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Relationship between the Extent of Utilization of Multimedia-Assisted Instruction of English Reading Teachers and Pupils' Academic Performance

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ABSTRACT

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This study investigated the extent of multimedia-assisted instruction utilization by English reading teachers and its relationship on the academic performance of their pupils. Using a descriptive-correlational research design, data were collected from 60 English reading teachers and their corresponding pupils. Descriptive statistics summarized the teachers' profile and multimedia utilization levels, while Pearson's correlation measured the relationship between multimedia usage and pupils' academic outcomes. Analysis of Variance (ANOVA) was employed to determine whether there were significant

differences in the extent of multimedia-assisted instruction utilization among teachers across their profile variables such as age, years of teaching experience, and highest educational attainment. Results revealed a significant but low positive correlation between the extent of multimedia-assisted instruction by teachers and pupils' academic performance, indicating that increased use of multimedia tools modestly enhances learning outcomes. The academic performance of pupils was found to be generally satisfactory, indicating that most students met or exceeded the expected learning outcomes during the study period. Analysis of Variance (ANOVA) revealed that among the teacher profile variables, the highest educational attainment significantly influenced the extent to which multimedia-assisted instruction was utilized. Teachers with higher educational qualifications tended to use multimedia tools more extensively in their teaching. These results highlight the importance of continuous professional development in enhancing multimedia instructional practices that support improved student performance. Recommendations include sustained professional development and targeted interventions to optimize multimedia use in the classroom.

INTRODUCTION

The fourth Sustainable Development Goal (SDG 4) of the United Nations emphasizes the critical importance of ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all. Central to this global commitment is the aspiration that by 2030, all youth and a substantial proportion of adults, both men and women, will achieve literacy and numeracy. Literacy is not merely a functional skill it is a foundation for learning across all domains, a key to unlocking human potential, and a crucial tool for fostering sustainable development (Giangrande et al., 2019). In line with this international mandate, the Philippines has identified the persistent issue of struggling and non-reader pupils as a major challenge in its education system (Basilio, 2024), especially at the basic education level.

Reading is a core competency that lays the groundwork for lifelong learning, academic success, and informed citizenship. Unfortunately, despite national efforts and ongoing literacy programs, a significant number of Filipino learners continue to face difficulties in acquiring proficient reading skills (Idulog et al., 2023). The Department of Education (DepEd), recognizing the gravity of this problem, initiated DepEd Memorandum No. 001, s. 2024, titled "Catch-Up Fridays," which was implemented beginning January 12, 2024, across all elementary and secondary schools and Community Learning Centers (CLCs) nationwide. The memorandum mandates that every Friday be allocated for the

"Drop Everything and Read" (DEAR) activity, in line with the operationalization of the National Reading Program (NRP), and incorporates other developmental aspects such as Values, Health, and Peace Education through the Homeroom Guidance Program (HGP).

While DEAR activities aim to instill a culture of reading and develop foundational reading habits, they are particularly designed to benefit learners who are struggling or lagging in their reading development. The Catch-Up Fridays initiative underscores the government's renewed commitment to strengthening reading proficiency among Filipino learners, especially in the foundational years of schooling. However, the scope of the reading crisis remains extensive. Reports from the Department of Education Region IV-A and DepEd Bicol, as cited by the Philippine Institute for Development Studies (2024), reveal alarming statistics. In Region IV-A, non-readers and learners with very low comprehension skills persist even at higher grade levels, such as Grades 7 and 8. In the Bicol Region, approximately 76,000 learners from Grade 1 to Senior High School were identified as struggling readers or non-readers. These figures illustrate the scale of the challenge and the need for innovative and effective strategies to improve reading instruction and learner outcomes.

Given the scale of the issue and the changing educational landscape, the teaching and learning process must be continually re-examined and innovated. One of the significant transformations in recent decades is the integration of technology in education. The rapid advancement of information and communication technology (ICT) has introduced powerful tools for instruction, particularly multimedia-assisted instruction (MAI). According to Camacho (2025), the evolution of ICT has profoundly impacted the classroom environment, enabling teachers to facilitate more dynamic, flexible, and learner-centered instruction. Multimedia-assisted instruction refers to the strategic use of various forms of media including text, audio, graphics, animations, video, and interactive content to support and enrich the learning process (Aziz, 2023). This method of instruction has been shown to improve content delivery, increase student engagement, and cater to multiple learning styles, thereby addressing the diverse needs of learners in a classroom.

As noted by Asikin (2025), the integration of multimedia into educational settings is not merely a technological advancement but a pedagogical shift that promotes better comprehension and retention. Through multimedia, teachers can present information in multiple formats, making abstract or complex ideas more accessible to young learners. This is especially relevant in English reading instruction, where visual and auditory elements can aid in phonemic awareness, vocabulary development, fluency, and comprehension. Alhazmi (2024) emphasize

that multimedia goes beyond traditional text-based instruction by incorporating audio, video, and animation, thus creating immersive and interactive learning environments.

