

# Effectiveness of Multimedia Resources in The Teaching of English In the Grade 4 Pupils Of Linao Central School: An Instructional Technology Intervention Plan

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**Abstract** — This study assessed the effectiveness of Multi-media Resources in the Teaching English in the Grade Grade 4 Pupils of Linao Central School. The findings of the study were the bases for the An Instructional Technology Intervention Plan. The quasi-experimental study determined the effectiveness of the utilization of multimedia resources in the teaching of English in the Grade 4 pupils classified into control and experimental group of Linao Central School. Quasi-experimental research is an empirical study used to estimate the causal impact of an intervention on its target population. In terms of grammar structure, experimental group proved to have improved in its performance having a majority of good and an increase in pupils doing very good compared to the pretest. Not one pupil did poor in the post test.

On the other hand, the comprehension level in experimental group also proved to have gotten better in level 4 which recorded 0 in the pretest. The group also noted a decrease in level 2 since some improved to level 4. Word meaning took a good turn having 10 pupils doing very good and has a majority of pupils in level 2 which is fair.

Further findings revealed that in vocabulary, the experimental group managed to improve their performance having scored in level 4 unlike previous performance. Majority is still doing good in vocabulary knowledge in level 3.

The level of difference in the performance of the Grade 4 pupils classified into control and experimental group before and after multimedia utilization in the Standardized Test in English in terms of grammar and comprehension are not significant, hence, accept the null hypothesis. Unlike in word meaning and vocabulary, the difference is significant, therefore, reject the null hypothesis.

The level of difference in the performance of the Grade 4 pupils classified into control and experimental group after multimedia utilization proved not significant in terms of grammar structure and comprehension. The decision was to accept null hypothesis because of non-significance. Conversely, findings in word meaning and vocabulary proved significant which lead to a decision of rejecting null hypothesis. The performance of the Grade 4 pupils classified into

control and experimental group in Grammar Structure, comprehension, word meaning and vocabulary have increased to the level of very good in the post test.

The utilization of multimedia proved not significant in the performance of the Grade 4 pupils classified into experimental group in grammar structure and comprehension and proved significant in word meaning and vocabulary.

***Keywords — Effectiveness; Mutli-media Resources; Teaching; English; Grade 4 Pupils***

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## I. Introduction

Over the past years, learning strategies have evolved and adapted the fast changing world of today. We have entered the world of technology which rapidly changes and if we do not advance ourselves we will be left behind using still the old and traditional ways. Students are becoming progressively more tech-savvy and multiple forms of visual media become the norm in their daily lives. Instructional pedagogy should embrace this trend in an endeavor to “speak their language”. There seems to exist a prevailing hypothesis among instructors and educators that the use of video and other forms of multimedia improve the quality of instruction and help students connect with the content. Researchers like Richard Mayer and A. Paivio with their cognitive theory on multimedia learning and Dual-Coding theory respectively are helping academic practitioners, teachers and students to learn when and how multimedia actually enhance learning, as well as help determine when visual media’s effects are negligible or even counterproductive.

Multimedia may be defined in multiple ways, depending upon one’s perspective. Typical definitions include the following: Multimedia is the “use of multiple forms of media in a presentation” (Schwartz &Beichner, 1999, p. 8); Multimedia is the “combined use of several media, such as movies,

slides, music, and lighting, especially for the purpose of education or entertainment” (Brooks, 1997, p. 17); Multimedia is “information in the form of graphics, audio, video, or movies. A multimedia document contains a media element other than plain text” (Greenlaw & Hepp, 1999, p. 44); Multimedia comprises a computer program that includes “text along with at least one of the following: audio or sophisticated sound, music, video, photographs, 3-D graphics, animation, or high-resolution graphics” (Maddux, Johnson, & Willis, 2001, p. 253).

### Learning Strategies

One of the major components in a classroom management is content management which focuses on a teacher’s management of space, materials, equipment, the movement of people, and the lessons that are part of a curriculum or program of studies (Froyen & Iverson, 1999, p. 128). This is where multimedia utilization comes in. A teacher should make it a part of his teaching life to use different learning strategies that are intended to influence the learners’ information

processing (Mayer, 1988, p. 11). Weinstein & Mayer (1986) describe these strategies as rehearsal, elaboration, organizational and monitoring strategies. According to the active processing assumption, humans are active processors who pay attention, select and organize information. Furthermore, different learning strategies are helpful for effective knowledge acquisition (Schmeck, 1988, Mayer, 1988, Weinstein & Mayer, 1986).

