Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

Use of Multimedia-Assisted Instruction and its Effectiveness in Promoting Learner Engagement among Elementary Teachers in Castillejos District

Jastine Anne Q. Mendoza[1], Michael G. Albino[2]
[1]*Graduate School Student, President Ramon Magsaysay State University, Iba, Zambales*
[2]*Graduate School Lecturer, President Ramon Magsaysay State University, Iba, Zambales*
[1]mendozajastineanne@gmail.com
[2]malbino@prmsu.edu.ph

This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract: The integration of technology in education has enhanced teaching practices and learner participation in classrooms. This study examined the use of multimedia-assisted instruction and its effectiveness in promoting learner engagement among public elementary school teachers in Castillejos District, Zambales. Specifically, it determined the extent of multimedia-assisted instruction use and its effectiveness in behavioral, emotional, cognitive, and social engagement among learners. The study is significant in providing insights into the role of multimedia tools in improving teaching and learning processes. A descriptive–quantitative research design was utilized using a structured survey questionnaire administered to 165 randomly selected public elementary school teachers. Data were analyzed using frequency, weighted mean, standard deviation, Analysis of Variance (ANOVA), and Pearson-r correlation. Findings revealed that teachers highly utilized multimedia-assisted instruction and perceived it as highly effective in promoting learner engagement. No significant differences were found when respondents were grouped according to profile variables. However, a significant positive relationship existed between multimedia-assisted instruction and learner engagement, indicating that effective multimedia integration enhances student participation and involvement in learning. The study concluded that multimedia-assisted instruction is an effective tool in improving learner engagement in elementary education. It is recommended that schools strengthen teacher training on multimedia integration and provide adequate technological resources to support effective instruction.

Keywords: Multimedia-Assisted Instruction, Learner Engagement, Educational Technology, Public Elementary Teachers

Introduction

The rapid advancement of digital technologies has significantly transformed educational practices worldwide, leading to increased adoption of technology-enhanced instructional approaches in various learning environments. Among these innovations, multimedia-assisted

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

instruction (MAI) has emerged as an effective pedagogical strategy that integrates text, audio, images, animations, videos, and interactive elements to facilitate meaningful learning experiences. The integration of multimedia in teaching supports the goals of 21st-century education, which emphasize learner-centered instruction, active participation, and the development of higher-order thinking skills. As educational institutions continue to embrace digital transformation, the effective utilization of multimedia-assisted instruction has become increasingly important in improving teaching effectiveness and enhancing learner outcomes.

The theoretical foundation of multimedia-assisted instruction is primarily grounded in Mayer's Cognitive Theory of Multimedia Learning, which posits that learners process information more effectively when verbal and visual information are presented simultaneously through dual cognitive channels (Mayer, 2021). According to this theory, appropriately designed multimedia materials can improve comprehension, retention, and knowledge transfer by facilitating meaningful cognitive processing. Consequently, multimedia-assisted instruction has gained substantial attention among educators and researchers as a valuable tool for promoting effective learning experiences.

Recent studies have highlighted the positive contributions of multimedia-assisted instruction in enhancing student motivation, participation, academic achievement, and overall learning experiences. Multimedia-rich learning environments encourage active engagement by allowing learners to interact with instructional content in diverse and meaningful ways. Galang (2025) emphasized that multimedia-assisted instruction promotes interactive and student-centered learning experiences that improve learner participation and understanding. Similarly, the incorporation of interactive multimedia features such as simulations, educational games, videos, and embedded assessments has been found to encourage deeper cognitive processing and greater learner engagement (Li et al., 2024). These instructional approaches not only increase learner motivation but also foster critical thinking and knowledge construction.

