



# EFFECTIVENESS OF SUPPLEMENTARY MATERIALS IN DEVELOPING VOCABULARY COMPETENCE UTILIZING VIDEO LESSONS AMONG GRADE 5 LEARNERS

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**Abstract.** This study aimed to find out whether utilizing video lessons was effective in improving the vocabulary competence of Grade 5 learners. The subjects of the study were forty (40) learners of Saavedra Saway Central Elementary School for the school year 2020-2021 in General Santos City, Philippines. The study used the experimental single-group design using Pre-Test and Post-Test. Frequency counts and t-test for uncorrelated sample was used to treat the data gathered. The findings of the study revealed that most of the Grade 5 learners improved in their vocabulary competence after the use of supplementary material. Nevertheless, these supplementary materials were useful and should be utilized by teachers to help students improve their vocabulary competence.

**Keywords:** *Supplementary materials, education, developing vocabulary competence, video lessons, grade 5 learners, experimental single-group design, pre-test, post-test, Philippines*



## 1. INTRODUCTION

Education in the new normal created issues and problems. It demands a pressing need to innovate and implement effective teaching strategies utilizing different supplementary materials. The sudden learning transition has prompted the teachers and learners to pave the way for digital tools such as YouTube, Google classroom, and other online platforms to provide continuous learning among learners. Hence, multimedia instruction is crucial in helping education still be possible during Corona Virus Disease (COVID) -crisis (Asaad, 2019).

Vocabulary Knowledge was regarded as a fundamental key to reading comprehension and certainly one of the most critical competencies a child must learn in school. The ability to read and understand the meaning of words is a strong indication of the learners' academic achievement. Thus, the subject's significance makes it necessary to carefully choose relevant instructional materials to teach to the learners (Clark and Mayer, 2017; Sherman, 2021).

According to the Elementary and Secondary Education Act of 2001, the K-12 education program aims to establish innovative and creative best practices through

digitized instructional materials to help learners accomplish specified learning goals. However, one of the challenges the Filipino teachers face is the availability of appropriate and digitized instructional materials.

According to DepEd Undersecretary, every school year, one of the problems that the agency faces is the lack of learning materials because the budget is insufficient. With this problem at hand, educators needed to find innovative and creative ways to increase learners' vocabulary to improve their reading comprehension (Barlette and Strough, 2018).

The use of multimedia instruction can be a part of a learning system because it has a lot of pedagogical benefits to offer. In the absence of face-to-face in-person learning, instructional videos can help learners who are now required to embrace independent and self-paced learning. With the use of the videos, learners can pause, rewind and re-watch them to learn at their own pace (Aldoobie, 2016; Klupiec, Pope, Taylor, Carroll, Ward, and Celi, 2019).

For this reason, the researcher aims to develop instructional videos on vocabulary as an instrument of

instruction in improving learners' reading comprehension. The instructional videos to be designed may serve as supplementary teaching materials for the teaching-learning process (Bravo, Amante-Gracia, Simo, Enache, and Fernandez, 2021).

### 1.1. Research Questions

This study aimed to find out whether the use of video lessons was effective in developing vocabulary competence among the Grade 5 learners of Saavedra Saway Central Elementary School.

Specifically, the study determined the following:

1. What are the pre-test scores of Grade 5 learners in vocabulary before utilizing video lessons?
2. What are the post-test scores of Grade 5 learners in vocabulary after utilizing video lessons?
3. Is there a significant difference between the pre-test and post-test mean gain scores of Grade 5 learners in vocabulary utilizing video lessons?

### 1.2. Theoretical Framework

This study was anchored on the Behavioral Learning Theory by Skinner (1967). Understanding how to encourage and assist learners in the classroom requires knowledge of behavioral learning theory. A response to the correct stimulus transfers information from teachers to learners. In behavioral learning, students are passive participants; teachers provide them with information as part of a stimulus-response system. The teachers teach the learners how to react and respond to various stimuli using behaviorism. It must be done frequently to remind students of the behavior that a teacher is looking for. In behavioral learning theory, positive reinforcement is crucial. Without positive reinforcement, the learners will soon abandon their solutions if they do not appear to be working.

