## **Research Article**

# Effectiveness of Multimedia as an Instructional Material in Tertiary Education: Student Perspectives

<sup>a</sup>Christian Ervhen S. Laguatan, <sup>b</sup>Zyvynx Jhy A. Ariaga, <sup>c</sup>Shein Kenneth B. Sansano, <sup>d</sup>Jan Liam Carl L. Willy, <sup>e</sup>Tyler Reyn O. Alfonso and \*<sup>f</sup>Marilyn L. Balmeo

<sup>a-e</sup>Third Year Bachelor of Secondary Education, Major in Social Studies, Saint Louis University, A. Bonifacio Street, Baguio City, Philippines

<sup>f</sup>Marilyn L. Balmeo, PhD, Faculty, Department of Political and Social Sciences, School of Teacher Education and Liberal Arts, Saint Louis University, A. Bonifacio Street, Baguio City, Philippines \*Corresponding Author Email: mlbalmeo@slu.edu.ph

 Received: April 25, 2025
 Accepted: May 14, 2025
 Published: May 20, 2025

#### Abstract

Multimedia learning has emerged as an effective instructional tool, offering several advantages over traditional methods. It enhances visual appeal, supports diverse learning styles, and improves information retention through interactive experiences. There is a dearth of studies that explores how teachers in tertiary education effectively utilizes multimedia as instructional material as perceived by students. The purpose of this research is to examine the utilization and effectiveness of instructional materials used by tertiary-level teachers as perceived by students. The study made use of a qualitative method using participant observation accompanied by field notes. The population considered was limited to Bachelor of Secondary Education (BSEd) Social Studies students. The study finds that teachers utilize multimedia across various platforms, improving instructional delivery and students find it effectively when used interactively. The effectiveness of multimedia depends on well-structured, interactive content, as poorly designed materials can reduce student engagement. The study recommends that teachers maximize its benefits. Teachers should focus on dynamic instructional design, while schools must address technological barriers to ensure equal access. **Keywords:** Multimedia, Instructional Material, Tertiary Education, Student Perspectives, Teaching, Learning.

## Introduction

Multimedia refers to various tools and applications used in teaching and learning to deliver content effectively through text, images, sound, and interactive elements. An effective multimedia used as an instructional material aims to enhance student engagement, stimulate cognitive processes, and improve learning outcomes by making lessons more dynamic and interactive (Rajagukguk *et al.*, 2023).

In a study by Awogbami *et al.*, (2020), there is a high level of multimedia use among teachers in higher education for the purpose of knowledge transfer and leads to a more engaging learning environment. Vagg *et al.*, (2020) further elaborates that student perception towards multimedia use in tertiary education does not replace the traditional materials but rather compliments it for practical and enhanced learning.

The factors in multimedia utilization as instructional materials identified by Abdulrahaman *et al.*, (2020) in their review on multimedia in the teaching and learning process include the diversity of tools, effectiveness of multimedia components, target audience, technological advancements, accessibility challenges, and evaluation methods. Success depends on how well these tools enhance learning outcomes while addressing digital divide concerns.

Constructivist and pragmatist theories highlight the role of interactive multimedia in fostering active learning and problem-solving. Vygotsky's social constructivism emphasizes that knowledge is co-constructed through peer interaction and guided learning, making multimedia tools effective in collaborative education (Vygotsky, 1978, as cited by Rogti, 2024). Piaget's cognitive theory supports multimedia as a means for learners to assimilate and accommodate new information through experience-based learning. Dewey's pragmatist approach underscores the importance of interaction and continuity in learning, where

multimedia environments provide real-life scenarios for students to engage critically and creatively (Dewey, 1938, as cited by Rogti, 2024). By integrating these theories, multimedia-based education enhances critical thinking, engagement, and cooperative skills.

In tertiary education, adaptive learning management systems (LMS) like Google Classroom have enabled multimedia to be frequently integrated in classroom instruction due to its ability to support a variety of learning materials, including videos, and quizzes (Bondarenko *et al.*, 2020). Multimedia learning has emerged as an effective instructional tool, offering several advantages over traditional methods. It enhances visual appeal, supports diverse learning styles, and improves information retention through interactive experiences (Agisni *et al.*, 2023). There is a dearth of studies that explores how teachers in tertiary education effectively utilizes multimedia as instructional material as perceived by students.

