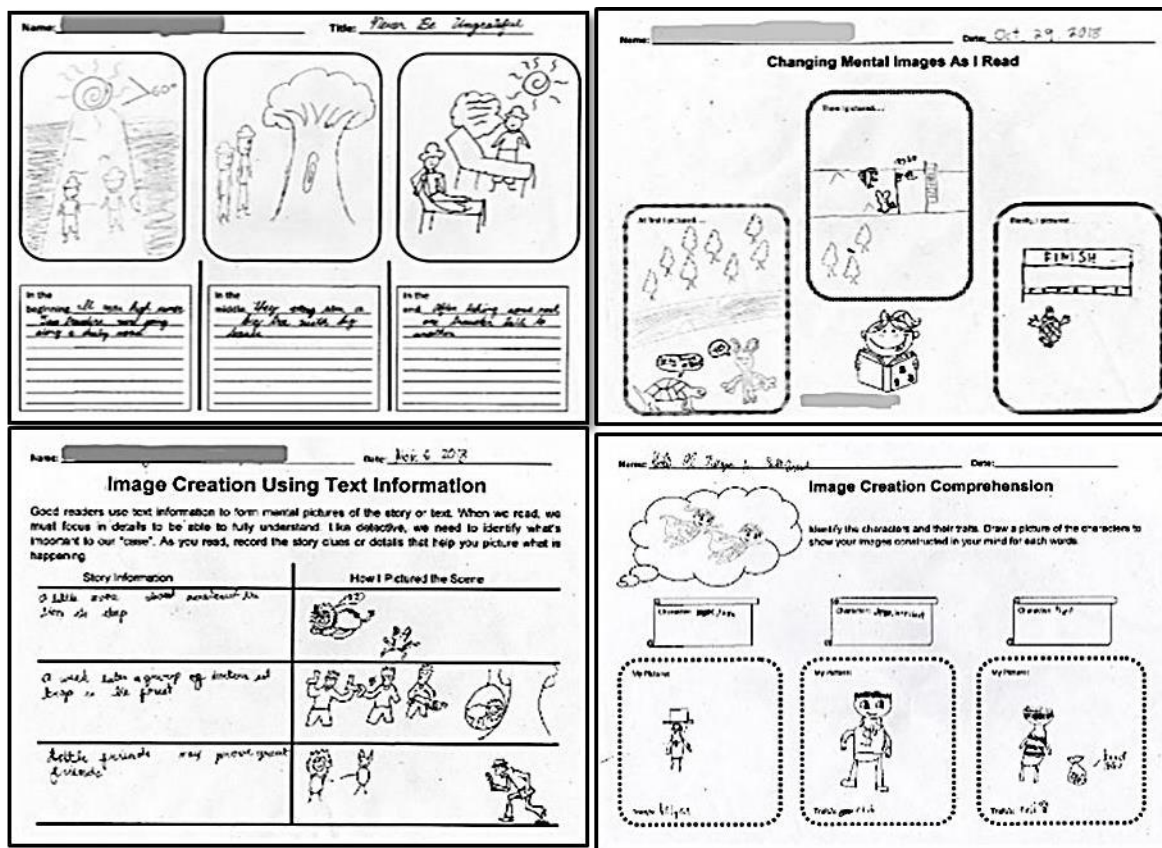

Figure 1. Sample Drawings of Good Readers

In the same manner, during the conduct of the study, the researchers observed that the pupils have difficulty in understanding the written text because of their limited vocabulary. The pupils were not able to understand the story. The researchers translated the English words into Filipino or Cebuano so that the pupils can follow the flow of the story. Additionally, during the drawing session in the experimental group, most of the pupils were not active in the learning process, and their primary reason is that they do not know how to draw and some of them do not also know how to read. They have difficulty in creating mental images because they do not fully understand the text.

Furthermore, one of the main reasons of a lack of significant difference is the drawing skill of the pupils. Some of the pupils can easily translate the images in their minds into a drawing because they are gifted with visual and spatial intelligence. However,some pupils have difficulty in drawing pictures because they do not know how to draw. This factor is also the reason why the pupils lost their interest in the drawing session. As stated by Montenegro & Cascolan [10], being

able to realize the learning styles of the pupils can greatly help the teachers decide on what learning activities are suited to the learners' needs and interests. It can help to promote pupil's engagement and participation in class most importantly, if their learning styles are well-considered. As a result, some pupils tend to copy the drawing of their seatmates, and the worst thing is that they prefer to sleep during the drawing session because they have no interest in drawing.

Figure 2. Sample Drawings of Poor Readers

These pictures (Figure 2) are sample drawings of poor readers. It shows their difficulty in creating their own images based on their interpretation of the story. The drawings clearly reflect the pupils' need to enhance their reading comprehension to have a better outcome in interpreting the stories. Moreover, the time frame is also a reason why significant change is not evident in the experimental group. A study that Yusuf [17] conducted reveals that the comprehension scores of primary grade pupils significantly increased after the Image Creation Intervention implementation for eight weeks. This study also suggests that two weeks of exposure to Image Creation Intervention does not yield a significant change in the reading comprehension of the pupils. There is a slight improvement but is not significant. Table 6 presents the difference in the mean gain scores of the pupils in the control and experimental group. The result shows that there is no significant difference between the mean gain scores in reading comprehension of the control group and the experimental group. This is supported by a t-computed value of -0.392 with a p-value of 0.696. The result implies that the use of image creation intervention in enhancing the reading comprehension of the pupils is not effective, which is also the same result with the use of the conventional method. This further means that the teachers cannot apply image creation intervention to increase the mastery level of the pupils in reading comprehension.

Table 6. Difference between the Mean Gain Scores of the Control and Experimental Groups in the Mastery Level in the Reading Comprehension of Grade 4 Pupils

Group	Mean Gain	SD	t computed	p-value	Remark
Control	0.667	4.180	-0.392	0.696	Not Significant
Experimental	1.033	2.953			

The result is supported by the findings of Dahle [4] in his study for sixth-grade pupils, which revealed that visualization strategy has no significant relationship in reading comprehension. The average gains in reading comprehension were 195 for the treatment group and 64 for the control group. The median significance test above demonstrates that the gains in reading comprehension were not statistically significant at the 0.05 level even though with a median gain of 187 from the experimental group and 60 from the control group. This implies that visualization strategy had no significant effect in enhancing the reading comprehension of sixth-grade pupils.

DISCUSSION AND CONCLUSION

Based on the findings, the pupils have an average level of reading comprehension before applying image creation intervention. They also have an average level of reading comprehension after applying image creation intervention. Results revealed that there is no significant difference in the reading comprehension of the pupils between the control group and the experimental group before and after using image creation intervention. There is no significant difference in the posttest scores in reading comprehension of the control group and the experimental group. Lastly, there is no significant difference between the mean gain scores in reading comprehension of the control group and the experimental group.

The study does not claim to report enormous changes. However, this study revealed that the pupils can make use of their spatial intelligence to create mental images. The result indicates that there is a need for teachers to facilitate image creation intervention method to children who prefer creating images while teachers can use another strategy such as videos and oral reading activities for other learners to consider their different learning styles. The familiarity of pupils in the image creation intervention method should also be

considered prior to engaging them in the intervention. The school administrators may implement programs for advance or higher-grade pupils by using image creation intervention for a longer period. Future research can also be done using strategies such as multimedia and graphic organizers.

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