

# Multimedia Presentation: A Tool in Refining the Reading Comprehension of the 21<sup>st</sup> Century Learners

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## Abstract

The goal of this research was to create multimedia presentations for 21st-century learners. It also attempted to evaluate the level of reading comprehension in the controlled and experimental groups, as well as whether there is a significant difference between the two.

This study included 80 ACTS Computer College Grade 11 Senior High students. In order to analyze the efficiency of multimedia presentations in increasing 21st-century learners' reading comprehension, the experimental technique was used as the research methodology. A variety of test questionnaires were used in this investigation.

Data analysis revealed that although the controlled group of ABM learners only achieved a Satisfactory performance, the experimental group of students achieved a Very Satisfactory performance. Both the experimental and the control groups of HUMSS students completed the course with a Very Satisfactory rating. ICT students in the experimental group achieved a Very Satisfactory performance, while those in the control group attained a Satisfactory performance. STEM students in the experimental group achieved an Outstanding performance, while those in the control group got Very Satisfactory. The rejection of the null hypothesis indicates that there were significant differences in reading comprehension between the experimental and controlled groups.

Based on the gathered data, it was concluded that the students in experimental groups who used multimedia presentations had a greater level of comprehension than those students in the controlled groups who utilized printed stories. The multimedia presentations integrated in teaching are a useful tool in increasing the students' reading comprehension which signifies the result of their achievement test. Between the controlled and experimental groups of students, there is a significant difference in reading comprehension.

It is recommended, therefore that teachers use multimedia presentations to teach the 21<sup>st</sup>-century learners. For greater comprehension, these materials should include not just text and photographs, but also other interesting content such as animations and dub voice. Vocabulary words must also be supplied to unlock the learners' difficulties, which is believed to be more effective. Similarly, teachers can employ multimedia presentations as part of curricular education because they are more successful than printed materials in terms of reading comprehension. It is also suggested that future researchers should conduct further research with a bigger population and investigate additional suggestions for improving the multimedia presentation.

Keywords: reading comprehension; multimedia presentation; 21<sup>st</sup> century learners

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## 1. Introduction

When reading diverse materials, many students nowadays are unable to relate to and comprehend what the story is about. It is the result of students' lack of exposure to real-life situations. They require fill-in-the-blanks answers. It's possible that students haven't had firsthand contact with all of the situations depicted in the reading materials. If readers only have a rudimentary comprehension of that, they will struggle to understand. This reading comprehension problem could be caused by too much exposure to current technologies.

Students' comprehension improves as they read more (Malloy & Gambrell, 2012). However, it has been noted that most students are uninterested in reading literature, resulting in low reading comprehension not only in English classes but also in other disciplines. According to a data point from the National Center for Education Statistics, one out of every five persons in the United States has low English literacy abilities, which means they have trouble comprehending, assessing, using, or engaging with written texts. In contrast, according to the United Nations Cultural, Educational, Scientific and Cultural Organization (UNESCO). Institute for Statistics 2016 study, 758 million people are still unable to perform basic reading and writing, which are essential learning abilities. With awe, the Philippines has a near-perfect literacy rate of 93.6 percent out of nearly a million people (IndexMundi, 2017). However, results from the 2009 National Achievement Test for Filipino students found that public school students' reading skills fell short of mastery (Philippine Star, 2012). This conclusion was reinforced by a study of high school pupils' reading comprehension and science skills, which revealed the same low level of competence (Imam, Matsura, Jamil & Ismail, 2014). The preceding findings reveal a discrepancy between Filipinos' high literacy rate and the foundational skills of reading and writing.

According to the most recent data, the Philippines scored the lowest in reading comprehension among the 79 nations participating in the 2019 Programme for International Student Assessment (PISA), according to a secondary school teacher in Zamboanga City.

The paper offered multimedia presentation as a tool utilized which helped students improved their reading comprehension. In this paper, the author used new ideas and techniques that helped students increase their understanding abilities. Traditional ways of teaching reading have become outmoded due to rapid changes in the world of education. New reading comprehension teaching strategies have been introduced. This paper focused on concentration tactics that should be used in classrooms to help pupils enhance their reading comprehension.