Despite its recognized benefits, the effectiveness of multimedia-assisted instruction largely depends on several factors, including accessibility and availability of technological resources, pedagogical integration, interactivity, and instructional quality. Accessibility and availability remain critical considerations, particularly in developing countries where disparities in

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

technological infrastructure continue to exist. Oyinkanola et al. (2023) noted that limited access to digital tools, internet connectivity, and educational technologies remains a significant challenge to effective multimedia integration in many educational settings. Although the Philippine educational system has implemented initiatives to strengthen digital learning environments, challenges associated with resource availability and technological support continue to affect classroom implementation.

Pedagogical integration also plays a crucial role in determining the success of multimedia-assisted instruction. Effective integration requires teachers to align multimedia resources with instructional objectives and learning outcomes rather than merely using technology as a supplementary tool. Research indicates that teachers' digital competence, technological knowledge, and instructional design skills significantly influence the effectiveness of multimedia implementation in classrooms (Loureiro et al., 2024). When strategically integrated into teaching and learning processes, multimedia-assisted instruction can facilitate active learning, increase student participation, and improve academic performance.

Learner engagement is widely recognized as a critical factor influencing educational success and learning achievement. Contemporary literature conceptualizes learner engagement as a multidimensional construct encompassing behavioural, emotional, cognitive, and social dimensions. Behavioural engagement refers to learners' participation in academic activities, emotional engagement reflects their attitudes and feelings toward learning, cognitive engagement involves investment in learning processes and self-regulation, while social engagement emphasizes meaningful interactions with peers and teachers. Multimedia-assisted instruction has the potential to support these dimensions by creating interactive, collaborative, and engaging learning environments that encourage active learner participation (Zhou, 2023).

Although numerous studies have examined the relationship between multimedia-assisted instruction and academic performance, limited empirical evidence exists regarding its effectiveness in promoting the multidimensional aspects of learner engagement, particularly within the Philippine elementary education context. Furthermore, local studies examining the utilization of multimedia-assisted instruction across dimensions such as accessibility and availability, pedagogical integration, interactivity and engagement, and learning enhancement

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

remain scarce. This gap in the literature underscores the need for context-specific investigations that can provide evidence-based insights into the effectiveness of multimedia-assisted instruction in fostering learner engagement among elementary learners.

In response to these research gaps, this study examined the use of multimedia-assisted instruction and its effectiveness in promoting learner engagement among public elementary school teachers in Castillejos District, Zambales. Specifically, the study investigated the extent of multimedia-assisted instruction utilization across its major dimensions and assessed its effectiveness in fostering behavioral, emotional, cognitive, and social engagement among learners. The findings are expected to contribute to the growing body of literature on educational technology integration and provide practical implications for teachers, school administrators, policymakers, and future researchers seeking to strengthen learner engagement through effective multimedia-assisted instructional practices.

Methods

This study employed a descriptive-quantitative research design using the survey method to examine the use of multimedia-assisted instruction (MAI) and its effectiveness in promoting learner engagement among public elementary school teachers in Castillejos District, Zambales. The respondents consisted of 165 teachers randomly selected from a population of 287 public elementary school teachers across seventeen elementary schools in the district. The sample size was determined using Slovin's formula with a 5% margin of error, while simple random sampling was employed to ensure equal representation of participants. The demographic profile of the teacher-respondents was shown in Table 1.

TABLE I

Demographic Profile of the Teacher-Respondents

Profile Variables		**Frequency (f)**	**Percentage (%)**
Age	56-60	4	2.4
	51-55	24	14.5
	46-50	19	11.5
	41-45	35	21.2
	36-40	39	23.6

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

	31-35	33	20.0
	26-30	11	6.7
Sex	Male	48	29.1
	Female	117	70.9
Highest Educational Attainment	Bachelor's degree holder	33	20.0
	Master's degree holder	77	46.7
	earned Masters units	43	26.1
	Doctorate degree holder	12	7.3
Years in teaching	30 years above	8	4.8
	25-29 years	23	13.9
	15-19 years	50	30.3
	10-14 years	12	7.3
	5-9 years	38	23.0
	2-4 years	27	16.4
	1 year below	7	4.2
Position/Designation	Teacher I	25	15.2
	Teacher II	20	12.1
	Teacher III	34	20.6
	Teacher IV	39	23.6
	Teacher V	14	8.5
	Teacher VI	13	7.9
	Master Teacher I	20	12.1
	Total	**165**	**100.0**