However, despite its benefits, multimedia-assisted instruction is not without its limitations. George (2024), cautions that over-reliance on technology in education may lead to undesirable outcomes such as a decline in students' writing abilities, reduced imagination and critical thinking, and the dehumanization of the teacher-student relationship. These potential drawbacks underline the importance of thoughtful integration and balance when using multimedia tools in the classroom. The goal should not be to replace traditional pedagogy but to enhance it through strategic and meaningful application.

Nonetheless, empirical evidence supports the efficacy of multimedia-assisted instruction in improving students' academic performance. Studies conducted by Qasserras (2024), Kotiash et al. (2022), and Isaeva et al. (2025) illustrate how multimedia tools can significantly improve communication, promote active learning, and support diverse learning styles in primary education. Multimedia encourages cognitive engagement by stimulating both the auditory and visual channels, a concept aligned with Mayer's (2005) Cognitive Theory of Multimedia Learning as cited in (Bechtold, 2023). This theory posits that individuals learn better when information is presented using both words and relevant images rather than through text alone. The dual-channel processing of information enhances understanding, facilitates deeper learning, and leads to better knowledge retention.

In the context of English reading instruction, multimedia-assisted instruction has been found to be particularly effective. Spjeldnæs and Karlsen (2024), Singh and Alexander (2022) show that digital resources such as e-books, audiobooks, interactive whiteboards, and educational apps contribute to improved literacy outcomes by making reading more interactive, engaging, and accessible. Kassim and Nordin (2024), Zamri et al. (2023) further point out that multimedia caters to various learning styles visual, auditory, and kinesthetic allowing teachers to differentiate instruction and address individual learner needs. This inclusive approach to education fosters learner autonomy, motivation, and creativity, thereby cultivating a more enriching and responsive learning environment.

Moreover, studies by Amirova (2025), Al-Rashidi (2025), and Kee et al. (2024) provide empirical evidence that students taught using multimedia instructional strategies consistently outperform their peers who receive traditional instruction. Abubakar et al. (2024) assert that technology-integrated learning environments encourage student independence and result in higher academic performance. Subject-specific studies further validate these findings. Basheer

et al. (2025) report significant gains in concept mastery and scientific literacy among students exposed to green chemistry-based multimedia instruction. Hadi et al. (202) and Tuma (2021) reveal that interactive media improve learning outcomes, particularly in science and technical subjects, while Sudarmo et al. (2021) demonstrates how mind maps and multimedia tools facilitate knowledge organization and memory retention.

Multimedia-assisted instruction has the potential to significantly enhance English reading performance by engaging multiple senses and catering to diverse learning styles. Unlike traditional text-based approaches, multimedia incorporates visual, auditory, and sometimes interactive elements, which can deepen learners' comprehension and retention of reading material. For instance, visual aids help contextualize vocabulary and support decoding skills, while audio narration can reinforce correct pronunciation and intonation (Taş, 2024). These tools are particularly effective for young learners or those with limited exposure to English outside the classroom, as they provide repeated and meaningful language input in an engaging format. Additionally, multimedia materials often increase motivation and interest in reading tasks, leading to greater learner attention and time-on-task, which are critical for skill development (Liu and Gu (2020). They also allow for differentiated instruction by enabling teachers to adjust content complexity and pacing based on individual student needs (Goyibova et al., 2025). Moreover, multimedia enhances reading comprehension by supporting the visualization of narrative elements, sequencing of events, and development of inference and prediction skills. Given these advantages, multimedia-assisted instruction represents a valuable pedagogical approach to improving English reading outcomes.

In light of these findings, the integration of multimedia-assisted instruction into English reading instruction emerges as a promising approach to address the long-standing challenge of poor reading performance among Filipino learners. The widespread availability of digital resources and the growing emphasis on learner-centered instruction provide an opportune context for exploring how multimedia can transform English reading education in Philippine elementary schools.

This study is therefore anchored on Mayer's (2005) in Knoster (2021) Cognitive Theory of Multimedia Learning, which argues that learning is more effective when information is presented through both visual and auditory channels, allowing for better cognitive processing and retention. Core principles of this theory, such as multimedia, coherence, and modality, support the idea that well-designed multimedia instruction enhances student comprehension and academic outcomes. Supporting literature such as Özdemir et al. (2024),

Asysyura et al. (2023), and Waang, (2023) confirms that the strategic use of multimedia tools such as animation, narration, and interactive simulations can significantly enhance learning outcomes, particularly in reading comprehension.

OJECTIVES OF THE STUDY

In response to the pressing issue of reading difficulties among Filipino elementary pupils and the evolving nature of instructional technology, this study seeks to examine the utilization of multimedia-assisted instruction by English reading teachers and its impact on learners' academic performance. Specifically, the study aims to: (1) describe the profile of the respondents in terms of age, years of teaching experience, and highest educational attainment; (2) determine the extent to which multimedia-assisted instruction is utilized by teachers; (3) assess the academic performance of pupils during the third quarter of the SY 2023–2024; (4) examine the relationship between the extent of multimedia utilization and pupils' academic performance; and (5) identify significant differences in multimedia utilization among teachers based on their demographic profiles;