As a substitute for reading the book, learners viewed multimedia presentations that includes not only text and visuals, but also dub audio and animation. It is intended that after tools have been utilized, the students were able to read the text with greater comprehension.

## 2. Background of the Study

In the field of literacy education, there is a prevalent belief that "reading is thinking" (Cunningham & Allington, 2013; Fountas & Pinnell, 2014). The ability to read is a crucial one. It's a stepping stone on the path to wisdom.

Reading comprehension is a skill that is essential for everyone's educational achievement. Reading

comprehension is an important skill that is required in all areas of school. Science, social studies, and math are examples of subjects where comprehension skills are vital in addition to reading and literature. Many students lack prior knowledge and reading methods to develop inferences in science, according to study, and consequently struggle to comprehend texts. Students also lack the precise reading methods needed to develop inferences that aid in text comprehension (Best, Rowe, Ozura, and McNamara, 2012).

Reading comprehension issues were observed inside the classroom. In Africa, the United States of America, and Asia, a number of research on the causes of students' poor reading abilities have been conducted (Njie, 2013; Rany, 2013; the National Reading Panel, 2012). The countries that are included in this Gambia, California, and Malaysia are among the countries studied. Low phonics education in class, pupils' laziness, lack of drive to learn to read, and movements away from phonics instruction are some of the primary contributing factors to pupils' poor reading ability.

Similarly, Davoudi and Yousefi (2015) identified a range of reading challenges and problems among EFL learners, including impairments in vocabulary and background knowledge, grammatical problems, and poor reading methods, all of which are crucial in reducing the difficulties (Samad, Jannah & Fitriani 2017). The use of multimedia in the classroom has a number of advantages. Teachers can deal with the reading course more interestingly and the students are more active in contrast to the typical teaching climate if they make good use of the advantages of multimedia technology and Internet resources and put out courseware. According to Mo Jinguo's survey (2012), students would receive a higher grade in multimedia classes, with an average of 81.15, compared to 79.78 in non-multimedia classes.

Responding to the related situation, the researcher decided to perform this current study aimed at helping students improve their reading comprehension. The researcher will use reading tools to help solve this difficulty in this study. It will help both the teacher and the learners teach and read various resources. This research will focus on utilization of multimedia presentations that will improve reading comprehension of the learners. Teachers must come up with an engaging and interactive multimedia presentation that will aid the poor reading comprehension skills of the 21<sup>st</sup> century learners. Likewise, the said multimedia presentation should, in addition to being an engaging tool, meet the needs of pupils in terms of reading comprehension.

### **3. Theoretical Framework**

A variety of underlying theories will be incorporated for this study to become more valuable and significant. The following are the theories related to the study that the researcher will depend on for this study to attain the desired goal.

#### **Multimedia Learning Theory**

Educational psychologists and educators have and will continue to focus on information acquisition. Sweller Mayer (2001) developed the Multimedia Learning Theory (MMLT), as cited by Lavastida (2020), which consists of seven multimedia training ideas, based on his research. Mayer's Multimedia Learning Theory is based on the following principles: (1) multimedia principle: students learn better from words and pictures than from words alone (2) spatial contiguity principle: students learn better when corresponding words and pictures are presented close together on the page or screen rather than far apart (3) temporal continuity principle: students learn better when corresponding words and pictures are presented simultaneously rather than sequentially (4) coherence principle: students learn better when extraneous words, pictures, and sounds are excluded; (5) modality

principle: students learn better from animation and narration than from animation and on-screen text (6) redundancy principle: students learn better from animation and narration than from animation, narration, and on-screen text; (7) individual differences principle: design effects are more reliable for low-learners than for high-learners and for high spatial learners than for low spatial learners (Reed, 2013, p. 91-92).

The learner engages in three key cognitive processes when engaging in multimedia learning. The first cognitive step, selection, is used to create a text base from receiving verbal data and an image base from arriving visual data. The second cognitive process, organizing, is used to produce a verbally-based model of the system to be presented and a visually-based model of the system to be explained. Finally, when the learner connects similar events (or states or parts) in the verbally-based model with the visually-based model, the third process, integrating, takes place. Mayer (1997), as cited by Lavastida (2020), goes into greater detail about the approach, which has resulted in a series of tests that have yielded five fundamental principles for using multimedia to assist students understand scientific explanations.