The employment of multimedia as part of the teaching strategy entails the user to assess and evaluate its nature and effect on human learning. According to Mayer, there are different underlying principles in which a child learns through multimedia. It is imperative to note that children differ from each other in terms of learning abilities. So when multimedia is used considerations should be made on the child's ability and capacity to learn. Richard Mayer's research (University of California – Santa Barbara, Psychology) along with A. Paivio's Dual-Coding Theory, are helping practitioners learn when and how multimedia actually enhances learning.

It is in this premise that the researcher being a teacher for almost four years have come up with this study on the effectiveness of the multimedia learning resources in the teaching and learning of English in order to come up with a plan which will serve as a guide to improve the teacher as contributor of the learning process of a child.

The purpose of this study evaluated the effectiveness of Multimedia Utilization to the performance of the grade 4 pupils exclusively classified as experimental grouping Standardized Test in English of Linao Central School, Ormoc City. The findings were the bases for the proposed Instructional Technology Intervention Plan.

Specifically, this study sought to answer the following questions:

1. What is the performance of the grade 4 pupils exclusively classified as experimental group before the utilization of multimedia using Standardized Test for English that covers the following skills:
  - 1.1 Grammar Structure
  - 1.2 Comprehension
  - 1.3 Word Meaning; and
  - 1.4 Vocabulary?
2. What is the performance of the grade 4 pupils exclusively classified as experimental group after utilization of multimedia in the above mentioned skills?
3. Is there a significant difference in the following:
  - 3.1 Performance of the grade 4 pupils exclusively classified as experimental group before and after multimedia utilization; and
  - 3.2 Performance of the grade 4 pupils after the multimedia utilization?
4. What Instructional Technology Intervention Plan can be proposed on based on the findings/result of the study?

## NULL HYPOTHESIS

Ho: There is no significant difference in the following:

1. Performance of the grade 4 pupils exclusively classified as experimental group before and after multimedia utilization; and
2. Performance of the grade 4 pupils after multimedia utilization.

## II. Methodology

**Design.** This study made use of quasi-experimental method to evaluate the effectiveness of the utilization of multimedia resources in the teaching of English in the grade 4 pupils of Linao Central School as a basis for an Instructional Technology Intervention Plan. The researcher asked permission from the principal and School Administrators to use the District Quarter Test Paper as an instrument to measure the performance level of the pupils before and after the Instructional Technology Intervention in the lessons being prepared. The researcher sought the assistance from her co-teachers in the conduct of the said test. Prior to the experiment, the students who were chosen by way of purposive sampling technique were given a pre-test using the District Quarter Test to determine their level of academic performance before the utilization of multimedia resources. After which, the data was collected and filed for future comparison of the post test. The researcher then prepared power point presentations for each lesson under which the four skills are covered and included as well as prepared video lessons downloaded from the internet through You Tube downloader and other video lessons from ABS-CBN ETV learning guides. The video lessons were prepared before the lessons were delivered. The lesson plans on the selected topics of English were prepared beforehand in the form of Power Point Presentation for them to view and understand each lessons being delivered and discussed. After the first quarter which is from June to August, the experimental group was then given the post test to determine whether there was a change or an improvement in their academic performance with regard to the four skills in grammar structure, comprehension, word meaning and vocabulary. The pre-test and post test data were collected, tabulated, analyzed and presented in the succeeding pages.

**Sampling.** There are 45 learners who are included in the study and the primary means of reach is through Facebook account such as Messenger and also meeting them face to face as well as calling their attention through the Cell Phone numbers of the parents. The Respondents of the study were selected through purposive sampling Technique.

**Research Procedure.** The researcher prepared the research design and tools to be utilized in the study. Approval and recommendation from the principal was sought. The researcher is a full time faculty member of the said school where the study is to be conducted. She sought the assistance of one of her co-teachers in Grade 4 in conducting the research to avoid biases. Results of the pretest were analyzed and interpreted from the Mean Percentage Score (MPS). The experimental group was exposed on different video and power point lessons on the first quarter of the School Year. On the last day of the first quarter, the researcher conducted the post test on the said group and the MPS was computed. The results were analyzed and interpreted to find out

whether an increase was attained on the performance level of the experimental group from the pretest to the post test. After the analysis of the pretest and post-test, the post-test result was treated statistically using the t-test for mean difference. Tallying of results and treatment of data. Analysis and Interpretation of Data.

**Ethical Issues.** The right to conduct the study was strictly adhered through the approval of the principal, approval of the Superintendent of the Division. Orientation of the respondents both the Grade 4 and the teacher-adviser of the respondents.