FRAMEWORK

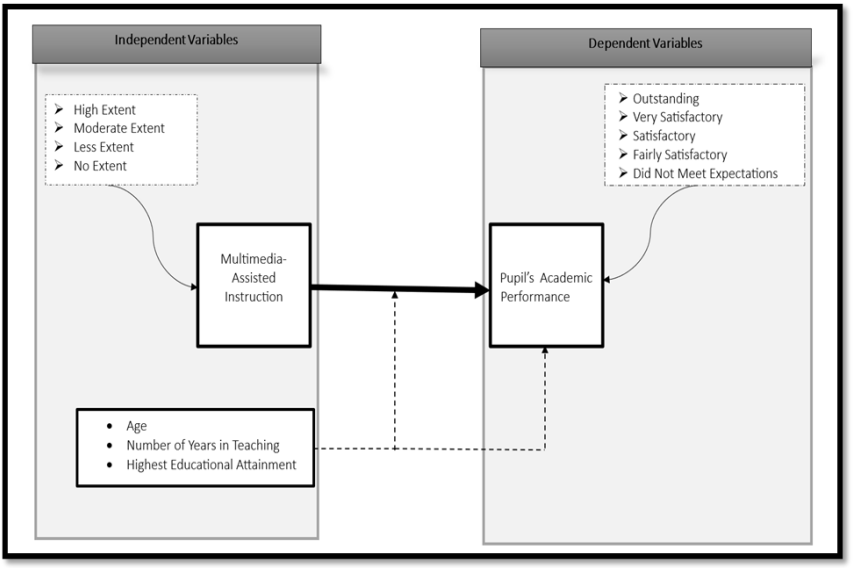
This conceptual framework illustrates the relationship between Multimedia-Assisted Instruction and Pupils' Academic Performance, with a particular focus on how the use of multimedia tools in teaching influences students' learning outcomes.

At the core of the framework is the bold arrow, which represents the central relationship being investigated: the direct impact of the extent of multimedia-assisted instruction on pupils' academic performance. This emphasizes that as teachers increase their use of multimedia tools from no extent to high extent, there is an expected corresponding effect on how well pupils perform academically, measured through performance categories such as Outstanding, Very Satisfactory, Satisfactory, Fairly Satisfactory, and Did Not Meet Expectations.

The independent variable is Multimedia-Assisted Instruction, categorized by extent of use (high, moderate, less, or no extent). The dependent variable is the academic performance of pupils, classified into the five performance levels.

The framework integrates moderating variables (shown in dotted lines), such as age, number of years in teaching, and highest educational attainment of teachers. These personal and professional characteristics may influence how effectively multimedia is used and how it affects pupils' performance, either enhancing or weakening the primary relationship.

Figure 1. *Conceptual Framework Illustrating the Influence of Multimedia-Assisted Instruction on Pupils' Academic Performance*



METHODOLOGY

Research Design

This study employed a quantitative-correlational research design to examine the relationship between the extent of multimedia-assisted instruction utilization among English reading teachers and the academic performance of their pupils. The design allowed for the collection of numerical data to determine both the differences in multimedia utilization across teacher profile variables and its possible influence on student outcomes.

Locale of the Study

This study was conducted in public elementary schools in the Division of Camiguin during the SY 2023-2024. The division comprises five municipalities, each comprising different public elementary schools.

Respondents of the Study

The study's respondents were the English Reading teachers in the public elementary schools in the whole Division of Camiguin. A complete enumeration of respondents was done since the number of teachers is manageable.

Table 1

Distribution of respondents by District

School's District	Number of teachers (f)	Percentage (%)
Catarman District	12	20
Mahinog District	15	25
Guinsiliban District	6	10
Sagay District	9	15
Mambajao District	18	30
Total	60	100

Research Instrument

The researcher primarily utilized a self-made survey questionnaire as the key instrument to collect essential data and information from the study respondents. The researcher thoroughly read articles and further research other related literatures to ensure the questions were correctly, well-crafted, aside from ensuring their validity and reliability through systematic procedures. The research questions and variables employed in the study were used as guides for the research instrument. The questionnaire consisted of two parts to address the study's specific objectives. Part I focused on the respondents' Demographic Information. Part II presented the indicators for the extent of the utilization of multimedia-based teaching approaches among English Reading teachers.

Validity and Reliability of research instrument

To ensure the reliability and validity of the research instrument, pilot testing was conducted to 15 non-respondents reading teachers since there are only limited number of English-reading teachers in the division. After the pretest,

the collected data were analyzed using Cronbach's Alpha coefficient to assess internal consistency. It obtained a value of 0.7 which indicates acceptable internal consistency, confirming that the instrument reliably measures the intended constructs.

Before conducting the locale testing, the researcher consulted to subject matter experts, including Education Program Supervisors, District-in-Charge, and Master Teachers. These experts reviewed the content of the research instrument, providing valuable insights and suggestions. Based on their feedback, each indicator was categorized as "retain," "modify," or "reject" to ensure content validity and alignment with the research objectives.

Data Gathering Procedure

Prior to the conduct of the study, the researcher obtained approval from the Schools Division Superintendent (SDS) and the school heads of the participating schools. The approved letters from the SDS and school heads were presented to the respondents, who were asked to provide informed consent before administering the research questionnaire.

The researcher then personally interviewed the respondents and thereafter collate the gathered data, tabulated, analyzed, interpreted, and presented.