The current study is anchored on the above-mentioned theory since the principles were incorporated in the multimedia presentation, which were important in achieving the study's purpose. Each concept is important in the creation of the materials' designs and content. The theory provided clear instructions on how to apply each training notion and principle. The researcher created well-equipped materials that helped students' comprehension of the text.

### **Schema Theory**

According to the Schema theory, a book only gives listeners or readers instructions on how to recover or construct meaning from their own acquired information. The reader's background knowledge refers to this previously learned knowledge. Schema Theory refers to the previously acquired knowledge structures.

Schema Theory provides an explanation of how knowledge is acquired, processed, and recalled. It is an essential element of cognitive research. Cognitive scientists use the technical term schema to explain how people process, organize, and store information in their heads. Schemas, also known as schemata, are cognitive constructs that help us arrange information in long-term memory (Widdowson, 2013). They "reflect the experiences, conceptual understanding, attitudes, values, skills, and strategies...[we] bring to a text context," as they "mirror the experiences, conceptual understanding, attitudes, values, skills, and strategies...[we] bring to a text scenario" (Vacca & Vacca, 2019: 15). Because schemas contain extensive networks of information that humans employ to make sense of novel stimuli, events, and situations, they have been dubbed "the building blocks of cognition" (Rumelhart, 2012).

The concept that "any act of understanding requires one's knowledge of the world" underpins schema theory (Anderson et al. 1977, cited in Carrell & Eisterhold, 2013: 73). Smith (2014: 8) goes on to say that all we know and believe is organized in a theory of what the world is like, a theory that is the foundation of all our perceptions and understanding of the world, the source of hopes and fears, motives and expectancies, reasoning and creativity. And this is the only theory we have. If we want to make sense of the world, we must interpret our interactions with it in light of our theory. Theory is our defense against perplexity.

According to the Schema theory, understanding a text is a collaborative effort between the reader's prior knowledge and the text. The ability to relate the textual material to one's own knowledge is required for text comprehension. Understanding words, phrases, and entire texts needs more than just language understanding.

"Every act of comprehension incorporates one's knowledge of the world as well," Anderson (2017) writes. Obviously, the greater one's understanding of the world, the better he understands the text.

According to the schema theory, meaning is not fully supplied in a text that waits to be decoded by the reader. Through the interaction between text and the reader's prior knowledge, meaning is reconstructed or formed during the reading process. As a result, the teacher should educate the pupils how to connect their existing knowledge to the text. Students will gain a better understanding of the text's overall meaning by doing so.

### **Dual Coding Theory**

Allan Paivio's dual coding theory (DCT) tries to prove the necessity of two types of mental processing: verbal and non-verbal (Clark & Paivio, 1991 as cited by Price, Bonner & Grossman 2015). The idea explains how the human brain processes information by combining verbal and nonverbal representations like images and voice. The researcher looked at two issues: learning and cognitive processing, in order to optimize the possibility of successful learning and improve our brain's ability to process information. The dual coding theory stressed the relevance of visual signals in learning, claiming that humans can successfully understand information by integrating verbal and visual cues (Paivio, 2016; Sadoski & Paivio, 2013).

The dual coding theory and multimedia learning are closely related in that both emphasize the value of the human brain's dual coding function as a help to the cognitive process in reading comprehension. According to Wang, & Li (2019), pupils with imagery deficits were able to recall and retain words or information better with the use of new multimedia application. They discovered that imagery-deficit kids had difficulty reading comprehension due to their slow and dull imagination, which resulted in a failure to form a mental image. The students' behavior was caused by the failure to link the text and image since they couldn't understand or recall the information.

The researcher then devised a multimedia program that allows students to connect words and pictures to their reading comprehension ability. The relationship between multimedia and dual coding theory was demonstrated in this study by Richard E Mayer and Moreno (2018), who discovered that split-attention in multimedia correlates with the theory of dual-coding theory, and that a group of students who received treatment with two stimuli performed better than a group of students who received only one stimulus. In a nutshell, the combination of words and images catalyzed to increase reader comprehension by guaranteeing that the reader can form a mental image and link it to the text.

