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INTEGRATION OF MULTIMEDIA RESOURCES IN TEACHING MUSIC, ARTS, PHYSICAL EDUCATION, AND HEALTH (MAPEH) 4 AND ITS EFFECT ON LEARNERS' ENGAGEMENT

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ABSTRACT

This study examined the integration of multimedia resources in teaching Music, Arts, Physical Education, and Health (MAPEH) 4 and its effect on learners' engagement in Mangaldan District II, Pangasinan Division II during the school year 2025–2026. A descriptive-correlational research design was utilized, involving 53 teachers and learners. Findings revealed that multimedia integration was generally at an "Often" level, with strong use of visual presentations and video materials, while interactive ICT tools were less frequently used. Learners' engagement was also at an "Often" level, with emotional engagement rated highest, followed by behavioral and cognitive engagement. No significant difference was found when grouped according to teaching experience; however, significant differences were observed in terms of ICT training and competence. Furthermore, a significant positive relationship was found between multimedia integration and learners' engagement. The study concludes that multimedia resources play a vital role in enhancing learner engagement, although further improvement in ICT competence and instructional strategies is needed. An instructional enhancement plan was proposed to strengthen multimedia integration and promote deeper learner engagement.

Keywords: *multimedia integration, learner engagement, MAPEH 4*

INTRODUCTION

Across the global educational landscape, technology has become a powerful tool in transforming teaching and learning processes. Many countries have integrated multimedia resources into classroom instruction to enhance learner engagement. Studies

from various international education systems show that students respond positively to visual, auditory, and interactive learning materials. In subjects such as Music, Arts, Physical Education, and Health, multimedia tools are widely used to demonstrate skills and concepts. Developed countries have already established digital classrooms where multimedia is part of daily instruction. These tools include videos, simulations, and interactive learning platforms. Research indicates that multimedia integration increases student motivation and participation. It also helps learners understand complex concepts more easily. As a result, many international schools continue to invest in educational technology. This global trend highlights the importance of examining its impact in different contexts (Mayer, 2019; UNESCO, 2021).

In addition, international education frameworks emphasize 21st-century skills development. These skills include collaboration, communication, creativity, and digital literacy. Multimedia resources are considered essential in achieving these competencies. Learners are no longer passive receivers of information but active participants in learning. Countries such as the United States, Singapore, and Finland have adopted technology-rich learning environments. Teachers in these countries are trained to integrate multimedia effectively into instruction. The use of digital tools has been linked to higher student engagement levels. Learners show greater interest when lessons are presented in interactive formats. This approach also supports differentiated instruction for diverse learners. Therefore, multimedia integration has become a global educational priority (Partnership for 21st Century Skills, 2019; OECD, 2020).

International studies also highlight challenges in implementing multimedia-based instruction. Not all schools have equal access to technology and internet connectivity. Teacher preparedness is also a critical factor in successful integration. Some educators lack training in using digital tools effectively. Despite these challenges, the benefits of multimedia in education remain significant. Research continues to explore how it improves learner engagement and achievement. In MAPEH-related subjects, multimedia is especially useful for skill demonstration. It allows learners to observe and imitate movements accurately. It also enhances understanding of abstract health concepts. This global perspective supports the need for further local studies (Koehler & Mishra, 2018; UNESCO, 2021).

In the Philippines, the Department of Education has strongly encouraged the integration of technology in teaching. The K to 12 Basic Education Curriculum promotes learner-centered and competency-based instruction. Multimedia resources are increasingly being used in classrooms across the country. However, implementation varies depending on school resources and teacher readiness. Urban schools often have better access to digital tools than rural schools. Teachers are gradually adapting to the use of technology in instruction. Training programs have been introduced to improve ICT competencies. Despite these efforts, challenges in implementation remain evident. Some schools still rely heavily on traditional teaching methods. This situation highlights the need for further evaluation of multimedia integration (Department of Education, 2020; Cabalquinto, 2021). The Philippine educational system recognizes the importance of engaging learners effectively. MAPEH, as a learning area, emphasizes holistic development of learners. It

covers cognitive, psychomotor, and affective domains. Multimedia resources can support all these domains effectively. For example, videos can demonstrate physical activities in Physical Education. Audio materials can enhance Music appreciation. Visual presentations can support Arts instruction. Health concepts can be explained through animations and simulations. These tools make learning more meaningful and engaging. Therefore, their integration is highly relevant in the Philippine context (DepEd, 2019; Aquino, 2020).