Data Analysis

Scoring Procedure

The researcher used the Four Point Likert Scale to quantify the statements or indicators on how much multimedia is utilized in teaching. Table 2 outlines the scoring guide for assessing the extent of multimedia-based teaching utilization, with four levels ranging from "High Extent" (always utilized) to "No Extent" (not utilized).

Table 2

The table displays the scoring guide in the extent of utilization

Arbitrary Value	Statistical Limits	Descriptive Equivalent	Interpretation
4	3.26-4.00	High Extent	Multimedia Assisted Instruction is always utilized
3	2.51-3.25	Moderate Extent	Multimedia Assisted Instruction is sometimes utilized
2	1.76-2.50	Less Extent	Multimedia Assisted Instruction is rarely utilized
1	1.00-1.75	No Extent	Multimedia Assisted Instruction is not utilized

Table 3 presents the rating values for academic performance, categorizing scores into five descriptors, from "Outstanding" to "Did Not Meet the Expectations," based on DepEd Order No. 8, s. 2015.

Table 3

The table shows rating values in academic performance

Grading Scale	Descriptor
90-100	Outstanding
85-89	Very Satisfactory
80-84	Satisfactory
75-79	Fairly Satisfactory
Below 75	Did Not Meet the Expectations

**Source: DepEd Order No. 8, s. 2015 Model Specification*

In analyzing the data collected, both descriptive and inferential statistics were employed to address the research objectives. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize the respondents' profile and the extent of multimedia-assisted instruction utilization among English reading teachers.

To determine the relationship between teachers' multimedia use and their pupils' academic performance, Pearson product-moment correlation was utilized, guided by the formula:

$$r = \frac{\sum(X - \bar{X})(Y - \bar{Y})}{\sqrt{\sum(X - \bar{X})^2 \sum(Y - \bar{Y})^2}}$$ ***Equation***

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

where: *r* represents the correlation coefficient; X and Y are the individual scores of the two variables being correlated (in this case, the extent of multimedia-assisted instruction

academic performance, respectively); X^- and Y^- are the means of variables X and Y; and the summation symbol ∑ indicates that the calculation is done over all paired scores. This formula measures the strength and direction of the linear relationship between two continuous variables.

Analysis of Variance (ANOVA) was conducted to determine significant differences in the extent of multimedia utilization across teacher profile groups such as age, educational attainment, and years of service, using the F-test.

variables in the study.

Ethical Considerations

The researcher is committed to maintaining ethical integrity by ensuring informed consent from all potential participants. This involves providing comprehensive information about the study's objectives, procedures, risks, benefits, confidentiality measures, and the voluntary nature of participation. Participants were explicitly informed of their right to withdraw without facing any negative consequences. This is operationally done by letting the respondents sign an informed consent form stating their agreement and consent to be part or participant of the study. Additionally, to safeguard confidentiality, all personal data will be anonymized and securely stored, accessible only to authorized research team members. These measures underscore the researcher's dedication to ethical principles and protecting participant rights and well- being.

RESULTS AND DISCUSSION

Profile of the respondents

Table 4 presents the demographic profile of the respondents. The respondents of the study were predominantly experienced and academically qualified educators. Most were aged 51 and above (33.33%) and between 41–50 years old (30.00%), indicating a largely mature teaching workforce, while only 13.33% were aged 30 and below.

In terms of teaching experience, 38.33% had been in the profession for over 21 years, suggesting a strong presence of seasoned teachers who may have established traditional teaching practices but also possess the professional maturity to adopt new instructional strategies.

Educational attainment was relatively high, with 61.67% having earned Master's units and 20.00% holding a Master's degree.

Table 4

Socio-Demographic Profile of the English Reading Teacher Respondents, Camiguin Division, 2024 (N=60)

Variable	Frequency	Percentage (%)
Age (years)		
30 and below	8	13.33
31-40	14	23.34
41-50	18	30.00
51 and above	20	33.33
Total	60	100.00
Number of Years in Teaching (years)		
1-5	10	16.67
6-10	13	21.67
11-15	8	13.33
16-20	6	10.00
21 and above	23	38.33
Total	60	100.00

Highest Educational Attainment	10	16.67
Bachelor's degree		
With Master's units	37	61.67
Master's degree	12	20.00
With Doctoral units	1	1.66
Total	60	100.00

Extent of utilization of multi-media assisted instruction among teachers

Table 5 presents the extent of multimedia-assisted instruction utilization among English reading teachers in the Division of Camiguin for the school year 2024–2025. Overall, the respondents demonstrated a high extent of multimedia use, as indicated by the Total Average Weighted Mean (TAWM) of 3.42 and a standard deviation (SD) of 0.74. This average suggests that teachers frequently incorporate various multimedia tools and strategies in their reading instruction. The relatively moderate standard deviation reflects a clustered pattern of responses, indicating consistency in multimedia practices across the teacher respondents. It implies that while individual preferences may vary slightly, the overall trend leans toward active and regular multimedia integration.