Secondly, this study was also anchored on the Cognitive Learning Theory by Jean Piaget (1952). According to the cognitive development theory, children's intelligence evolves through time. Learning is only one aspect of a child's cognitive development. The youngsters must develop a mental model of the world or construct. Children go through phases of cognitive development due to the interaction of natural abilities and external circumstances. Piaget proposed four stages of cognitive development in his theory. Sensorimotor stage: birth to two years, Preoperational stage: two to seven years, Concrete operational stage: seven to eleven years, and Formal operational setting: twelve years and up. The steps' order is invariant across cultures and follows the same invariant called unchangeable order. The children go through the same phases in the same order but at different rates.

Lastly, the Constructivist Learning Theory by John Dewey (1974). The primary premise of constructivist theory is that when people gain experience, they learn from what they already know. That is, humans, derive meaning from their experiences. Constructivist thinking is based on Piaget and Vygotsky's cognitive ideas in numerous ways. The children learn actively from Piaget, construct systems, assimilate and accommodate all types of science, etc. Thus, one can say that the "top-down" and "bottom-up" learning methodology is born of constructivist thinking. It implies that the teacher will present the central idea first, and the learners will receive the details. In this way of thinking, the teacher does not teach the details since they are challenging to comprehend. According to constructivism theory, the learner should place a premium on the learning process. The learners, not the others, are responsible for actively expanding their knowledge. They must be accountable for their progress.

### 1.3. Conceptual Framework

The schematic diagram in figure 1 illustrates two boxes. The first is the independent variable, the Pre-test

Scores, and the second box shows the dependent variable, the Post-test Scores. They are presented to demonstrate whether using video lessons have effectively

Independent Variable                      Dependent Variable

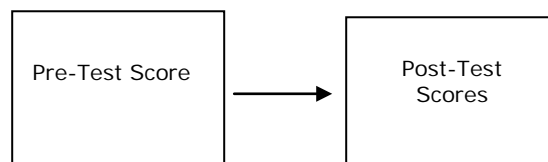


Figure1. Conceptual Framework

## 2. METHOD

### 2.1 Research Design

This study utilized the single group pre-test and post-test experimental design in educational research. It involved an experimental group. According to Ardales (2008), as cited by Glenn (2016) the one-group pretest-post-test design is without a control group. However, it has a pretest or a baseline observation (O1), which allows the investigator to determine the effects of the treatment by comparing the pretest and post-test (O2) results. This design is subject to validity treats history, maturity, testing, instrumentation, and statistical regression.

The construction of supplementary materials using the video lessons was the basis for determining the vocabulary competence of grade 5 learners. They underwent the Pre-test and Post-test.

The data-gathering tool included a validation tool to determine the level of validity of the constructed vocabulary test for Grade 5 learners. Developing a vocabulary test assessed the vocabulary competence of Grade 5 learners. Lastly, the validity of the instructional videos in terms of content quality, instructional quality, and technical quality was determined using the Department of Education (DepEd) Rating sheet for Non-Print Supplementary Materials during the evaluation.

The research and development method produces a particular product and tests its effectiveness. Research development is defined as a purpose to result in the effects and ends with an evaluation process. Figure 1 shows the research design.

Experimental Group	$O_1 - X - O_2$
where:	
$O_1$	refers to the pre-test result in the vocabulary of the experimental group
$O_2$	refers to the post-test result in the vocabulary of the experimental group
X	refers to video lessons as treatment

### 2.2 Research Locale

The researcher conducted the study in Saavedra Saway Central Elementary School, Division of General Santos City. The school is one of the oldest schools in the Labangal District. The Barangay is located in a place dominated by both the Christians and Muslims who live together in peace and harmony. Fishing is the everyday livelihood of the people, and tuna as their main product.

### 2.3 Research Respondents

The study's subjects were 22 boys and 18 girls or forty (40) Grade V pupils of Saavedra Saway Central

Elementary School for the school year 2020-2021. This study was conducted using a single group design utilizing video lessons to determine the learners' vocabulary competence. The researcher employed Census or Total Enumeration in the conduct of the study (Lieberman and Singh, 2017).

**Table 1**

**Distribution of Respondents**

Boys	Girls	Total
22	18	40

## 2.4 Data Gathering Procedure

Before conducting the study, the researcher constructed a 100-item vocabulary test with a specifications table. It was validated by three (3) Master Teachers and obtained an overall mean of **4.12**, which was described as Very highly valid in its content validity. It was pilot tested on forty (40) randomly selected Grade 5 pupils of Saavedra Saway Central Elementary School.