The latter concept is particularly pertinent to the current study since the researcher wishes to use visual clues, as well as verbal and nonverbal representation, in her multimedia presentation. As a result, it will assist learners in improving their cognition process and ability to process information, which is thought to boost text comprehension.

### **4. Objectives of the Study**

This study aimed to develop a multimedia presentation as a useful tool in refining the reading comprehension of the selected Senior High School students.

Specifically, this study aimed to achieve the following:

1. Identify the controlled and experimental groups' level of reading comprehension;
2. Develop the multimedia presentation that will be used as a tool in refining the reading comprehension of the learners;
3. Determine if there is a significant difference in the reading comprehension between the experimental and controlled groups.

## **5. Research Methodology**

### **5.1 Research Design**

The experimental technique was utilized as the research design in order to assess the effectiveness of multimedia presentations in improving 21st-century learners' reading comprehension skills. In addition, because the researcher obtained information using numerical data, this study took a quantitative method.

The experimental technique follows a scientific research strategy to a tee. It consists of a hypothesis, a researcher-controllable variable, and variables that may be measured, calculated, and compared. Most crucially, it is carried out in a controlled setting (Darland, 2018). Its goal was to see if there were any cause-and-effect linkages between variables.

### **5.2 Population and Sampling Techniques**

Eighty (80) Advanced Computer Training School (ACTS) Computer College Senior High School (SHS) students participated in the study. Twenty (20) Grade 11 students from the Accountancy, Business and Management (ABM) strand, eighteen (18) Grade 11 students from the Information and Communication Technology (ICT) strand, twenty-two (22) Grade 11 students from Humanities and Social Sciences (HUMSS) strand, and twenty (20) Grade 11 students from Science, Technology, Engineering and Mathematics (STEM) strand were among those that participated.

The respondents were purposefully chosen by the researcher. Purposive sampling, according to Tongco (2017), is a sort of non-probability sampling that is best effective when studying a specific cultural domain with experts within it. The method's intrinsic bias helps to its efficiency, and it remains robust even when subjected to random probability sampling. The reliability and competency of the informant must be ensured when selecting the purposive sample; consequently, the reliability and competence of the informant must be ensured. This entails locating and selecting individuals or groups of individuals who are particularly educated or experienced about a topic of interest (Creswell & Plano Clark, 2012).

### **5.3 Research Procedure**

The following methods were observed to obtain the data required for this study. Initially, the researcher struggled to come up with a good topic and the main problem she intended to address in her research. One of the most difficult components of conducting research was identifying and creating a research problem. The research was aided by the problem formulation. She considered a current event or an issue relevant to her career because it would serve as the foundation for her research.

Time and experience were required to create a multimedia presentation. In inventing and finalizing her substance, the researcher made the most of her abilities. She also enlisted the support of her friends, who work in the field of information technology, to guarantee that the material is both useful and interactive.

The researcher followed ethical research protocols before using the multimedia presentation as instructional material. She began by preparing the request letters, as well as the achievement test. She requested permission from the principal to conduct a research study in the institution where she works, based on an official go signal from the thesis adviser, a letter addressed to the school principal of ACTS Computer College, and upon notation by the Dean of Laguna State Polytechnic University Graduate School in Santa Cruz with utmost courtesy.

The researcher then began gathering data as soon as authorization was granted. Two sets of structured tests were created with the same content. These functioned as the researcher's achievement test. The findings of the test were recorded by the researcher. The information gathered was processed and evaluated using statistical tool.

#### **5.4 Research Instruments**

The following were the instruments used and the processes employed by the researcher in producing such instruments for the study:

##### **Achievement Test**

The test is consisting of eight different stories with seven questions each. The questionnaire includes a variety of questions that are literal and inferential aimed at improving learners' comprehension skills. Before using her produced multimedia presentation, the researcher employed this instrument to collect data from the eighty (80) selected Senior High School (SHS) students of ACTS Computer College. While the achievement test was validated by English teachers, the multimedia presentations were reviewed by IT experts to ensure that features were accurate.

##### **Multimedia Presentation**

Recent advancement in multimedia presentations is changing the entire way of communication (Thyagarajan K K, 2012). The generated multimedia presentation will be a novel mode of communication that will aid in the interpretation of the text by the learners. The material was developed following the process discussed below.