Data were collected using a structured survey questionnaire adapted and modified from established studies. The instrument measured the use of multimedia-assisted instruction in terms of accessibility and availability, pedagogical integration, interactivity and engagement, and learning enhancement based on the works of Abdulrahaman et al. (2020), Doherty et al. (2022), and Yueh et al. (2012). Learner engagement was assessed in terms of behavioral, emotional, cognitive, and social dimensions using indicators adapted from Fredricks et al. (2004), Henrie et al. (2015), and Wallace-Spurgin (2019). Content validity was established through expert evaluation, while pilot testing among 20 non-participating teachers yielded a Cronbach's alpha coefficient of .914, indicating excellent reliability.

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

Prior to data collection, permission was secured from the Schools Division Superintendent and concerned school authorities. The questionnaires were personally distributed to the respondents, and participation was voluntary. Ethical principles, including confidentiality, anonymity, and compliance with the Data Privacy Act of 2012, were strictly observed throughout the study.

The collected data were analysed using descriptive and inferential statistics. Frequency counts and percentages were used to describe the respondents' profile, while weighted mean and standard deviation determined the level of MAI utilization and learner engagement. Analysis of Variance (ANOVA) was employed to test significant differences across profile variables, and Pearson product-moment correlation coefficient (Pearson's r) was used to determine the relationship between multimedia-assisted instruction and learner engagement. All statistical tests were conducted at a 0.05 level of significance.

Results and Discussions

This study aimed to determine the use of multimedia-assisted instruction (MAI) and its effectiveness in promoting learner engagement among public elementary school teachers in Castillejos District, Zambales. Specifically, it sought to describe the profile of the teacher-respondents; assess the level of MAI utilization in terms of accessibility and availability, pedagogical integration, interactivity and engagement, and learning enhancement; evaluate its effectiveness in promoting behavioural, emotional, cognitive, and social engagement among learners; determine whether significant differences exist in the use and effectiveness of MAI when respondents are grouped according to their profile characteristics; and examine the relationship between multimedia-assisted instruction and learner engagement.

TABLE II

Teachers' Use of Multimedia-Assisted Instruction

	Dimensions	Overall Weighted Mean	SD	Descriptive Equivalent	Rank
1	Accessibility and Availability	3.63	.617	Strongly Agree	4
2	Pedagogical Integration	3.68	.532	Strongly Agree	3
3	Interactivity and Engagement	3.73	.475	Strongly Agree	1.5
4	Learning Enhancement	3.73	.460	Strongly Agree	1.5
OWM		**3.69**	**.521**	**Strongly Agree**	

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

Legend: 3.25-4.00 (Strongly Agree); 2.50-3.24 (Agree); 1.75-2.49 (Disagree) 1.00-1.74 (Strongly Disagree)

Teacher-respondents strongly agreed that both interactivity and engagement and learning enhancement obtained the highest mean of 3.73 (SD = .475; SD = .460), ranked 1.5, indicating that multimedia-assisted instruction is most evident in promoting active learner involvement and improving learning outcomes. Following this, they also strongly agreed that pedagogical integration of multimedia is evident in their teaching practices, with a mean of 3.68 (SD = .532), ranked 3rd. On the other hand, teachers still strongly agreed that accessibility and availability of multimedia resources are present, which received the lowest mean of 3.63 (SD = .617), ranked 4th. The composite or overall weighted mean of 3.69 (SD = .521), interpreted as "Strongly Agree," suggests that, in general, teachers demonstrate a high level of utilization of multimedia-assisted instruction across all dimensions.