After the pilot test, the results were subjected to item analysis. Then immediately after the examination, the researcher revised the table of specifications and tested questions to develop a final 50-item vocabulary test.

In deciding whether the item was to be retained, revised, or rejected, the researcher referred to the Evaluation Code for item analysis by Asaad (2019). On the other hand, in determining the reliability of the assessment tool, the researcher utilized Cronbach's Alpha to check how a set of items were closely related as a group.

The needed data to answer one of the research problems of this study were gathered by developing a vocabulary test to assess the vocabulary competence of the Grade 5 pupils of Saavedra Saway Central Elementary School.

Furthermore, for research problem number two, the Department of Education (DepEd) Rating sheet for Non-Print Supplementary Materials was used to evaluate instructional videos' validity on vocabulary competence in terms of content quality, instructional quality, and technical quality. The Five-point Likert Scale was used to interpret the results.

The questionnaire used in this research was a researcher's made questionnaire. The researcher made one hundred (100) questions with the Table of Specification (TOS). Experts and three master teachers validated this researcher's completed questionnaire. After the experts had finished checking and validating each question, they suggested that the researcher should follow Bloom's Taxonomy of percentages in making the questionnaire and arranging it into three levels which were 60% of easy questions and 30% of average queries, and 10% of difficult questions. The experts validated the final number of questions being used by the researcher in her study, one hundred (100) questions, with the Table of Specifications. After the experts validated the questionnaire, the researcher submitted it to her adviser for correction and suggestion and ensured the reliability of the instruments.

The process of obtaining a reliability coefficient in this method was determined by Kuder-Richardson Formula 20. Hence,

$$r_{xx} = \left[ \frac{N}{N-1} \right] \left[ \frac{SD^2 - \sum piqi}{SD^2} \right]$$

Where N is the number of items,  $SD^2$  is the variance of scores on a test defined as, and  $piqi$  is the product of the proportion of passed and failed for item i. The symbol pi denotes the proportion of individuals giving item I and the proportion failing by  $qi$ , where  $qi = 1 - pi$ . The proponent strictly observed the steps in applying the Kuder-Richard Formula 20:

First, she computed the variance  $SD^2$  of the test scores for the whole group. Second, she determined the proportion passing each item ( $pi$ ) and failing each item( $qi$ ). Third, she multiplied ( $pi$ ) and ( $qi$ ) from each item; and sum for all the items. It gave the  $\sum piqi$  value. Finally, the researcher substituted the calculated values in the formula.

After that, she computed it to determine whether the 100-item Test Instrument piloted was reliable.

After knowing the instrument's reliability, the proponent did the item analysis to determine the index of difficulty and discrimination of each item. To do this, the researcher strictly followed simple but effective procedures for item analysis:

First, she arranged the test scores from the highest to the lowest. Second, she got one-third of the papers from the highest and one-third from the lowest scores. The middle one-third was set aside. Next, she counted the number of students in the upper and lower groups who chose the options. Then, she recorded the frequency from step 3, and furthermore, she estimated the index of difficulty. She used the formula: Index of difficulty =  $\frac{\sum x}{N} \times 100$

Where  $\sum x$  is the sum of the correct answer of the upper and lower groups, and N is the number of cases in the upper and lower groups. Difficulty refers to the percentage of getting the correct answer to each item. The smaller the ratio, the more complex the item is. The majority criterion (50% plus one) is the basis for interpreting the difficulty index, whether the item is difficult or easy. When the item has a 50% difficulty index, it is neither easy nor difficult; the lower the percentage, the more difficult it is.

Finally, the researcher estimated the item discriminating power. In assessing the item discriminatory power, she compared the correct responses from the upper and lower groups. Using this formula, one could compute the index of discrimination quickly:

$$\text{Index of discrimination} = \frac{RU - RL}{NG}$$

Where RU was the proper response of the upper group, RL was the appropriate response of the lower group, and NG was the member of pupils in each group.

The discriminating power of an item was not more than 1.00. A maximum positive discriminatory power is revealed by an index of 1.00. It is obtained when all upper group pupils choose the correct answer and not the lower group. Negative discriminating power was obtained when more pupils in the lower group got the correct answers than in the upper group. Moreover, a zero-discriminating power (0.00) attained when the equal frequency of the upper and lower groups received the right answer. The items having negative and zero discriminating power should be revised or improved.

Table 2 presents the discrimination index and the difficulty of the test item.