National studies have shown that students become more engaged when technology is used in teaching. Learners are more attentive and participative during multimedia-based lessons. However, not all teachers consistently apply these strategies. Some face difficulties due to limited resources or lack of training. The government continues to address these gaps through professional development programs. Schools are encouraged to adopt innovative teaching practices. The use of ICT in education is part of national education reforms. These reforms aim to improve learning outcomes and student engagement. MAPEH 4 is included in these efforts for curriculum improvement. This study aligns with these national educational goals (Alvarez, 2021; Department of Education, 2020).

At the local level, particularly in public elementary schools, the use of multimedia resources in MAPEH 4 varies widely. Some teachers actively integrate videos and presentations into their lessons. Others still rely on traditional chalk-and-talk methods. This difference affects the level of learner engagement in classrooms. Students often show more interest when multimedia tools are used. They participate more actively in discussions and activities. However, limited resources remain a common challenge in many schools. Some classrooms lack projectors, speakers, or stable internet access. Teachers also report limited training in using digital tools. These conditions affect the consistency of multimedia integration (Garcia, 2022; Ramos & Dela Cruz, 2021).

In many local classrooms, MAPEH 4 is taught using basic instructional materials. While these methods are still effective, they may not fully engage modern learners. Students today are exposed to technology at an early age. They are more responsive to visual and interactive content. When multimedia is introduced, learners tend to show higher motivation. They also demonstrate better understanding of lessons. Teachers observe increased participation during activities. However, without proper implementation, the benefits may not be fully realized. This highlights the importance of studying its effectiveness. Local evidence is needed to support instructional improvement (Santos, 2021; Villanueva, 2020).

School administrators play an important role in supporting multimedia integration. Their support includes providing resources and training opportunities. Some schools have begun investing in ICT equipment. Others are still in the process of improving infrastructure. Teacher collaboration also contributes to successful implementation. Sharing of resources and strategies helps improve instruction. Despite limitations, many educators are trying to innovate. They are finding ways to make lessons more engaging.

This study aims to understand these local practices. It also seeks to identify areas for improvement (Llego, 2021; Mendoza, 2022).

In the local context, learner engagement remains a major concern in MAPEH 4 instruction. Some learners are highly active, while others show limited participation. This variation may be influenced by teaching strategies used. Multimedia integration may help address this issue. It provides diverse ways of presenting lessons. It also caters to different learning styles. However, its effectiveness depends on proper use. Teachers must be equipped with the necessary skills. Schools must also provide adequate support. This study examines these local realities (Fredricks et al., 2019; Reyes, 2021).

Overall, the integration of multimedia resources in teaching MAPEH 4 was influenced by international trends, national policies, and local conditions. While global studies highlighted its effectiveness, national and local implementation still faced challenges. Understanding its impact on learner engagement was essential. This study sought to provide evidence-based insights. It aimed to contribute to improving teaching practices. It also supported educational innovation in schools. Ultimately, it focused on enhancing learner engagement in MAPEH 4. The findings helped bridge gaps in instruction. They also guided future educational improvements (UNESCO, 2021; Department of Education, 2020).

Research Questions

This study aimed to determine the effect of integrating multimedia resources in teaching Music, Arts, Physical Education, and Health (MAPEH) 4 on learners' engagement in Mangaldan II District, Pangasinan Division II during the school year 2025-2026.

Specifically, it sought to answer the following questions:
1. What is the level of integration of multimedia resources in teaching Music, Arts, Physical Education, and Health (MAPEH) 4 as perceived by the teachers?

2. What is the level of learners' engagement in Music, Arts, Physical Education, and Health (MAPEH) 4 in terms of:
    2.1 Behavioral engagement;
    2.2 Emotional engagement; and
    2.3 Cognitive engagement?

3. Is there a significant difference in the level of integration of multimedia resources in teaching Music, Arts, Physical Education, and Health (MAPEH) 4 when grouped according to teacher-related variables such as teaching experience, training, or ICT competence?

4. Is there a significant relationship between the integration of multimedia resources and learners' behavioral, emotional, and cognitive engagement in Music, Arts, Physical Education, and Health (MAPEH) 4?

5. Based on the findings of the study, what instructional enhancement plan may be proposed to improve the integration of multimedia resources and learners' engagement in Music, Arts, Physical Education, and Health (MAPEH) 4?