Among the twelve indicators assessed, the highest-rated was collaboration with co-teachers on multimedia use (M = 3.53, SD = 0.35), followed closely by developing new teaching strategies and instructional materials (M = 3.52, SD = 0.34), and using videos and animations to explain complex reading concepts (M = 3.50, SD = 0.38). These results highlight the proactive role of teachers in not only utilizing multimedia tools but also engaging in peer collaboration and content development. Collaboration, as emphasized by Wu (2024), is a key component of professional learning communities that fosters the exchange of best practices and mutual support in adopting new instructional technologies. Similarly, the emphasis on developing original strategies reflects the findings of Shakeel et al. (2023), who argued that multimedia enhances conceptual understanding and encourages innovation in pedagogy.

Also rated with a high extent were activities such as incorporating simulations (M = 3.50), creating interactive technology-based reading activities (M = 3.48), and utilizing structured programs like Read Naturally and Reading A-Z (M = 3.48). These scores reflect teachers' efforts to provide immersive, engaging, and structured reading experiences for learners an approach supported by Mayer's (2005) cognitive theory of multimedia learning, which asserts that learners better understand content when it is presented in both visual and auditory formats.

However, two indicators received only a moderate extent rating: utilizing animated reading coaches or e-tutors (M = 3.25, SD = 0.75) and employing software tools with instructional prompts (M = 3.23, SD = 0.72). These moderate scores may point to barriers such as limited access to technology, lack of training, or unfamiliarity with advanced digital platforms. This is consistent with prior research showing that while teachers may be willing to adopt multimedia, constraints in infrastructure and digital literacy often limit full implementation (Nurhayati et al., 2024).

The variation in standard deviations across items ranging from as low as 0.12 to as high as 0.99, indicates that some multimedia practices are more uniformly applied than others. For instance, creating interactive learning activities (SD = 0.12) shows highly consistent use among teachers, while the use of dynamic tools like Telestory or ChatterPix (SD = 0.99) appears more varied, suggesting a mix of familiarity and resource availability.

Table 5

Extent of Utilization of Multi-Media Assisted Instruction among English Reading Teacher- Respondents, Camiguin Division, 2024 (N=60)

Indicators	Mean	SD	Qualitative Description
1. Collaborate to co-teachers as to the trends of utilizing multimedia-based teaching in English Reading consistently.	3.53	0.35	High Extent
2. Develop new teaching strategies and instructional materials intended to teach reading effectively with the aid of multimedia tools.	3.52	0.34	High Extent
3. Utilization of videos and animations to explain complex topics in English Reading like Phonemic, Phonology, Phonics etc.	3.50	0.38	High Extent

4. Incorporation of interactive simulations to engage learners in hands-on learning experiences like laptops, cell phones, Power Points, television, internet etc.	3.50	0.25	High Extent
Create interactive learning activities that use technology to engage learners with reading and writing materials.	3.48	0.12	High Extent
5. Utilized multimedia driven strategic instruction like *Read Naturally, Phonics Alive!, Reading A-Z Program, or the like* to build reading fluency and comprehension.	3.48	0.95	High Extent
6. Utilization of Multimedia tools to create dynamic and engaging learning environment in English Reading class like *Telestory, Chatter pix*, etc.	3.47	0.99	High Extent
7. Incorporate audio elements like podcast, voice over, music and sound effects to provide auditory reinforcement of words and texts in teaching.	3.42	0.25	High Extent
8. Use of digital resources to supplement traditional English Reading textbooks like use of eBooks and online reading books.	3.38	0.35	High Extent
9. Select an appropriate reading program and products that prompt learners to access supports, apply strategies, and pause to monitor comprehension like the *ReadWorks or ReadTheory Project* or *Thinking Reader, etc.*	3.35	0.65	High Extent

10. Integrate various multimedia tools like Puppet Pals App to the 21st century teaching and learning styles to strengthen independent learning for Reading.	3.32	0.65	High Extent
11. Utilizes multimedia to mirror and reinforce proven teacher-led strategy instruction with pop-ups, linked questions, online resources, and animated reading coaches or e-tutors.	3.25	0.75	Moderate Extent
12. Employing software and multimedia tools that have prompts and supports directly to the teaching and learning process like *Fluency Tutor for Google*, *MindPlay Virtual Reading Coach, or the like.*	3.23	0.72	Moderate Extent
Total Average Weighted Mean	3.42	0.74	High Extent

Academic performance among pupils

In this study, *academic performance* is operationalized as the weighted average grade of pupils in English, specifically their third-quarter grade for the school year 2024–2025. This measure was chosen as it reflects a comprehensive evaluation of pupil performance across multiple English competencies, including reading comprehension, vocabulary, grammar, and written expression. The grades were collected directly from official school records, ensuring objectivity and standardization based on the Department of Education (DepEd) assessment protocols. Using this official grading system provides a reliable indicator of learner achievement and enables meaningful analysis of how instructional practices may influence outcomes. The third-quarter grading period was selected to represent a midpoint measure after initial teacher interventions have taken effect but before year-end assessments making it a suitable snapshot of learning progress.

Table 6 reveals an average third-quarter grade of 87.56, categorized as "Very Satisfactory." The majority of pupils (77.40%) fall under the "Very Satisfactory" to "Outstanding" categories. This aligns with DepEd's grading standards, underscoring effective teaching practices. High academic performance correlates with innovative instructional methods, including multimedia tools (Tang et al., 2009). The results suggest that multimedia enhances understanding, especially

for visual and auditory learners. However, continuous teacher training on technology integration remains crucial to maintaining and improving outcomes.