The present findings are supported by local studies highlighting the effectiveness of multimedia in promoting engagement and learning outcomes. Hsu et al. (2022) emphasized that multimedia integration significantly enhances student engagement and motivation, which aligns with the present finding where interactivity and engagement ranked highest.

Similarly, Emma (2025) found that technology integration contributes positively to learners' academic performance, supporting the high ranking of learning enhancement in the current study. This indicates that multimedia use has a direct impact on improving learning outcomes. Furthermore, the strong rating of pedagogical integration is consistent with the findings of Kuş (2025), who reported that teachers are increasingly able to integrate ICT tools effectively into their instructional practices, aligning them with curriculum standards and teaching objectives.

However, the relatively lower ranking of accessibility and availability is supported by findings from Sabah and Altalbe (2022), which noted that disparities in ICT resources and infrastructure remain a challenge in Philippine schools. This affects the consistency of multimedia integration across different educational settings. In addition, Oducado and Estoque (2021) highlighted that while teachers demonstrate readiness and adaptability in using technology, limitations in access to devices and stable internet connectivity can hinder optimal implementation. This corroborates the present finding that accessibility, although positive, remains the weakest among the dimensions.

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

TABLE III

Effectiveness in Promoting Learner Engagement

	Dimensions	Overall Weighted Mean	SD	Descriptive Equivalent	Rank
1	Behavioral Engagement	3.70	.476	Strongly Agree	2.5
2	Emotional Engagement	3.73	.475	Strongly Agree	1
3	Cognitive Engagement	3.70	.471	Strongly Agree	2.5
4	Social Engagement	3.69	.478	Strongly Agree	4
OWM		**3.71**	**.475**	**Strongly Agree**	

Legend: 3.25-4.00 (Strongly Agree); 2.50-3.24 (Agree); 1.75-2.49 (Disagree) 1.00-1.74 (Strongly Disagree)

Teacher-respondents strongly agreed that emotional engagement obtained the highest mean of 3.73 (SD = .475), ranked 1st, indicating that multimedia-assisted instruction is most effective in enhancing learners' emotional involvement in the learning process. Following this, they also strongly agreed that both behavioural engagement and cognitive engagement obtained a mean of 3.70 (SD = .476; SD = .471), ranked 2.5, suggesting that multimedia also effectively promotes active participation and higher-order thinking among learners. On the other hand, teachers still strongly agreed that social engagement was evident, which received the lowest mean of 3.69 (SD = .478), ranked 4th. The composite or overall weighted mean of 3.71 (SD = .475), interpreted as "Strongly Agree," suggests that, in general, multimedia-assisted instruction is highly effective in promoting learner engagement across all dimensions.

The present findings are supported by local studies emphasizing the strong influence of multimedia on learners' emotional engagement. Chakraborty (2019) found that multimedia integration enhances learners' motivation, interest, and enjoyment, which aligns with the present finding where emotional engagement ranked highest.

Similarly, Kholil (2025) reported that ICT integration contributes to increased learner participation and cognitive engagement by providing interactive and meaningful learning experiences. This supports the high rankings of both behavioral and cognitive engagement in the present study. Furthermore, Camacho Vega and Delgadillo-Ramos (2023) highlighted that technology-enhanced instruction positively affects multiple dimensions of engagement, including behavioral and cognitive aspects, by encouraging active participation and critical thinking. This corroborates the strong ratings across these dimensions.

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

However, the relatively lower ranking of social engagement is consistent with findings from Olasunkanmi and Salubi (2024) who noted that while technology facilitates interaction, effective social engagement requires structured collaboration and teacher facilitation to be fully realized.

In addition, Vali (2023) emphasizes that while ICT tools support learner engagement, the development of collaborative and social skills depends on pedagogical strategies that promote interaction and teamwork. This supports the present finding that social engagement, although high, is comparatively lower than other dimensions. Conversely, Brugliera (2024) found that integrating multimedia with cooperative learning strategies significantly enhances social engagement, suggesting that the effectiveness of multimedia in this domain depends on intentional instructional design.