##### **Preparation of the Multimedia Presentation**

A multimedia presentation is a message that incorporates different types of media. "A multimedia instructional message is a presentation made up of words and images that is intended to promote meaningful learning," according to (Nadeem 2012). The developed material is a tool that is used to help pupils study in a more complete way.

After gathering information on the methodologies and principles used to create the material, the multimedia presentation was created. In textbooks and on the internet, the researcher looked for activities. She based the content of the material on references from senior high school. The multimedia presentation's topics were based on the Department of Education's standardized curriculum guide for the senior high school program. The information acquired was organized, and the material's drafts and layout were created.

##### **Development of the Multimedia Presentation**

Activities that are appropriate in refining the learners' comprehension abilities were incorporated based on the ordered data and layout. Mayer's Multimedia Learning Theory (MMLT) (2001) as cited by Lavastida

(2020), was used to support the whole arrangement and appearance of the multimedia presentation. It is made up of seven multimedia teaching principles.

These principles include the following: (1) multimedia principle: students learn better from words and pictures than words alone (2) spatial contiguity principle: students learn better when corresponding words and pictures are presented near, rather than far from each other on the page or screen (3) temporal continuity principle: students learn better when corresponding words and pictures are presented simultaneously rather than successively; (4) coherence principle: students learn better when extraneous words, pictures, and sounds are excluded; (5) modality principle: students learn better from animation and narration than from animation and on-screen text (6) redundancy principle: students learn better from animation and narration than from animation, narration, and on-screen text; (7) individual differences principle: design effects are stronger for low-learners than for high-learners and for high spatial learners than for low spatial learners (Reed, 2013, p. 91-92).

The generated content aids in the refinement of the learners' reading comprehension by including audio and sound effects in the presentation. The presentations also incorporate animated texts and visuals. This type of material encourages students to participate more actively in both the activities and the teachings. As the researcher teaches millennial learners, the animations and transitions employed in the content stimulate curiosity and excitement.

## 6. Results and Discussion

**Table 1. ABM Students' Level of Reading Comprehension**

	<i>Controlled</i>			<i>Experimental</i>		
	<i>Frequency</i>	<i>Percentage</i>	<i>Verbal Interpretation</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Verbal Interpretation</i>
45-56	1	11.11%	Outstanding	4	36.36%	Outstanding
34-44	2	22.22%	Very Satisfactory	7	63.64%	Very Satisfactory
23-33	5	55.56%	Satisfactory	0	0.00%	Satisfactory
12-22	1	11.11%	Fair	0	0.00%	Fair
0-11	0	0.00%	Needs Improvement	0	0.00%	Needs Improvement
<b>Total</b>	<b>9</b>	<b>100.00%</b>		<b>11</b>	<b>100.00%</b>	
<b>Mean</b>		<b>31.44</b>			<b>43.82</b>	
<b>SD</b>		<b>9.91</b>			<b>3.34</b>	
<b>Verbal Interpretation</b>		<b>Satisfactory</b>			<b>Very Satisfactory</b>	

**Legend:**

- 44.81 – 56.00 Outstanding
- 33.61 – 44.80 Very Satisfactory
- 22.41 – 33.60 Satisfactory
- 11.21 – 22.40 Fair
- 0.00 – 11.20 Needs Improvement

Apart from printed stories, multimedia presentation is also one of the learning materials used for the students to attain the desired competencies for a specific learning area. To test the effectiveness of these multimedia presentation the data above show the two group of respondents. The experimental group used the multimedia presentation as a tool in refining the reading comprehension while the controlled groups utilized instructional materials in assessing the level of reading comprehension.

The data above reveals the ABM students' level of reading comprehension in terms of achievement test. The students in controlled group attain the satisfactory performance in the achievement test ( $M= 31.44$ ,  $Sd= 9.91$ ) while students in experimental group attain very satisfactory performance ( $M= 43.82$ ,  $Sd= 3.34$ ). One out of 9 students (11.11%) in the controlled and 4 out of 11 (36.36%) in the experimental group attain the outstanding performance in the achievement test that range to 45-66. Two out of 9 students (22.22%) in the controlled group attain very satisfactory performance and 7 out of 11 (63.64%) in the experimental group that range to 34-44. The ABM students who used the multimedia presentation performed better in the test.