METHODOLOGY

Research Design

This study employed a descriptive-correlational research design to determine the integration of multimedia resources in teaching Music, Arts, Physical Education, and Health (MAPEH) 4 and its effect on learners' engagement. This design was considered appropriate because it described the existing conditions of instructional practices while also examining the relationship between variables without manipulating them.

The descriptive aspect of the design was used to identify and describe the level of integration of multimedia resources in MAPEH 4 instruction as practiced by teachers in Mangaldan District II, Pangasinan Division II. It also described the level of learners' engagement in terms of behavioral, emotional, and cognitive dimensions. This allowed the researcher to present a clear picture of the current classroom situation.

On the other hand, the correlational aspect of the design was used to determine whether a significant relationship existed between multimedia integration and learners' engagement. It helped the researcher understand if changes in the level of multimedia use were associated with changes in learner participation, interest, and involvement during MAPEH 4 lessons.

This design was appropriate for the study because it did not require experimental manipulation or control groups. Instead, it relied on naturally occurring classroom practices, making the findings more reflective of real educational settings. Teachers continued their usual instructional methods while data were gathered based on their responses and classroom experiences.

Through this research design, the study was able to gather quantitative data that were analyzed using appropriate statistical tools. These data provided evidence on both the extent of multimedia integration and its relationship with learners' engagement. The design allowed for a more objective interpretation of the relationship between the variables.

Overall, the descriptive-correlational research design provided a suitable framework for understanding how multimedia resources are being used in MAPEH 4 instruction and how these practices influence learners' engagement in actual classroom environments.

Instrumentation and Data Collection

This study utilized a researcher-made questionnaire as the primary instrument for gathering data on the integration of multimedia resources in teaching Music, Arts,

Physical Education, and Health (MAPEH) 4 and its effect on learners' engagement. The questionnaire was carefully designed based on related literature, studies, and the objectives of the research. It was divided into two main parts: one for teachers and another for learners.

The teachers' questionnaire focused on the extent of multimedia integration in MAPEH 4 instruction. It included items that assessed the use of multimedia resources such as videos, presentations, audio materials, animations, and other digital tools in lesson delivery. The learners' questionnaire, on the other hand, measured their level of engagement in terms of behavioral, emotional, and cognitive dimensions during MAPEH 4 lessons.

Before the actual data gathering, the instrument underwent validation to ensure clarity, relevance, and appropriateness of the items. It was reviewed by experts in the field of education and research to establish content validity. Suggestions and corrections were incorporated to improve the quality and reliability of the questionnaire.

A pilot testing was also conducted to determine the reliability of the instrument. The responses from the pilot test were analyzed using appropriate statistical methods to ensure consistency of the items. Necessary revisions were made based on the results to further enhance the instrument's reliability.

After validation and reliability testing, the researcher secured permission from the Schools Division Office of Pangasinan II and the school heads of the selected schools in Mangaldan District II. Approval was obtained to conduct the study among Grade 4 teachers and learners.

The actual data collection began with the distribution of questionnaires to the teacher-respondents and learner-respondents. Clear instructions were provided to ensure that the respondents fully understood each item. Assistance was given when necessary, especially for younger learners, to ensure accurate responses.

The completed questionnaires were collected, checked for completeness, and organized for analysis. The data gathered were then tallied, encoded, and statistically treated to answer the research questions. Confidentiality of responses was strictly observed throughout the process.

Overall, the instrumentation and data collection procedures were carefully planned and systematically implemented to ensure the validity, reliability, and accuracy of the data gathered for the study.

Tools for Data Analysis

The data gathered in this study were analyzed using appropriate statistical tools to answer each statement of the problem. All responses were encoded, tabulated, and processed using statistical software to ensure accuracy and reliability of results.

To determine the level of integration of multimedia resources in teaching Music, Arts, Physical Education, and Health (MAPEH) 4, weighted mean was used. The weighted mean was used to describe the average level of multimedia integration.

To determine the level of learners' engagement in terms of behavioral, emotional, and cognitive engagement, weighted mean was also used. The weighted mean described the overall level of engagement.

To determine if there was a significant difference in the level of multimedia integration when grouped according to teacher-related variables such as teaching experience, training, and ICT competence, t-test and One-Way ANOVA were also used. These statistical tools helped identify whether differences in teacher profiles influenced the extent of multimedia integration in MAPEH 4 instruction.

To determine the significant relationship between the integration of multimedia resources and learners' engagement in MAPEH 4, Pearson Product-Moment Correlation Coefficient (Pearson r) was used. This statistical tool measured the strength and direction of the relationship between the two variables.