**Treatment of Data.** effectiveness of the utilization of multimedia resources in the teaching of English in the grade 4 pupils of Linao Central School on the area focused was treated through a weighted mean and descriptions (refer to appendices for the scoring and description). T-Test for Mean Difference. This tool was used to calculate the significant difference between the before and after performance of the experimental group being the participant of the study on the Standardized Test for English that would touch the skills on Comprehension, Grammar Structure, Word Meaning and Vocabulary in relevance to the improvement of the students' academic performance.

### III. Results and Discussion

**Table 1**  
**Performance of the Experimental Group in Terms of Grammar Structure before multimedia utilization**

LEVEL	DESCRIPTION	EXPERIMENTAL GROUP	
		F	%
4	<i>Very Good</i> The grammar structure skills is from 89-100% efficient	0	0
3	Good The grammar structure knowledge is from 76-88%	16	40
2	<i>Fair</i> <i>The grammar structure knowledge is from 60-75%</i>	17	42.5
1	Poor The grammar structure knowledge is 60% and below	7	17.5
	<b>TOTAL</b>	<b>40</b>	<b>100</b>

Table 1 shows the performance of the experimental group in terms of grammar structure. Grammar structures are the building blocks of language. These structures can be broken down into

phrases and clauses. Grammar structure in this study is the agreement of subject and predicate in a sentence or groups of words to get its true meaning.

As can be seen in the table, level 4 which is interpreted as very good got a score of 0 which means that nobody got a skill of 80. Under scrutiny, pupils in experimental groups rated as good have a frequency of 16 which is 40 percent. In level 2, experimental group got a rating of 15 which is 42.5 percent and a poor rating with grammar structure knowledge at seven with 17.5 percent. Majority of the experimental group is in level 2 which means that most of them have a grammar structure knowledge from 60-75 percent.

These findings reveal that the pupil's skills in grammar structure needs more improvement.

**Table 2**  
**Performance of the Experimental Group in Terms of Comprehension before multimedia utilization**

LEVEL	DESCRIPTION	EXPERIMENTAL GROUP	
		F	%
4	<i>Very Good</i> The comprehension skills is from 89-100% efficient	0	0
3	Good The comprehension knowledge is from 76-88%	15	37.5
2	<i>Fair</i> <i>The comprehension knowledge is from 60-75%</i>	17	42.5
1	Poor The comprehension knowledge is 60% and below	8	20
	<b>TOTAL</b>	<b>40</b>	<b>100</b>

The level of comprehension shows the depth of understanding of a pupil on a given selection. Based on the table, a total of 15 are good in comprehension for experimental group at 37.5 percent. Seventeen are doing fair for experimental group with 42.5 percent. A poor comprehension was shown at 20 percent with eight pupils meaning they got 60 percent and below rating.

**Table 3**  
**Performance of the Experimental Group in Terms of Word Meaning**

LEVEL	DESCRIPTION	EXPERIMENTAL GROUP	
		F	%
4	<i>Very Good</i> The word meaning skills are from 89-100% efficient	0	0
3	Good The word meaning knowledge is from 76-88%	15	37.5
2	<i>Fair</i> The word meaning knowledge is from 60-75%	15	37.5
1	Poor The word meaning knowledge is 60% and below	10	25
	<b>TOTAL</b>	<b>40</b>	<b>100</b>

Based on the table, level 4 obtained no score for the group. In level 3, the experimental group got 15 at 37.5 percent which is the same for level 2 in which both levels have the same majority of pupils which is 15. The level of knowledge for experimental group was recorded at 10 with 25 percent which shows that there are pupils 60 percent and below who have a poor knowledge in word meaning.

**Table 4**  
**Performance of the Experimental Group in Terms of Vocabulary**

LEVEL	DESCRIPTION	EXPERIMENTAL GROUP	
		F	%
4	<i>Very Good</i> The vocabulary skill is from 89-100% efficient	0	0
3	Good The vocabulary knowledge is from 76-88%	15	37.5
2	<i>Fair</i> The vocabulary knowledge is from 60-75%	13	32.5
1	Poor The vocabulary knowledge is 60% and below	12	30
	<b>TOTAL</b>	<b>40</b>	<b>100</b>

Vocabulary is the set of words within a language that are familiar to a pupil. A vocabulary usually develops with age, and serves as a useful and fundamental tool for communication and

acquiring knowledge. Acquiring an extensive vocabulary is one of the largest challenges in learning a second language.