In any educational setting, multimedia presentations offer the ideal arena for fusing compelling oratory, visuals, and text. These really assist the pupils in better comprehending the stories. These facilitate the understanding of ideas and concepts more quickly than can be expected from straightforward oratory explanations. The instruction can be tailored by the professors to the students who actually need assistance.

The result above is supported by the claim of Samat and Aziz (2020) that multimedia helps the students in reading comprehension. They also noted that multimedia's fascinating qualities enhance the comprehension process. The learners learn to build mental images and interpret textual information using a variety of methods, preparing them to be independent learners in the future.

Nurhana (2014) explained that learners can improve their reading skills by using interactive learning media. Similarly, using interactive learning media while reading can help students learn more effectively.

**Table 2. HUMSS Students' Level of Reading Comprehension**

	<i>Controlled</i>			<i>Experimental</i>		
	<i>Frequency</i>	<i>Percentage</i>	<i>Verbal Interpretation</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Verbal Interpretation</i>
45-56	1	8.33%	Outstanding	3	30.00%	Outstanding
34-44	7	58.33%	Very Satisfactory	6	60.00%	Very Satisfactory
23-33	2	16.67%	Satisfactory	1	10.00%	Satisfactory
12-22	2	16.67%	Fair	0	0.00%	Fair
0-11	0	0.00%	Needs Improvement	0	0.00%	Needs Improvement
Total	12	100.00%		10	100.00%	
Mean		34.58			41.20	
SD		9.17			6.36	
Verbal Interpretation		Very Satisfactory			Very Satisfactory	

**Legend:**

44.81 – 56.00	Outstanding
33.61 – 44.80	Very Satisfactory
22.41 – 33.60	Satisfactory
11.21 – 22.40	Fair
0.00 – 11.20	Needs Improvement

The data above reveals the HUMSS students' level of reading comprehension in terms of achievement test. The students in controlled group attain very satisfactory performance in the achievement test ( $M= 34.58$ ,  $Sd= 9.17$ ), the same with the students in experimental group which also attain Very satisfactory performance ( $M= 41.20$ ,  $Sd= 6.36$ ). One out of 10 students (8.33%) in the controlled group and 3 out of 10 (30%) in the experimental group attain the outstanding performance in the achievement test that range to 45-66. Seven out of 12 students (58.33%) in the controlled group and 6 out of 12 (60%) in the experimental group attain the very

satisfactory performance that range to 34-44. Both groups of HUMSS learners have the same verbal interpretation of very satisfactory but have different computed mean. The experimental group got the higher computed mean of 41.20 while the controlled group got only 34.58. The performance of the HUMSS students who used multimedia presentation are better to those who used the instructional materials.

The essential core of the learners' experiences with improbable happenings in our lives was their traditional methods of understanding stories. As a result, the learners were able to comprehend the content they are reading more fully thanks to multimedia displays. One of the most effective methods for teaching reading comprehension is the use of multimedia presentations.

Han (2020) focused on the benefits of multimedia-assisted English reading instruction, in comparison to traditional English reading instruction. Thus, he claimed that incorporating multimedia and the Internet into reading education gives tools and rich environments for foreign language learners.

On the other hand, Wang and Lee (2021) acknowledged that different types of multimedia glossing presentations have distinct effects on students' vocabulary acquisition and reading comprehension. In addition, they offer educational implications for learning in the COVID-19 era.

**Table 3. ICT Students' Level of Reading Comprehension**

	<i>Controlled</i>			<i>Experimental</i>		
	<i>Frequency</i>	<i>Percentage</i>	<i>Verbal Interpretation</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Verbal Interpretation</i>
45-56	4	36.36%	Outstanding	2	22.22%	Outstanding
34-44	2	18.18%	Very Satisfactory	7	77.78%	Very Satisfactory
23-33	2	18.18%	Satisfactory	0	0.00%	Satisfactory
12-22	2	18.18%	Fair	0	0.00%	Fair
0-11	1	9.09%	Needs Improvement	0	0.00%	Needs Improvement
Total	11	100.00%		9	100.00%	
Mean		32.73			42.67	
SD		14.85			4.53	
Verbal Interpretation		Satisfactory			Very Satisfactory	