TABLE IV

Test of Relationship Between Teacher's Use of Multimedia-Assisted Instruction and its Effectiveness in Promoting Learner Engagement

Sources of Correlations		**Teacher's Use of Multimedia-Assisted Instruction**	**Effectiveness in Promoting Learner Engagement**	**Decision/ Interpretation**
Teacher's Use of Multimedia-Assisted Instruction	Pearson Correlation	1	.676**	**High Positive Correlation, Significant relationship (Reject H_0)**
	Sig. (2-tailed)		.000	
	N	165	165	
Effectiveness in Promoting Learner Engagement	Pearson Correlation	.676**	1	
	Sig. (2-tailed)	.000		
	N	165	165	
**. Correlation is significant at the 0.01 level (2-tailed).				

The results of the Pearson Product-Moment Correlation revealed that the computed R-value of 0.676 indicates a high positive correlation between teachers' use of multimedia-assisted instruction and its effectiveness in promoting learner engagement. This suggests that as the use of multimedia-assisted instruction increases, the level of learner engagement also tends to increase. Furthermore, the computed p-value of 0.000 is less than the 0.01 level of significance, indicating that the relationship is statistically significant.

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

The findings are supported by local studies emphasizing the strong relationship between multimedia use and learner engagement. Caballes (2025) found that multimedia integration significantly enhances student engagement by making lessons more interactive and stimulating, which aligns with the high positive correlation observed in the present study. Similarly, Pamuji (2025) reported that ICT integration in teaching leads to increased learner participation, motivation, and interaction, supporting the significant relationship between multimedia use and engagement.

Furthermore, Almerino et al. (2020) highlighted that technology-enhanced instruction positively influences learners' academic engagement by promoting active involvement and deeper learning. This corroborates the strong association identified in the present findings. In addition, Mccall (2025) emphasized that integrating ICT in instruction enhances learner engagement and improves overall learning experiences, supporting the significant relationship found in the study.

Conversely, Micheal and Edwards- Fapohunda (2024) noted that while multimedia can enhance engagement, its effectiveness depends on proper implementation and teacher competence. This suggests that the strength of the relationship may vary depending on how multimedia is utilized in the classroom.

TABLE V

Proposed Training Program Focused on Enhancing the Use of Multimedia-assisted Instruction among Elementary Teachers

Component	Objectives	Content/ Focus	Activities/ Strategies	Expected Outputs	Time Frame	Monitoring & Evaluation	DepEd Policy Alignment
Day 1: Foundations of Multimedia -Assisted Instruction	Understand principles of multimedia learning and alignment with curriculum	- Multimedia Learning Principles - Alignment with MELCs - Learner Engagement	Lecture-discussion, case analysis, guided planning	Revised lesson objectives with multimedia integration	Day 1	Output checking; participation rubric	DepEd Order 42, s. 2016