For the development of the proposed instructional enhancement plan, the results from the descriptive and inferential statistics were used as the primary basis. No specific statistical tool was applied, but the findings from SOP 1 to SOP 4 served as the foundation for designing the enhancement plan.

RESULTS

Table 1
Level of Multimedia Integration
(N=53)

Indicators	Weighted Mean	Descriptive Equivalent
A. Video Materials		
Educational videos in lessons	4.25	Often
Video demonstrations for PE activities	4.10	Often
Videos for Music and Arts understanding	3.85	Often
Health-related video usage	4.05	Often
Average Weighted Mean	**4.06**	**Often**
B. Audio Materials		
Audio recordings for music concepts	3.70	Often
Sound clips for listening skills	3.45	Sometimes
Music recordings for engagement	3.60	Often
Audio materials for interaction	3.35	Sometimes
Average Weighted Mean	**3.53**	**Often**
C. Visual Presentations		
PowerPoint presentations	4.30	Often
Images and graphics in Arts	4.15	Often

Visual aids for Health lessons	4.05	Often
Slide presentations for lessons	4.20	Often
Average Weighted Mean	**4.18**	**Often**
D. Interactive / ICT Tools		
Digital applications/software	3.10	Sometimes
Learner interaction with multimedia activities	3.25	Sometimes
Internet-based resources	2.95	Sometimes
ICT tools for engagement	3.05	Sometimes
Average Weighted Mean	**3.09**	**Sometimes**
E. Overall Integration Practices		
Consistent multimedia integration	4.05	Often
Selection of appropriate materials	4.10	Often
Multimedia for participation	3.95	Often
Teaching effectiveness through multimedia	4.20	Often
Average Weighted Mean	**4.08**	**Often**

Table 2.1
Behavioral Engagement
(N=53)

Indicators	Weighted Mean	Descriptive Equivalent
1. Active participation in MAPEH 4 activities	4.15	Often
2. Completion of assigned tasks on time	3.85	Often
3. Attention during lessons	4.10	Often
4. Participation in group activities	4.20	Often
5. Following instructions	4.25	Often
6. Participation in PE activities	4.05	Often
7. Engagement in Music and Arts activities	4.00	Often
8. Asking questions when needed	3.70	Often
9. Cooperation with classmates	4.18	Often
10. Effort in performing tasks	4.12	Often
Average Weighted Mean	**4.06**	**Often**

Table 2.2
Emotional Engagement
(N=53)

Indicators	Weighted Mean	Descriptive Equivalent
1. Enjoyment in MAPEH 4 classes	4.45	Always
2. Happiness during activities	4.30	Always
3. Motivation to participate	4.20	Often
4. Interest in lessons	4.25	Always
5. Excitement when multimedia is used	4.50	Always

6. Confidence during activities	3.95	Often
7. Enjoyment in group work	4.10	Often
8. Feeling inspired during lessons	4.15	Often
9. Comfort in expressing ideas	3.90	Often
10. Positive attitude toward MAPEH 4	4.35	Always
Average Weighted Mean	**4.21**	**Often**

Table 2.3
Cognitive Engagement
(N=53)

Indicators	Weighted Mean	Verbal Interpretation
1. Understanding lessons deeply	4.10	Often
2. Thinking carefully when answering	3.95	Often
3. Use of thinking skills in tasks	3.85	Often
4. Connecting lessons to prior knowledge	3.70	Often
5. Focus during discussions	4.05	Often
6. Solving problems independently	3.75	Often
7. Remembering lessons	4.00	Often
8. Reflecting on lessons	3.60	Sometimes
9. Applying lessons in real life	3.65	Sometimes
10. Effort in understanding difficult lessons	3.90	Often
Average Weighted Mean	**3.86**	**Often**

Table 3
Significant Difference in Multimedia Integration
(N=53)

Teacher Variables	Test Used	p-value	Decision	Interpretation
Teaching Experience	ANOVA	0.118	Not Significant	No significant difference
ICT Training	t-test	0.032	Significant	Significant difference
ICT Competence	ANOVA	0.021	Significant	Significant difference

Table 4
Relationship between Multimedia Integration and Learners' Engagement
(N=53)

Variables	Pearson r	p-value	Strength of Relationship	Decision
Multimedia Integration vs Learners' Engagement	0.68	0.000	Moderate to Strong Positive Relationship	Significant

DISCUSSION

Table 1 presents the level of multimedia integration in teaching MAPEH, with an overall interpretation of “Often.” Among the indicators, visual presentations obtained the highest average weighted mean (4.18), showing that teachers frequently used PowerPoint presentations, images, graphics, and visual aids to support instruction. Video materials also received a high mean (4.06), indicating that educational and demonstration videos were commonly utilized in lessons. These findings support the Cognitive Theory of Multimedia Learning, which explains that combining visual and auditory materials enhances learners’ understanding and engagement (Mayer, 2009).