**Legend:**

44.81 – 56.00	Outstanding
33.61 – 44.80	Very Satisfactory
22.41 – 33.60	Satisfactory
11.21 – 22.40	Fair
0.00 – 11.20	Needs Improvement

The data above reveals the ICT students' level of reading comprehension in terms of achievement test. The students in controlled group attain satisfactory performance in the achievement test (M= 32.73, Sd= 14.85) while students in experimental group attain very satisfactory performance (M= 42.67, Sd= 4.53). Four out of 11 students (36.36%) in the controlled group and 2 out of 9 (22.22%) in the experimental group attain outstanding performance in the achievement test that range to 45-66. Two out of 11 students (18.18%) in the controlled group and 7 out of 9 (77.78%) in the experimental group attain very satisfactory performance that range to 34-44. The performance of the ICT students who used the multimedia presentation performed better in the test.

The multimedia presentation is appropriate for today's information- or digital-age learners. Stories can be simply taught and understood via multimedia presentations in a world where numerous technologies are all

around us. As a result, it is now more feasible to improve students' ability to understand literature.

The authors Ilhan and Oruc (2016) tried to demonstrate the impact of multimedia technology on students' academic achievement. They came to the conclusion that multimedia techniques improved students' academic progress in social studies lessons as compared to traditional classrooms. The mentioned conclusion supported the above result.

**Table 4. STEM Students' Level of Reading Comprehension**

	<i>Controlled</i>			<i>Experimental</i>		
	<i>Frequency</i>	<i>Percentage</i>	<i>Verbal Interpretation</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Verbal Interpretation</i>
45-56	5	62.50%	Outstanding	7	70.00%	Outstanding
34-44	2	25.00%	Very Satisfactory	3	30.00%	Very Satisfactory
23-33	0	0.00%	Satisfactory	0	0.00%	Satisfactory
12-22	1	12.50%	Fair	0	0.00%	Fair
0-11	0	0.00%	Needs Improvement	0	0.00%	Needs Improvement
Total	8	100.00%		10	100.00%	
Mean		<b>42.00</b>			<b>46.40</b>	
SD		<b>8.50</b>			<b>4.77</b>	
Verbal Interpretation		<b>Very Satisfactory</b>			<b>Outstanding</b>	

**Legend:**

44.81 – 56.00	Outstanding
33.61 – 44.80	Very Satisfactory
22.41 – 33.60	Satisfactory
11.21 – 22.40	Fair
0.00 – 11.20	Needs Improvement

The results indicate the STEM students' level of reading comprehension in terms of achievement test. The students in controlled group attain very satisfactory performance in the achievement test (M= 42.00, Sd= 8.50) while students in experimental group attain outstanding performance (M= 46.40, Sd= 4.77). Five out of 8 students (62.50%) in the controlled group and 7 out of 10 (70%) in the experimental group attain outstanding performance in the achievement test that range to 45-66. Two out of 8 students (25%) in the controlled group attain very satisfactory performance and 3 out of 10 (30%) in the experimental group that range to 34-44. The performance of the STEM students who used the multimedia presentation performed better in the test.

Because it encourages students to learn and aids in their comprehension of the information offered, multimedia is a creative and effective teaching and learning tool. It aids in the efficient presentation of knowledge by teachers.

A wide range of adaptable assistance are available in multimedia reading environments and materials. These resources can be very helpful for students as they read in-depth texts in a variety of topic areas and come across academic jargon that they are unfamiliar with.

Puspitawi (2017) took a study on utilizing interactive multimedia for teaching reading narrative text and confirmed the claim that interactive multimedia had a positive impact on students' narrative text reading comprehension.

**Table 5. Significant Difference in the Reading Comprehension Between the Experimental and Controlled Groups**

Variable	Controlled		Experimental		<i>t</i> (40)	<i>p</i>	$\alpha$	Decision
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Reading Comprehensic	34.85	11.30	43.55	5.03	4.44	0.00	0.05	Significant

Table 5 reveals the significant difference between the reading comprehension of the students in controlled and experimental group. The computed mean for the experimental group was 43.55, which was higher than the computed mean for the control group, which was 34.85. The computed value obtained using the t-test as the statistical treatment was 4.44, with a p-value of 0.00. The null hypothesis was rejected since the p-value was less than 0.05, indicating that there is a significant difference in reading comprehension between the controlled and experimental groups. As a result, the multimedia presentations that were employed were effective.