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

		Framework					
Day 2: Tools and Instructional Design	Develop skills in using multimedia tools for instruction and assessment	- Interactive tools (Kahoot, Quizziz) - Video-based instruction - Multimedia-based assessment	Hands-on workshop, collaborative lesson design	Multimedia-integrated lesson plan	Day 2	Performance-based assessment	BE-LCP (ICT Integration)
Day 3: Advanced Integration and Demonstration	Apply multimedia for higher-order thinking and engagement	- HOTS integration - Collaborative learning strategies - Inclusive multimedia use	Microteaching, peer evaluation, feedback sessions	Demonstration teaching output	Day 3	Rubric-based evaluation	PPST Domains 1 & 4
Post-Training Application	Apply learned skills in actual classroom setting	Classroom implementation of multimedia-assisted lessons	Teaching implementation, documentation (video/portfolio)	Recorded teaching and lesson artifacts	1 Month	Classroom observation tool	PPST; RPMS
Coaching & Mentoring (LAC Sessions)	Provide continuous support and improve practice	Sharing of best practices; troubleshooting challenges	LAC sessions, peer mentoring, coaching	Improved instructional practices	Within 1 Month	LAC monitoring reports	DepEd Order 35, s. 2016
Evaluation Phase	Assess effectiveness of training program	Reflection on teaching practices and learner engagement	Reflection paper, evaluation forms, feedback session	Evaluation report and recommendations	Post-Implementation	Evaluation rubric and reflection analysis	RPMS; Continuous Improvement
Sustainability Plan	Ensure long-term implementation and	- ICT-integrated LAC - Resource	Continuous training, sharing sessions,	Sustained multimedia integration	Ongoing	Monitoring of LAC and	BE-LCP; MATATAG

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

	improvement	repository - Peer mentoring system	school-based INSET	practices		outputs	Agenda

The proposed training program is grounded on the key findings of the study which revealed that teachers demonstrate a high level of utilization of multimedia-assisted instruction, yet formal training on its pedagogical integration remains comparatively limited. This indicates that while teachers are already using multimedia tools, their application may not always be strategically aligned with instructional goals, learner needs, and higher-order thinking processes.

Moreover, the results established a significantly positive relationship between teachers' use of multimedia-assisted instruction and the effectiveness in promoting learner engagement. This underscores the critical role of multimedia as a catalyst for enhancing behavioral, emotional, cognitive, and social engagement among learners. However, variations in implementation, particularly in deeper cognitive engagement and collaborative learning suggest that effective use of multimedia requires not only access but also pedagogical competence and intentional instructional design. Additionally, findings on accessibility and training imply that institutional support and professional development opportunities are essential to ensure equitable and effective integration of multimedia in teaching. While teachers are capable and adaptive, the absence of structured training may limit the full potential of multimedia-assisted instruction in improving learning outcomes.

In alignment with the thrust of the Department of Education to promote quality teaching, digital transformation, and continuous professional development, this training program is proposed to bridge the gap between usage and effective pedagogical integration. Specifically, it aims to equip teachers with the necessary competencies to design engaging, learner-centered, and technology-enhanced instruction that maximizes the benefits of multimedia in the classroom.

The program is structured as a multi-phase professional development model, consisting of a three-day intensive training followed by a one-month application and coaching phase. This design reflects best practices in teacher professional development, which emphasize not only knowledge acquisition but also guided practice, feedback, and sustained implementation. The

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

inclusion of a post-training phase ensures that learning is transferred from theory to actual classroom practice, thereby addressing the common limitation of one-shot training sessions.

The first phase of the program focuses on establishing a strong theoretical and pedagogical foundation. Teachers are introduced to the principles of multimedia learning and their alignment with curriculum standards and Most Essential Learning Competencies (MELCs). This is crucial because effective multimedia integration is not merely about using digital tools, but about ensuring that these tools are instructionally aligned, purposeful, and learner centered. By grounding teachers in these principles, the program ensures that multimedia use contributes meaningfully to achieving learning objectives.

The second phase emphasizes technical and instructional skill development. Teachers are provided with hands-on experience using various multimedia tools and platforms that support interactive and engaging instruction. This phase directly addresses the need to enhance teachers' capability to design multimedia-supported lessons, assessments, and activities. The integration of collaborative workshop strategies also promotes peer learning, allowing teachers to share practices and co-construct knowledge. This is particularly important in fostering a community of practice within the school context.

The third phase advances toward higher-level pedagogical integration, focusing on the use of multimedia to promote higher-order thinking skills (HOTS), collaborative learning, and inclusive instruction. The inclusion of microteaching and demonstration lessons provides teachers with the opportunity to apply their learning in a simulated environment, receive feedback, and refine their instructional strategies. This phase is critical in bridging the gap between theoretical understanding and practical application, ensuring that teachers can effectively translate multimedia use into improved learner outcomes.