Audio materials gained an average weighted mean of 3.53, interpreted as “Often,” although some indicators such as sound clips and audio materials for interaction were only rated “Sometimes.” Meanwhile, interactive and ICT tools obtained the lowest mean (3.09, “Sometimes”), suggesting limited use of digital applications, internet-based resources, and multimedia activities, possibly due to limited access to technology and internet connectivity.

Overall integration practices obtained a mean of 4.08 (“Often”), indicating that teachers consistently selected appropriate multimedia resources to improve participation and teaching effectiveness. The findings imply that multimedia integration is commonly practiced in MAPEH instruction and contributes positively to learner engagement and understanding (Mayer, 2009; Neo & Neo, 2009).

Table 2.1 shows that the learners demonstrated a high level of behavioral engagement in MAPEH 4, with an overall average weighted mean of 4.06, interpreted as “Often.” The highest-rated indicators were following instructions (4.25) and participation in group activities (4.20), indicating that learners were generally active, cooperative, and involved in classroom activities. Active participation in lessons, attention during discussions, and effort in performing tasks were also rated “Often,” showing positive learner involvement in MAPEH instruction.

The findings suggest that learners were consistently engaged in classroom and performance-based activities, particularly in Music, Arts, and Physical Education. This supports the theory of student engagement, which emphasizes that active participation and collaboration contribute to better learning outcomes and classroom interaction (Fredricks et al., 2004). Overall, the results imply that learners were behaviorally engaged in MAPEH classes, which may enhance their motivation and academic performance.

Table 2.2 reveals that learners showed a high level of emotional engagement in MAPEH 4, with an overall average weighted mean of 4.21, interpreted as “Often.” The highest-rated indicators were excitement when multimedia is used (4.50) and enjoyment in MAPEH classes (4.45), both interpreted as “Always.” This indicates that learners felt happy, motivated, and interested during lessons, especially when multimedia resources were integrated into instruction.

Other indicators such as positive attitude toward MAPEH, happiness during activities, and interest in lessons were also rated highly, showing that learners developed positive emotions and enthusiasm toward classroom activities. These findings support the idea that engaging and interactive learning environments increase learners' motivation and emotional connection to learning (Fredricks et al., 2004).

Overall, the results suggest that multimedia integration contributed positively to learners' emotional engagement by making lessons more enjoyable, interactive, and meaningful. Table 2.3 indicates that learners demonstrated a high level of cognitive engagement in MAPEH 4, with an overall average weighted mean of 3.86, interpreted as "Often." The highest-rated indicators were understanding lessons deeply (4.10) and focus during discussions (4.05), showing that learners were mentally attentive and actively processing the lessons. Learners also often exerted effort in understanding difficult topics and remembering lessons discussed in class.

However, reflecting on lessons (3.60) and applying lessons in real life (3.65) were only interpreted as "Sometimes," suggesting that learners may still need more opportunities to connect learning experiences to practical situations and deeper reflection.

The findings imply that learners were generally engaged in thinking, understanding, and problem-solving during MAPEH instruction. This supports cognitive engagement theory, which emphasizes that meaningful learning occurs when learners actively process information and apply higher-order thinking skills (Fredricks et al., 2004).

Table 3 presents the significant difference in multimedia integration when grouped according to teacher variables. The results showed that teaching experience had a p-value of 0.118, which is greater than the 0.05 level of significance; therefore, the difference was not significant. This indicates that multimedia integration practices did not vary according to teachers' years of teaching experience.

On the other hand, ICT training ($p = 0.032$) and ICT competence ($p = 0.021$) showed significant differences since their p-values were lower than 0.05. This means that teachers who had ICT training and higher ICT competence demonstrated better multimedia integration practices in teaching. The findings suggest that teachers' technological knowledge and skills play an important role in the effective use of multimedia resources in instruction.

These results support the Technology Acceptance Model, which explains that users are more likely to utilize technology effectively when they possess sufficient knowledge, skills, and confidence in using it (Davis, 1989).