When the results of the two groups of students were compared, students in the controlled group who used printed stories or instructional materials had lower reading comprehension than students in the experimental groups because the materials used were not as engaging and interactive as multimedia presentations. The multimedia presentations assisted learners in improving their reading comprehension not just because readers are visually engaged, but also because interactive content embedded in the presentations might drive active learning (videos, images, polls, scenarios, etc.)

The result supported the claim of Orenca (2018) which explained that Multimedia Blurb promotes reading comprehension of narrative texts by using language to make sense of the content and web-based digital tools to express meaning. Also, learners enhanced knowledge when computer-mediated texts were employed to expand or limit readers' information-gathering capabilities, according to Reinking and Rickman (2020). In addition, a computer-assisted instructional package as a self-learning tool, according to Stephen, Sowmya, and Senthilkumar (2014), is an effective and suitable support resource for teaching English language.

### Summary

The study's main goal was to determine if multimedia presentations could help students of the 21<sup>st</sup> century improve their reading comprehension. Specifically, it aimed to identify the students' level of reading comprehension, develop the multimedia presentation that will be used as a tool in refining the reading comprehension of the learners, and determine if there is a significant difference between the reading comprehension of experimental and controlled groups after the utilization of multimedia presentation.

The participants were 80 students from ACTS Computer College Senior High School's ABM, HUMSS, ICT, and STEM strands. It was held at the aforementioned College in Sta. Cruz, Laguna, school year 2021-2022.

As a result of her investigation, the researcher created multimedia presentations. The achievement test created by the researcher and aligned with the curriculum guide provided by the Department of Education was the major instrument used in this research study. Before being delivered to the respondents, the questionnaire was verified and evaluated for ideas and improvements. Before being used in class, the multimedia presentations were also reviewed by IT experts, Head Instructors, and English teachers.

Permission from the school principal of the chosen school was acquired prior to the data collection phase. After the request was authorized, the data was gathered.

The achievement test was given to both the controlled and experimental groups. The test results of the two groups in question were compared. This was used to determine whether multimedia presentations are a useful tool for improving students' reading comprehension skills. In order to instruct senior high school students who were also her respondents, the researcher used multimedia presentations.

The responses from the respondents were recorded, tallied, computed, and analyzed. The statistical treatments used in computing the data were (1) Mean, (2), and T-Test.

The following conclusions were reported based on the acquired data and analyses that were undertaken. The experimental group of ABM learners attained very satisfactory performance while the controlled group attained satisfactory performance. Both the experimental and controlled group of HUMSS learners achieved very satisfactory performance. The experimental group of ICT learners accomplished very satisfactory performance while the controlled group attained satisfactory performance. The experimental group of STEM learners accomplished outstanding performance while the controlled group attained very satisfactory performance.

The null hypothesis was rejected which implies that the reading comprehension between the controlled and experimental groups differs significantly.

### **Conclusions**

The following conclusions are drawn based on the study's various findings in order to address the problem's stated requirements;

When compared to the controlled group, which solely used printed short stories, the experimental group of learners who used multimedia presentations to understand the story had a greater level of comprehension. Based on the results of the achievement test of the two groups of learners, the multimedia presentations utilized in teaching appear to be successful in boosting learners' reading comprehension. There is a significant difference in the reading comprehension between the controlled and experimental groups of learners.

### **Recommendations**

Based on the findings and conclusions drawn, the following were recommended:

1. Teachers can employ multimedia presentations to help students improve their reading comprehension in the twenty-first century. These multimedia presentations feature not just text and photos, but also animations and dub voice to help the audience better understand the content. To make the materials more effective, the teacher can include vocabulary words at the start that will aid learners in unlocking difficulties.
2. Multimedia presentations are more effective than printed materials in terms of reading comprehension, therefore teachers can use them as part of curricular instruction.
3. Future researchers are encouraged to perform more research on this problem with a larger population, as well as consider additional suggestions for improving the multimedia presentation.

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