The post-training phase serves as a mechanism for sustained professional growth and accountability. Through classroom implementation, coaching, and Learning Action Cell (LAC) sessions, teachers are supported in refining their practices and addressing contextual challenges such as limited resources or varying learner needs. This phase reinforces the principle that professional development is a continuous process and not a one-time event. It also aligns with

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

existing structures within the Department of Education, particularly the institutionalization of LAC as a platform for collaborative professional learning.

The program also incorporates a comprehensive monitoring and evaluation system, including pre-training needs assessment, performance-based outputs, classroom observations, and reflective practices. This ensures that the effectiveness of the training is systematically measured and that necessary adjustments can be made to improve its implementation. The use of multiple evaluation tools strengthens the validity of the program outcomes and supports evidence-based decision-making.

In terms of expected outcomes, the program aims to enhance teachers' competence in multimedia integration, leading to improved instructional quality and increased learner engagement across behavioral, emotional, cognitive, and social dimensions. This is consistent with the study's finding of a high positive correlation between multimedia use and learner engagement, indicating that strengthening teachers' skills in this area can yield significant educational benefits. Furthermore, by promoting innovative and learner-centered teaching practices, the program contributes to the broader goal of improving learning outcomes in elementary education.

Finally, the sustainability component of the program ensures that its impact extends beyond the initial implementation. Through the integration of LAC sessions, development of resource repositories, and peer mentoring, the program fosters a culture of continuous improvement and collaboration among teachers. This aligns with national education priorities on digital transformation and quality teaching, reinforcing the role of multimedia-assisted instruction as a key driver of 21st-century learning.

In summary, the proposed training program is a comprehensive, systematic, and sustainable intervention that addresses the identified gaps in multimedia integration. It moves beyond basic usage toward strategic, pedagogically grounded application, ensuring that teachers are equipped not only to use multimedia tools, but to use them effectively in enhancing learner engagement and improving educational outcomes.

Conclusion and Recommendations

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

This study revealed that public elementary school teachers in Castillejos District, Zambales demonstrate a high level of utilization of multimedia-assisted instruction, particularly in fostering interactivity, engagement, and learning enhancement. Multimedia-assisted instruction was found to be highly effective in promoting learners' behavioral, emotional, cognitive, and social engagement, indicating its value as a learner-centered instructional approach. The findings further showed that teachers generally exhibit consistent utilization of multimedia-assisted instruction regardless of demographic characteristics, while its effectiveness remains largely uniform across groups. Moreover, the significant positive relationship between multimedia-assisted instruction and learner engagement suggests that greater integration of multimedia in teaching contributes to higher levels of learner participation and involvement. These findings underscore the importance of strengthening teachers' competencies and support systems to maximize the educational benefits of multimedia-assisted instruction in elementary classrooms.

Based on the findings of the study, schools and educational leaders are encouraged to strengthen the integration of multimedia-assisted instruction through continuous professional development programs, provision of adequate technological resources, and support for innovative teaching practices. Teachers may further enhance learner engagement by utilizing a wider range of interactive and learner-centered multimedia tools and strategies. School administrators should implement targeted interventions to address disparities in access to multimedia resources and promote effective pedagogical integration across teaching positions. Furthermore, the proposed training program may be adopted to enhance teachers' multimedia competencies and instructional practices. Future studies may explore additional factors influencing multimedia-assisted instruction and learner engagement using broader populations and mixed-method research designs to extend and validate the present findings.