**Table 2**

*Index of Discrimination and Difficulty of test Item*

INDEX OF DISCRIMINATION	ITEM EVALUATION
0.40 or higher	Very Good Item
0.30 – 0.39	Good Item
0.20 – 0.29	Marginal Item
0.19 or below	Poor Item
INDEX OF DIFFICULTY	ITEM EVALUATION
0.70 or higher	Low Difficulty
0.31 – 0.69	Moderate Difficulty
0.30 or below	High Difficulty

The proponent retained the items that passed the difficulty and discrimination index in the item analysis. Other items that were marked revise or improve were carried out. The 100-item test underwent face validation. It was validated by three (3) experts who are Master teachers. The instrument was validated using the following criteria: 1.) clarity of direction and indicators, 2.) presentation and organization, 3.) suitability of indicators, 4.) adequacy of indicators per category, 5.) congruency to the purpose, 6.) impartiality of the researcher, and, 7.) appropriateness of the options and evaluation rating system. They suggested revising the items to be valid and reliable through their expertise. The instrument obtained an overall mean of 4.12 indicating that the instrument was very good.

Out of the 50-item Test in Vocabulary Test in Grade 5 that went thorough validation and piloting, the researcher developed an official 30-item Test used in the pre-test and post-test coming from the supplementary materials.

The following were the procedures followed in conducting the research study:

The researcher proceeded to ask permission and approval from the principal and the barangay to conduct the study since it is a COVID-19 pandemic. The acceptance of IATF from the barangay was needed after the approval. The pre-test was conducted on the 40 grade 5 pupils residing in the different Puroks. It was monitored adequately after the conduct of the pre-test. The researcher immediately collected the test papers for analysis and interpretation. The test was conducted in every purok following the proper protocol with face masks, social distancing, and alcohol use. In the following week, the researcher taught the lesson based on the coverage of the study for the first quarter by observing proper protocol again. The scope of the study lasted for two months. It was a weekly activity using the SLM in which the researcher taught the lesson in every purok. Proper reorientation for the parents to guide their children in the different coverage lessons under SLMs. After two months of experiments, a post-test was conducted to analyze the data, compare the pre-test results, and determine whether the use of SLMs effectively improved the academic performance of Grade 5 pupils in vocabulary. The t-Test of uncorrelated data was used because the respondents 40 belonged to a large population.

Having found the instrument valid and reliable, the researcher administered the questionnaire. Purok gave the learners modules for them to answer. But she needed to follow the protocol in distributing and retrieving the Self-Learning Modules to ensure the health and safety of each individual. The validated questionnaire was conducted aligned with the MELCs for Grade 5 English for the first quarter, and it has a Table of Specification. The researcher prepared instructional materials. A pre-test was conducted in each Purok with the proper guidance of the teacher. They followed the schedules and protocols to ensure the safety of the learners and teachers during this pandemic. The validity and comparison were made after conducting the post-test. The data were recorded and computed appropriately.

Choose the topics focusing on vocabulary competence among Grade 5 learners, create the concept and split the content into lessons or just small tutorials for a start, and create a video platform that would fit the demands and needs of the learners. In this scenario, the videos were all focused on the vocabulary competence that could enhance the critical thinking of the Grade 5 learners to respond to the different learning activities created by the teacher. Then, the teacher created video lessons and styles. Lastly, she made a video lesson plan or outline to provide spontaneity in the study.

The study used the appropriate tools to analyze and interpret the gathered data. Appropriate statistical tools were used for each subproblem in treating the data correctly. For sub-problems 1 and 2, frequency count and percentage

distribution were utilized to determine the pre-test and post-test mean scores. Subproblem number three was treated using the t-Test for the correlated sample. It was used because the sample size was big.

### 3. RESULTS AND DISCUSSION

#### 3.1 Pre-test Scores of Grade 5 Learners in Vocabulary

The Table below presents the Pre-test Scores of Grade five learners in Vocabulary before the treatment.

It can be gleaned that of the forty (40) respondents, no learner obtained very high and high scores. Learner numbers 3, 17, 34, 36, and 38 with obtained scores of 21, 24, 21, 24, and 24 respectively. These were their scores during the pre-test activity.