Based on the table, the experimental group got a score of 0 in level 4. Level 3 with a description of good with a vocabulary knowledge of 76-88 got 15 at 37.5 percent. In level 2, the experimental group got 13 with 32.5 percent and 12 got a rating of poor at 30 percent.

**Table 5**  
**Performance of Pupils classified as the Experimental Group in Terms of Grammar Structure (Post)**

LEVEL	DESCRIPTION	EXPERIMENTAL GROUP			
		Pre-Test		Post-Test	
		F	%	F	%
<b>4</b>	<i>Very Good</i> The grammar structure skills is from 89-100% efficient	0	0	6	15
<b>3</b>	<i>Good</i> The grammar structure knowledge is from 76-88%	16	40	16	40
<b>2</b>	<i>Fair</i> The grammar structure knowledge is from 60-75%	17	42.5	11	27.5
<b>1</b>	<i>Poor</i> The grammar structure knowledge is 60% and below	7	17.5	7	17.5
	<b>TOTAL</b>	<b>40</b>	<b>100</b>	<b>40</b>	<b>100</b>

Based on the table, the group recorded a change from its previous performance of zero to six with 15 percent after utilization of multimedia. The change was due to an increase in level 4 with six pupils added from level 2 from previous performance. Level 2 and 1 in experimental group have the same frequency in previous performance. The majority of the pupils are rated good and six have improved to very good. This goes to show that utilization of multimedia has a positive implication on the grammar structure of the pupils.



**Table 6**  
**Performance of Pupils classified as Experimental Group in Terms of Comprehension (post)**

LEVEL	DESCRIPTION	EXPERIMENTAL GROUP			
		Pre-Test		Post-Test	
		F	%	F	%
<b>4</b>	<i>Very Good</i> The comprehension skills is from 89-100% efficient	0	0	7	17.5
<b>3</b>	<i>Good</i> The comprehension knowledge is from 76-88%	15	37.5	15	37.5
<b>2</b>	<i>Fair</i> <i>The comprehension knowledge is from 60-75%</i>	17	42.5	10	25
<b>1</b>	<i>Poor</i> The comprehension knowledge is 60% and below	8	20	8	20
	<b>TOTAL</b>	<b>40</b>	<b>100</b>	<b>100</b>	<b>100</b>

Based on the table, experimental group got a frequency of seven at 17.5 percent for level 4 which is marked very good compared to previous performance with 0 frequencies. Level 3 garnered the same with fifteen at 37.5 percent and level 1 with eight at 20 percent. Majority of the pupils scored good with frequency at 15 with 37.5 percent with the experimental group compared to previous performance with majority doing fair from 60-75 percent. This implies that even after multimedia was utilized eight pupils in the experimental group still got poor comprehension knowledge.

**Table 7**  
**Performance of Pupils classified as Experimental Group in Terms of Word Meaning (post)**

LEVEL	DESCRIPTION	EXPERIMENTAL GROUP			
		Pre-test		Post Test	
		F	%	F	%
<b>4</b>	<i>Very Good</i> The word meaning skills are from 89-100% efficient	0	0	10	25
<b>3</b>	<i>Good</i> The word meaning knowledge is from 76-88%	15	37.5	10	25
<b>2</b>	<i>Fair</i> <i>The word meaning knowledge is from 60-75%</i>	15	37.5	20	50
<b>1</b>	<i>Poor</i> The word meaning knowledge is 60% and below	10	25	0	0
	<b>TOTAL</b>	<b>40</b>	<b>100</b>	<b>40</b>	<b>100</b>

Based on the table, the experimental group showed an increase in level 4 with 25 percent with 10 pupils doing very good in word meaning skills as compared to previous performance. As to level 3, a decrease of five was noted with 25 percent compared to previous performance with 15 pupils at 37.5 percent. Twenty pupils scored fair at 50% higher by 12.5 percent than performance in the pretest. Majority of the pupils fall under level 2 which is rated fair. Since no pupil is rated poor there is a significant difference when multimedia was utilized.