Table 6

Pupils' Academic Performance during the Third Quarter School Year 2023-2024

Grading Scale	Description	Frequency	Percentage (%)	Average
90-100	Outstanding	602	34.62	92.37
85-89	Very Satisfactory	744	42.78	86.68
80-84	Satisfactory	356	20.47	82.23
75-79	Fairly Satisfactory	37	2.13	78.11
	Total	1739	100.00	87.56 (VS)

Correlation Between the Extent of Multimedia-Assisted Instruction and Academic Performance

Table 7 presents the relationship between the utilization of multi-media assisted instruction and academic performance among pupils. Using a scatter graph, the correlation relationship showed a direct relationship, data on variables were continuous, and Likert scale values were found in the Statistical results. Pearson's Moment Correlation Coefficient, called r, was employed in this relationship because it determines the strength and direction relationships of two variables. To determine how predictable the variation of the y variable, the academic performance among pupils, given the independent x variable, and the utilization of multi-media assisted instruction, the Coefficient of determination r^2 is employed.

Table 7

Correlation Analysis Between Utilization of Multimedia-Assisted Instruction and Academic Performance Among Pupils

Comparison	r	r^2	t-value	p-value	df	Interpretation
Multimedia Assisted Instruction and Academic Performance	0.21	0.0441	2.72	0.009	58	Significant, Low positive correlation

Table 7 reveals that there was a significant relationship (r =0.21, p=0.00< 0.05) between the utilization of multi-media assisted instruction and academic performance among pupils using two tailed tests. The coefficient r-value 0.21 denotes a low positive correlation in two-tailed tests. The Coefficient of determination r^2 =0.0441 tells that 4.41% of the variation in academic performance among pupils is explained by the variation in the utilization of multi-media assisted instruction while 95.59% is unexplained. However, since the *p-value* is lesser than 0.05 level of significance, it still means that both variables, utilization of multi-media assisted instruction and academic performance among pupils are lowly associated. It further means that as intervention of utilizing multi-media assisted instruction will be sustained to improvement, academic performance among pupils will likely improve.

Several studies from 2020 to 2024 explored the relationship between multimedia-assisted instruction and students' academic performance, reinforcing the findings in Table 7. Akinbadewa (2020) investigated the effect of multimedia instructional packages on secondary school students' academic achievement in biology. The study revealed that students taught using multimedia significantly outperformed their peers taught through conventional methods, regardless of gender or learning styles. This underscores the potential of multimedia tools to enhance understanding and retention of subject matter.

Similarly, Bernaschina (2023) examined multimedia integration in fine arts education, particularly within a flipped learning methodology. Their findings indicated that multimedia resources fostered creative thinking and improved cognitive flexibility, positively influencing academic outcomes. The study highlights the versatility of multimedia tools in diverse educational contexts and their capacity to engage learners in more profound, interactive learning experiences.

Further supporting this correlation, Chango et al. (2022) employed multimodal data fusion techniques to analyze the academic performance of university students in blended learning environments. Their research found that active engagement with multimedia resources significantly predicted academic success. This study emphasizes integrating multimedia tools within modern learning environments to support student engagement and enhance performance. These studies affirm the positive relationship between multimedia-assisted instruction and academic achievement, albeit with varying degrees of impact across contexts and methodologies.

Analysis of Variance on Teacher Profile Variables and Multimedia Utilization

Table 8 reflects the assumptions that the data on the variables were compared on three or more groups, equal options of 4 points Likert Scale on the quantitative dependent variable (extent of the utilization of multi- media assisted instruction among teachers), and scores are typically distributed which fit the requirements in the utilization of Analysis of Variance (ANOVA). Cohen's d, a measure of effect size, determines the substantial differences between the groups.

Table 8

ANOVA Results on the Significant Differences in the Extent of Utilization of Multimedia-Assisted Instruction Among Teachers Across Profile Variables (N=60)

Variable	F-value	P-value	F-crit	Effect size (Cohen's f)	Decision
Age	2.41	0.08	2.77	0.066 (small to medium)	Not Significant
Number of Years in Teaching	2.04	0.10	2.54	0.0647 (small to medium)	Not Significant
Highest Educational Attainment	6.32	0.00	2.77	0.210 (large)	Significant

Variable of Age

Table 8 shows no significant difference in the age variable (F (3, 56) =2.41, p=0.08) on the extent of using multi- media-assisted instruction among teachers as tested at a 0.05 significance level. Therefore, this was suggestive that, indeed, the difference was not due to random chance, and this was further reinforced by the fact that the size of the difference indicated in the effect size was that of medium effect and is statistically insignificant. An average effect size indicates a medium relationship or difference between groups. The average effect size has to do with the differences in point of view on age regarding the extent of the utilization of multi-media-assisted instruction among teachers. It further validates that regardless of age, the respondents perceived the extent of utilizing multi-media-assisted instruction similarly.

The results imply that age does not influence teachers' engagement with multimedia-assisted instruction. This uniformity could be attributed to the widespread availability of professional development opportunities, technological training, or the accessibility of user-friendly multimedia tools in educational institutions. These factors helped bridge the generational gap in technological

competencies and teaching approaches.