As shown, twenty-three learners got low scores during the pre-test, and these were learners 1, 2, 4, 7, 8, 9, 10, 16, 20, 21, 22, 23, 24, 25, 29, 30, 31, 32, 33, 35, 37, 39, and 40 with obtained scores of 20, 18, 15, 20, 18, 16, 15, 20, 12, 14, 16, 20, 18, 11, 12, 16, 14, 18, 19, 16, 18, 20, and 20 respectively. Out of 40, 12 learners got very low scores, and these were learner numbers 5, 6, 11, 12, 13, 14, 15, 18, 19, 26, 27, and 28 with obtained scores of 8, 10, 10, 8, 10, 8, 4, 8, 10, 9, 10, and 8 respectively.

Generally, the mean of the 40 learners for the pre-test was 15.1 or 30.15 percent which was low.

Research suggested that instructional videos increase the learners' engagement through a learner-centered approach. Moreover, with the increasing popularity of multimedia applications and devices such as smartphones and laptops, the opportunity to learn is no longer confined to the classroom walls (Fabos, 2021; Thorpe, 2016; Giannakos, Chorianopoulos, Ronchetti, Szegedi, and Teasley, 2019).

Also, implementing high-quality instructional materials anchors the work of effective learning. Thus, the schools and the government must join forces to ensure that every teacher and learner access high-quality instructional materials. Engaging and diverse educational resources promote learning, foster skills, and accelerate learners' achievement (Clark and Mayer, 2017; Sweller, 2018; Van Merriënboer and Ayres, 2019).

Furthermore, instructional technologies as a systematic process that involves people, procedures, ideas, and devices, which make learning purposeful in the classroom. These instructional technologies as teaching aids are rich text materials that combine multimedia such as print, models, mockups, filmstrips slides, transparencies, audio, and video into one well-thought-out and designed package (Mayer, 2021; Sherer and Shea, 2021).

In addition, video-based materials boost learners' creativity and cooperation. Access to videos can encourage learners to create meaningful contexts for their learning experiences. Furthermore, the richness of the type of information like pictures, sound, motion, and sometimes text is beneficial to learners because it enables them to learn both through visual and verbal means. It gives them an actual view of physical objects and sceneries, understand sequences in motion, and eventually see viewpoints that are not easy to grasp or difficult to perceive in nature (Donkor, 2020; He and Cooper, 2021).

**Table 3**

*Frequency counts and Percentage Distribution of Pretest Scores of Grade 5 Pupils in Vocabulary*

Pupil	Frequency	Percentage	Description
1	20	40	Low
2	18	36	Low
3	21	42	Average
4	15	30	Low
5	8	16	Very Low
6	10	20	Very Low
7	20	40	Low
8	18	36	Low
9	16	32	Low
10	15	30	Low
11	10	20	Very Low
12	8	16	Very Low
13	10	20	Very Low
14	8	16	Very Low
15	4	8	Very Low
16	20	40	Low
17	24	48	Average
18	8	16	Very Low
19	10	20	Very Low
20	12	24	Low
21	14	28	Low
22	16	32	Low
23	20	40	Low
24	18	36	Low
25	11	22	Low
26	9	18	Very Low
27	10	20	Very Low
28	8	16	Very Low
29	12	24	Low
30	16	32	Low
31	14	28	Low
32	18	36	Low
33	19	38	Low
34	21	42	Average
35	16	32	Low
36	24	48	Average
37	18	36	Low
38	24	48	Average
39	20	40	Low
40	20	40	Low
<b>Total</b>	<b>603</b>	<b>1, 206</b>	
<b>Mean Score</b>	<b>15.1</b>	<b>30.15</b>	<b>Low</b>

**3.2 Post-test Scores of Grade 5 Learners in Vocabulary**

Table 4 on page 50 presents the post-test scores of Grade 5 learners in vocabulary after the treatment. The frequency counts and percentage distribution were used in analyzing the data.

It can be observed that an improvement was reflected, and it was found that out of 40 respondents, two learners got very high scores, and these were learners numbers 17 and 36, with obtained scores of 42. Compared to the pre-test, no learner got a very high score.

On the other hand, eighteen learners got high scores. They were learner numbers 1, 3, 7, 8, 10, 16, 21, 23, 27, 30, 32, 33, 34, 35, 37, 38, 39, and 40 with obtained scores of 38, 40, 38, 35, 35, 36, 31, 34, 32, 32, 32, 38, 38, 35, 36, 38, 39, and 38, respectively.