References

[1] Abakirov, A., Aushakhmanova, B., Asipova, N., Raimkulova, A., & Tkacheva, S. (2025). Integrating multicultural and learner-centred approaches into continuous technological education: Insights from higher education in Central Asia. Social Sciences & Humanities Open, 12, 101975. https://doi.org/https://doi.org/10.1016/j.ssaho.2025.101975

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

[2] Bach, A., & Thiel, F. (2024). Collaborative online learning in higher education—quality of digital interaction and associations with individual and group-related factors. Frontiers in Education, 9. https://doi.org/10.3389/feduc.2024.1356271

[3] Darmawan, A., & Syamsiah, S. (2025). LITERASI DIGITAL BAGI GURU RA DAARUL WAHDAH MELALUI PEMANFAATAN PREZI UNTUK MEDIA PEMBELAJARAN INTERAKTIF. COMMUNITY : Jurnal Pengabdian Kepada Masyarakat, 5, 692–700. https://doi.org/10.51878/community.v5i2.7576

[4] Faisal, I., Ma'ali, R., Supendi, P., Nasir, M., & Yuningsih, Y. (2025). Addie-based development of islamic religious education learning videos for students at madrasah aliyah daarul khair, north lampung. At Turots: Jurnal Pendidikan Islam, 1284–1292. https://doi.org/10.51468/jpi.v7i2.1117

[5] Nwodo, A. (2025). The Impact of Social Media Integration on Cognitive Load and Information Processing in High School Classrooms: A Literature Review. https://doi.org/10.13140/RG.2.2.27608.20489

[6] Oducado, R. M., & Estoque, H. (2021). Online Learning in Nursing Education During the COVID-19 Pandemic: Stress, Satisfaction, and Academic Performance. Journal Of Nursing Practice, 4, 143–153. https://doi.org/10.30994/jnp.v4i2.128

[7] Purnamasari, I., Prasetyo, S., Rofian, R., & Cholifah, N. (2025). Collaborative project model based on culturally responsive teaching approach to strengthening social awareness. Primary: Jurnal Pendidikan Guru Sekolah Dasar, 14, 539–553. https://doi.org/10.33578/jpfkip.v14i4.p539-553

[8] Quynh, N., Hoai, N., & Thu, N. (2021). The roles of student engagement motivations in learning and managing. International Journal for Innovation Education and Research, 9, 223–234. https://doi.org/10.31686/ijier.vol9.iss4.3043

[9] Ullah, W., Khan, F., Babar, S., Sufyan, M., & Khan, S. (2025). Impact of Digital Citizenship on Online Student Behaviour: Evidence from The University of Swabi. Social Sciences & Humanity Research Review, 3. https://doi.org/10.63468/sshrr.275

Received: 2026-02-07
Accepted: 2026-06-10
Published Online: 2026-06-30
DOI: 10.70454/IJMRE.060204

International Journal of Multidisciplinary Research and Explorer (IJMRE)
E-ISSN: 2833-7298, P-ISSN: 2833-7301

[10] Vali, I. (2023). The Impact of Technology on Collaborative Learning. https://doi.org/10.15405/epes.23045.13

[11] Wong, A., Sy, F., & Wong, J. (2025). Examining Digital Competence among Filipino Public School Teachers: Generational Gaps, Institutional Support and ICT Perceptions. Journal of Interdisciplinary Perspectives, Vol 3, 156–163. https://doi.org/10.69569/jip.2025.617

[12] Xiong, X. (2025). Influence of teaching styles of higher education teachers on students' engagement in learning: The mediating role of learning motivation. Education for Chemical Engineers, 51, 87–102. https://doi.org/https://doi.org/10.1016/j.ece.2025.02.005

[13] Yassin, A., Bashir, A., Surjono, H., & Novianto, V. (2025). Design and assessment of effective multimedia-based courseware for student quantitative data analysis. International Journal of Evaluation and Research in Education (IJERE), 14, 3103. https://doi.org/10.11591/ijere.v14i4.32055

[14] Zhou, Y. (2023). Multimedia Learning and Academic Performance. Lecture Notes in Education Psychology and Public Media, 16, 167–172. https://doi.org/10.54254/2753-7048/16/20231140