Educational stakeholders can leverage this insight to design professional development programs that enhance multimedia utilization across all age groups without bias. It also underscores the importance of creating inclusive training materials and resources that cater to varying levels of prior exposure to technology, ensuring that no demographic group feels excluded or disadvantaged.

From a policy-making perspective, the finding suggests that age-neutral strategies for integrating technology into teaching can yield consistent outcomes. It emphasizes the need for continuous institutional support regarding access to tools and periodic training to sustain multimedia-assisted instructional practices.

A study by Ghavifekr et al. (2016) explored teachers' use of technology in the classroom and found no significant differences in technology utilization across age groups. This aligns with the current findings, suggesting that professional development and shared institutional goals play a key role in homogenizing technological adoption among educators.

Additionally, in a focus group discussion (FGD) conducted by Smith et al. (2021) on multimedia utilization in teaching, participants from diverse age brackets expressed similar challenges and benefits associated with integrating multimedia tools into their instruction. They highlighted that factors such as institutional support, available resources, and training were more influential than age in shaping their multimedia usage practices.

These studies reinforce that age is not a determining factor in teachers' perceptions and usage of multimedia- assisted instruction, emphasizing the need for a supportive and resource-rich environment to ensure consistent application across all demographics.

Variable of Number of Years in Teaching

As shown in Table 8, there was no significant difference in the variable of number of years in teaching ($F(4, 55) = 2.04$, $p=0.10$) on the extent of the utilization of multi- media assisted instruction among teachers as tested at 0.05 level of significance. Therefore, this was suggestive that, indeed, the difference was not due to random chance, and this was further reinforced by the fact that the size of the difference indicated in the effect size was that of medium effect and is statistically insignificant. An average effect size indicates a medium relationship or difference between groups. The average effect size has to do with the differences in point of view on the number of years in teaching and the extent of the utilization of multimedia-assisted instruction among teachers. It further validates that regardless of the number of years in teaching, the respondents perceived similarly the extent of the utilization of multi-media-assisted instruction.

The result suggests that the number of years a teacher has been in service does not significantly affect their adoption or usage of multimedia-assisted instruction. This uniformity could reflect institutional efforts to ensure that all teachers, novice or experienced, have equal access to resources, training, and technological tools. Modern educational institutions often prioritize ongoing professional development and the standardization of teaching methods, which can diminish any disparities linked to teaching experience.

This finding implies that newer teachers can quickly adapt to multimedia use due to their exposure to technology during their pre-service training.

Meanwhile, institutional support and evolving teaching standards may encourage experienced teachers to embrace new instructional technologies despite the potential challenges of unlearning traditional methods.

From a policy perspective, this finding highlights the importance of sustaining equitable access to technological resources and professional development across all tenure groups. Training programs should cater to diverse experience levels, emphasizing the technical aspects and pedagogical strategies that integrate multimedia effectively.

A study by Huang and Teo (2020) investigated teachers' perceptions of technology integration in classrooms and found that teaching experience did not significantly influence their willingness or ability to adopt technology- enhanced instructional practices. This suggests that institutional factors such as consistent training and resource availability play a more significant role in shaping teachers' utilization of multimedia tools.

Similarly, in a focus group discussion (FGD) conducted by Lin and Yu (2025), teachers from varying levels of experience expressed that multimedia adoption depended more on external factors such as administrative support, access to training, and classroom infrastructure than on their years in service. Both novice and veteran teachers emphasized the need for continuous technical support to maintain their confidence and competence in using multimedia tools.

These findings align with the current result, underscoring that experience is not a significant barrier to utilizing multimedia-assisted instruction. Instead, the success of multimedia integration hinges on institutional investments in teacher training and resource distribution, benefiting educators at all stages of their careers.

Variable of Highest Educational Attainment

Table 8 reveals a significant difference in the variable of highest educational attainment ($F(3, 56) = 6.32$, $p=0.00$) on the extent of the utilization of multimedia-assisted instruction among teachers as tested at 0.05 level of significance.

Therefore, this was suggestive that, indeed, the difference was not due to random chance, and this was further reinforced by the fact that the size of the difference indicated in the effect size was that of a large effect and is statistically significant. A large effect size indicates a strong relationship or difference between groups. So, the more significant the effect size is, the more so are the differences in the point of view on the highest educational attainment regarding the extent of the utilization of multi-media-assisted instruction among teachers. This means that there is enough evidence to reject the null hypothesis.

The significant findings suggest that teachers' level of formal education plays a role in their extent of using multimedia-assisted instruction. Teachers with higher educational attainment, such as master's or doctoral degrees, may have greater exposure to advanced teaching methods and research on integrating multimedia in education. These educators will likely be more familiar with technology-enhanced pedagogy due to their participation in academic discourse, professional development, and specialized training.

In contrast, teachers with lower educational qualifications may have less exposure to such methodologies and tools. This gap emphasizes the need for targeted training and capacity-building programs to ensure that all educators can effectively utilize multimedia tools regardless of educational attainment.