As shown, sixteen learners got average scores. They were learner numbers 2, 4, 5, 6, 9, 11, 12, 13, 14, 19, 20, 22, 24, 25, 29, and 31 with obtained scores of 30, 25, 21, 24, 30, 25, 21, 24, 25, 22, 24, 28, 30, 28, 23, and 28, respectively.

While four learners got lower scores in the post-test. They were learner numbers 15, 18, 26, and 28 with scores of 18, 20, 18, and 14, respectively, and no learner got very low scores.

Generally, the mean score for the post-test of 40 learners was 30.2 or 60.15 percent, interpreted as high.

In the study about developing and validating computer-aided instructional material for Elementary Algebra, the findings revealed that the performance pre-test and post-test of the subjects in both Algebraic expressions and first-degree equation and inequalities are satisfactory and satisfactory, respectively. It would mean that the learners gain significant knowledge and skills using computer-aided instructional materials in Elementary Algebra (Abdullah, Fook, and Lan, 2016; Berk, 2019).

Moreover, teacher-developed materials may be digital or non-digital. These materials may include in the LRMSD (Learning Resource Management and Development System) catalog and or redeveloped for inclusion in the LRMSD repository, where schools are developing materials locally to meet specific Learning Resource/Teacher Resource/Professional Development Material needs they should use the Guidelines and Processes for LRMSD Development and Production V1.0 to ensure achievement of educational and technical quality (Hadijah, 2016; Van Merriënboer and Ayres, 2019).

Furthermore, the Department of Education (DepEd) Rating sheet for Non-Print Supplementary Materials was used to evaluate the validity of the educational videos for vocabulary competence. The device consisted of the following criteria: content quality, instructional quality, and technical quality. Content quality refers to the appropriateness and consistency of the content of the instructional videos and which should be linked with the learning competencies intended for English subjects in grade 5 (Bravo, Amante-Garcia, Simo, Enache, and Fernandez, 2021; Klupiec, Pope, Taylor, Carroll, Ward, and Celi, 2019).

**Table 4**

*Frequency counts and Percentage Distribution of Post-test Scores of Grade 5 Pupils in Vocabulary*

Pupil	Frequency	Percentage	Description
1	38	70	High
2	30	60	Average
3	40	80	High
4	25	50	Average
5	21	42	Average
6	24	48	Average
7	38	76	High
8	35	70	High
9	30	60	Average
10	35	70	High
11	25	50	Average
12	21	42	Average
13	24	48	Average
14	25	50	Average
15	18	36	Low

16	36	72	High
17	42	84	Very High
18	20	40	Low
19	22	44	Average
20	24	40	Average
21	31	62	High
22	28	56	Average
23	34	68	High
24	30	60	Average
25	28	56	Average
26	18	36	Low
27	32	64	High
28	14	28	Low
29	23	46	Average
30	32	64	High
31	28	56	Average
32	32	64	High
33	38	76	High
34	38	76	High
35	35	70	High
36	42	84	Very High
37	36	72	High
38	38	76	High
39	39	78	High
40	38	76	High
<b>Total</b>	1, 207	2, 406	
<b>Mean Score</b>	30.2	60.15	High

Table 4 shows the effectiveness of instructional videos in improving the competence of Grade 5 learners in vocabulary with uncorrelated data utilized since the population was significant. The result revealed that the computed t-value of 22.54, was greater than the tabular value of 1.69. As a result, the null hypothesis was rejected. It would mean that the Supplementary Materials utilizing video lessons effectively improved the vocabulary competence of Grade Five learners.

Supplementary resource resources are optional; however, they are more useful in the teaching of English (ELT). To boost motivation, which is one of the essential aspects impacting learning, the teacher must augment materials. However, there has been little research into the supporting resources used by teachers in English language schools for teaching and learning objectives. Non-technical visual supplementary teaching materials were found to be more widely used than technical and audio/audiovisual materials. The majority of the resources were used for reading and writing. The teachers' technological knowledge, caution in choosing appropriate educational materials/techniques, infrastructure, and other factors all play a role (Bell and Bull, 2018; Gumban, 2018; Sweller, Kircher, and Clark, 2016).

Table 5  
Effectiveness of Video lessons among Grade Five Learners

Variable	Df	t-value		Description	Decision = 0.05
		Computed	Tabular		
	n-1				

Pre-test Score versus Post-test Score	3	22.54	1.69	significant	Reject H <sub>03</sub>
	9				

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