Table 4 shows the relationship between multimedia integration and learners' engagement in MAPEH 4. The computed Pearson r value of 0.68 indicates a moderate to strong positive relationship between the two variables. The p-value of 0.000 is lower than the 0.05 level of significance, leading to the rejection of the null hypothesis. Therefore, there is a significant relationship between multimedia integration and learners' engagement.

The findings imply that as the level of multimedia integration increases, learners' engagement in MAPEH 4 also improves. The use of videos, visual presentations, audio materials, and interactive tools may help learners become more active, interested, and motivated during classroom activities. This supports the Cognitive Theory of Multimedia Learning, which explains that multimedia resources enhance learners' understanding and participation by combining visual and auditory elements in instruction (Mayer, 2009).

Conclusions

Based on the findings of the study, it can be concluded that teachers are already integrating multimedia resources in teaching MAPEH 4; however, the level of integration is still developing. The use of videos, visual presentations, and other basic multimedia materials is evident in classroom instruction, but more advanced ICT tools and interactive technologies are not yet fully utilized. This indicates that while multimedia integration is present, there is still a need to strengthen and expand its use to further support effective teaching and meaningful learning experiences.

The study also revealed that learners are actively and emotionally engaged during MAPEH 4 classes. They participate in activities, show interest in lessons, and enjoy the learning process. However, their cognitive engagement appears to be less developed, suggesting that learners still need more opportunities to think critically, reflect deeply, and apply their learning to real-life situations. This highlights the importance of designing activities that not only entertain and motivate learners but also challenge their thinking and understanding.

Furthermore, the findings showed that teaching experience alone does not significantly determine the level of multimedia integration among teachers. Instead, ICT training and technological competence have a greater influence on how effectively multimedia resources are utilized in instruction. Teachers who possess stronger ICT skills and have undergone relevant training are more confident and capable of integrating multimedia tools into their lessons. This emphasizes the importance of continuous professional development programs focused on technology integration in education.

Lastly, the study confirmed that multimedia integration plays a significant role in enhancing learners' engagement in MAPEH 4. The use of videos, visuals, audio materials, and other multimedia resources makes lessons more interactive, interesting, and meaningful for learners. As a result, students become more motivated to participate, remain attentive, and actively engage in classroom activities. Therefore, effective multimedia integration can greatly contribute to improving the overall teaching and learning experience in MAPEH 4 classes.

Recommendations

Based on the findings and conclusions of the study, it is recommended that teachers be provided with additional training and support in the use of interactive ICT tools to strengthen multimedia integration in teaching. Schools may improve access to digital

resources and internet connectivity to encourage the consistent use of multimedia in classroom instruction. Continuous professional development programs focusing on technology integration should also be enhanced to improve teachers' competence and confidence in using multimedia resources effectively. Furthermore, teachers are encouraged to design more activities that promote higher-order thinking skills such as problem-solving, reflection, and application tasks. Integrating multimedia with interactive and inquiry-based teaching strategies can help deepen learners' understanding and improve their cognitive engagement through varied and challenging learning experiences.

In addition, schools should prioritize ICT-related training programs by conducting regular workshops, seminars, and hands-on activities that enhance teachers' skills in using multimedia tools. Establishing support systems such as mentoring programs and technical assistance can also help teachers continuously improve their technological competencies. Lastly, teachers should continue and further strengthen the use of multimedia in their teaching practices, while schools provide adequate resources and training opportunities to support these efforts. Exploring more interactive and innovative multimedia strategies is also recommended to further enhance learners' engagement, particularly in developing their critical thinking skills.

Compliance with Ethical Standards

Ethical considerations were strictly observed throughout the conduct of this study to ensure the protection, dignity, and rights of all participants. Prior to the study, permission was secured from the Schools Division Office of Pangasinan II and the respective school heads of Mangaldan District II. Informed consent from teacher-respondents and appropriate assent and consent procedures for learner-respondents were also obtained. Participation was voluntary, and respondents were informed of their right to withdraw from the study at any time without penalty. Confidentiality and anonymity were maintained by using codes instead of participants' names. All information gathered was treated with utmost confidentiality, securely stored, and accessed only by the researcher for academic and research purposes. The study ensured that no harm or discomfort was caused to the participants. The questionnaires were carefully designed to avoid sensitive issues and did not disrupt regular classroom activities. Honesty and integrity were observed throughout the research process, and all data were accurately presented without fabrication or misrepresentation. Overall, the study adhered to accepted ethical research standards to ensure the credibility of the findings and the welfare of all participants involved.

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