**Table 8**  
**Performance of Pupils classified as Experimental Group in Terms of Word Vocabulary (post)**

LEVEL	DESCRIPTION	EXPERIMENTAL GROUP			
		Pre-Test		Post-Test	
		F	%	F	%
<b>4</b>	<i>Very Good</i> The vocabulary skill is from 89-100% efficient	0	0	12	30
<b>3</b>	<i>Good</i> The vocabulary knowledge is from 76-88%	15	37.5	15	37.5
<b>2</b>	<i>Fair</i> The vocabulary knowledge is from 60-75%	13	32.5	13	32.5
<b>1</b>	<i>Poor</i> The vocabulary knowledge is 60% and below	12	30	0	0
	<b>TOTAL</b>	<b>40</b>	<b>100</b>	<b>40</b>	<b>100</b>

As reflected on the table, majority of the experimental group are doing good at Level 3 with 15 at 37.5 percent compared to previous performance. Level 2 placed second with 13 at 32.5 percent which is the same with previous performance. Twelve are doing very good with 89-100 percent efficiency with twelve pupils or 30 percent. Thirteen are recorded as having 60-75 percent in their vocabulary knowledge which was the same as previous' performance. This implies that multimedia utilization and support gave a moderate impact on the vocabulary knowledge of the pupils.

**Table 9**  
**Test of Difference in the Before and After Performance of Pupils classified as the Experimental Group**

INDICATORS	T-RATIO		DECISION	INTERPRETATION
	COMPUTED VALUE	CRITICAL VALUE @.05		
GRAMMAR	4.43	5.23	ACCEPT HO	NOT SIGNIFICANT
COMREHENSION	4.50	5.23	ACCEPT HO	NOT SIGNIFICANT
WORD MEANING	6.88	5.23	REJECT HO	SIGNIFICANT
VOCABULARY	6.05	5.23	REJECT HO	SIGNIFICANT

To examine the difference between the performance of the Grade 4 pupils before and after utilization of multimedia classified as experimental group, the T-test for mean difference was used. The results are reflected in Table 9.1. The computed t-ratio for grammar is 4.43 and comprehension is 4.50 at critical level of .05. This means that the difference before and after performance of pupils classified as experimental group is not significant thus the decision would be to accept null hypothesis. On the other hand, the computed t-ratio for word meaning is 6.88 and vocabulary 6.05 with critical value at .05. The difference is significant thus decision is to reject null hypothesis. This goes to show that word meaning and vocabulary reveal a difference in the performance of the pupils before and after multimedia utilization in the experimental group. Multimedia learning and dual-coding theory are helping academic practitioners, teachers and students to learn when and how multimedia actually enhances learning, as well as helped determine when visual media's effects are negligible or even counterproductive.

**Table 10**  
**Test of Difference in the Performance of the Grade 4 Pupils After Multimedia Utilization in the Experimental Group**

INDICATORS	T-RATIO		DECISION	INTERPRETATION
	COMPUTED VALUE	CRITICAL VALUE @.05		
GRAMMAR	3.65	4.48	ACCEPT HO	NOT SIGNIFICANT
COMREHENSION	4.09	4.48	ACCEPT HO	NOT SIGNIFICANT
WORD MEANING	6.54	4.48	REJECT HO	SIGNIFICANT
VOCABULARY	5.97	4.48	REJECT HO	SIGNIFICANT

To examine the difference in the performance of the grade 4 pupils after multimedia utilization using the same statistical treatment. The t-ratio for grammar has a computed value of 3.65 and comprehension at 4.09 at .05 critical values. This implies that the difference is not significant thus null hypothesis should be accepted. Word meaning and vocabulary have a computed value of 6.54 and 5.97 which are interpreted as significant thus reject the null hypothesis. This means that the difference between the variables is a moderate positive difference. This implies that experimental group showed improvement in both vocabulary and word meaning after multimedia learning resources were utilized. Multimedia support for grammar structure and comprehension may not be as supportive to the teaching of English but could be best understood using chalk and board method due to its rulings.

The findings on the difference in the performance of the experimental group after utilization of multimedia goes to show that well-structured multimedia presentations should be created for they are most likely to help.

#### IV. Conclusion

Based on the findings of the study, this research concluded that utilization of multimedia learning resources in the teaching of English in the grade 4 students of Linao Central School have no significant difference in terms of grammar structure and comprehension yet proved to have significant difference in vocabulary and word meaning. Factors that can be cited perhaps are the lack of training in teacher's creativity in dealing with grammar lessons through the use of multimedia resources. However, the same resources are effective if they are to be utilized especially in teaching vocabulary and word meaning.

### **V. Recommendations**

1. The proposed instructional technology intervention plan should be implemented and utilized.
2. School Heads should tap more NGOs and GOs for possible funding and donation for additional computers and other multimedia gadgets to further enhance learning of students.
3. School Heads should incorporate it in their Annual Improvement Plan intensive training of teachers in operating multimedia resources and making well-structured multimedia presentations.
4. School teachers should continuously search for more multimedia learning resources and more motivating presentations to effectively improve student performance.

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