From a practical perspective, educational institutions and policymakers should consider creating differentiated training programs tailored to teachers' varying needs based on their educational backgrounds. Equitable access to resources and mentorship opportunities can help bridge these gaps and promote the inclusive adoption of multimedia-assisted instruction.

In addition, Lee et al. (2020) identified that teachers are more likely to embrace changes and commit to their roles when principals provide learning support, such as professional development activities, that fulfill their basic psychological needs. This suggests supportive leadership and targeted professional development can enhance teachers' confidence and competence in integrating technology into their classrooms.

Moreover, Papanikolaou et al. (2023) revealed that their digital innovativeness and adaptability influenced university teachers' ability to implement instructional changes during the COVID-19 pandemic. The study suggests that educators more open to digital innovations are better equipped to adopt new teaching tools and foster technology-rich learning environments. These findings align with the current result, reinforcing that advanced education enhances teachers' capacity and willingness to integrate multimedia-assisted instruction. Institutions must leverage this insight to design professional development programs that cater to teachers across the educational attainment spectrum, ensuring equal opportunities

to benefit from technology- enhanced teaching.

Beyond individual characteristics, institutional and systemic factors play a critical role in shaping teachers' ability to integrate multimedia-assisted instruction. Access to digital resources, such as reliable internet connectivity, functional equipment, and updated software, significantly influences the extent of technology adoption. Moreover, encouragement and support from school leaders through clear directives, technical training, and provision of time and resources can either empower or constrain teachers' efforts to innovate. These support structures often vary across educational levels or school types, with urban and well-funded institutions more likely to facilitate effective multimedia use than under-resourced or rural schools. Understanding these contextual differences is essential for developing equitable and scalable technology integration strategies in education.

Table 9 presents the results of Tukey's Honestly Significant Difference (HSD) test on the highest educational attainment between groups with Master's and Doctorate degrees.

Table 9

Post Hoc Analysis using Tukey's Honestly Significant Difference Test (HSD) on the Extent of Utilization of Multimedia-Assisted Instruction Among Teachers Across Profile Variables

Variable	Groups	Mean difference	Absolute Values	q value;	df	HSD	Decision

Highest Educational attainment	With units in Master's degree versus with units in Doctorate degree	-2.21	2.21	3.399	3, 56	1.29	Significant

On the variable of highest educational attainment, as reflected in Table 9, the difference lies between those with units in a master's degree and with units in a doctorate, as shown in the absolute value of 2.21, which is greater than HSD's 1.29 at 3 degrees of freedom and 56 degrees of freedom. Those with units in a Master's degree always utilized multimedia assisted instruction compared to those respondents with units in a doctorate.

It is important to consider the limitations of the participant pool in a research study investigating teachers in elementary education. Teachers with doctorate degrees are often not represented in survey responses because they tend to transition out of elementary-level teaching. Instead, they often pursue roles in higher education, educational leadership, curriculum design, or research. As a result, their absence from the elementary teaching field creates a gap in the survey population, potentially limiting the study's ability to include perspectives from highly qualified individuals with advanced academic credentials.

Recent studies indicate that age does not have a significant impact on the integration of technology in education. For instance, a study by Leong et al. (2021) found that younger teachers may have an initial advantage in using technology due to greater familiarity. However, older teachers could adopt multimedia-assisted instruction once they receive targeted professional development. Additionally, a study by Salamah et al. (2024) revealed that age was not a significant determinant in the use of educational technologies; instead, it was the availability of training and support that influenced teachers' willingness to integrate multimedia tools into their teaching practices.

The findings suggest that age does not significantly influence teachers' use of multimedia-assisted instruction. Professional development opportunities should be designed to target all teachers, regardless of age, to enhance their digital skills and confidence. The FGDs indicate that collaborative learning, where younger and older teachers can share their knowledge and experiences, could further improve the integration of multimedia tools in classrooms.

CONCLUSION

This study aimed to examine the extent to which English reading teachers utilize multimedia-assisted instruction and its relationship to pupils' academic performance in public elementary schools in Camiguin. The results revealed a significant yet modest positive correlation, indicating that greater use of multimedia tools is associated with improved student outcomes. Notably, the highest educational attainment of teachers emerged as a significant factor influencing the degree of multimedia use. These findings underscore the value of integrating technology in instruction to enhance learner engagement and achievement. They also suggest that teacher qualifications may affect instructional innovation, pointing to the need for sustained professional development that equips educators with both technical and pedagogical competencies. Moving forward, future research may explore the specific multimedia tools that yield the greatest impact on reading proficiency and investigate how institutional support systems shape effective multimedia integration in diverse educational settings.

TRANSLATIONAL RESEARCH

The findings of the study may be best translated into various communication platforms for effective information dissemination and awareness campaigns. For stakeholders in remote areas, indigenous and localized materials such as wall newspapers, one-act plays, and instructional leaflets may be developed to convey the benefits of multimedia-assisted instruction. Meanwhile, broader reach can be achieved through social media and mass media channels like television, radio, and newspapers. These approaches will help ensure that teachers, parents, and communities understand the value of integrating multimedia in improving pupils' academic performance.

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Data Availability Statement: The data used in this study are publicly available and can be requested from the author directly.

Conflict of Interest: The authors declare no conflict of interest.

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