# Objective

The purpose of this research is to examine the utilization and effectiveness of instructional materials used by tertiary-level teachers as perceived by students.

# **Statement of the Problem**

The study aims to examine the utilization and effectiveness of multimedia as an instructional material in tertiary education as perceived by students. Specifically, it sought to answer the following questions:

- 1) What types of multimedia instructional materials are used in the class, and how are they utilized?
- 2) How frequently do teachers integrate multimedia instructional materials?
- 3) How do multimedia instructional materials support or enhance lesson content, and which types are most effective?
- 4) How do students react and participate when different multimedia instructional materials are introduced?
- 5) What challenges and limitations are encountered in using multimedia instructional materials?

# **Materials and Methods**

The study made use of a qualitative method using participant observation. A participant observation is a research design in which researchers immerse themselves in the daily lives and activities of a community while systematically recording detailed field notes to capture behaviors and interactions (Marshall and Rossman, 1989; Schensul *et al.*, 1999; Bernard, 1994, as cited by Kawulich, 2005). The field notes utilized the guide questions for objective observation of areas of interest.

# **Scope and Delimitation**

The study was concerned with examining the utilization and effectiveness of multimedia as an instructional material in tertiary education as perceived by students. The focus was on gaining insights into how multimedia resources are used by tertiary-level teachers and their impact on student learning. The population considered was limited to Bachelor of Secondary Education (BSEd) Social Studies students from the School of Teacher Education and Liberal Arts (STELA) at Saint Louis University, Baguio City, Philippines.

# Significance of the Study

This study aims to evaluate the effectiveness of multimedia as an instructional material in tertiary education in Saint Louis University based on student observations and perspectives. The findings of this research will provide valuable insights that can benefit the following:

**Students:** This study will help students understand how multimedia tools enhance their learning experiences, engagement, and knowledge retention. By identifying the most effective multimedia approaches, students can optimize their academic performance and adapt to evolving educational technologies.

**Teachers and Educators:** The results of this study will serve as a guide for instructors in selecting and designing multimedia-based instructional materials that align with students' learning preferences. It will also encourage the adoption of innovative teaching strategies that improve classroom interaction and comprehension.

**Academic Institutions:** The findings will assist universities in making informed decisions regarding the integration of multimedia in curricula. This research can support policy development on technology-enhanced learning, ensuring that educational practices meet modern pedagogical standards.

**Future Researchers:** This study will contribute to the growing body of literature on educational technology and multimedia learning. Researchers interested in similar topics can use this study as a reference for further investigations, expansions, or improvements in the field.

**Curriculum Developers**: The insights from this research can aid in the design of more interactive and student-centered learning materials, ensuring that multimedia resources are effectively utilized to maximize educational outcomes.

By examining student observation and perspectives, this study will bridge the gap between technology integration and academic effectiveness, ultimately fostering a more dynamic and engaging learning environment in tertiary education.

## Results

This study utilized field notes with guide questions to observe areas of interest regarding the effectiveness of multimedia as instructional material as utilized by tertiary education teachers. The following were the observations exhausted.

Areas	Observations				
1. What types of multimedia instructional materials are used in the class, and how are they					
utilized?	~ m1 · · · · · · · · · · · · · · · · · ·				
a) What instructional materials are used in class?	The most commonly used instructional materials in class are PowerPoint presentations, which serve as the primary teaching tool for lectures. Teachers also utilize printed handouts, modules, web materials, and videos to supplement instruction. Multimedia resources such as images, stock photos, and hyperlinks further enrich learning by providing visual references and additional information. In some cases, interactive tools like ClassPoint are integrated into presentations to engage students, while response cards are occasionally used to facilitate participation during discussions. Additionally, PowerPoint slides are displayed through televisions or projectors, ensuring accessibility and clarity in content delivery.				
b) How did they use them? For what	The second secon				
purpose?	discussions, exercises, and assessments to enhance the teaching and learning process. PowerPoint presentations serve as the main tool for presenting information and providing visual support during lectures. Handouts and modules are distributed online to serve as supplementary resources, guiding students through unit lessons and outlining key objectives. Web materials, shared through hyperlinks, extend and enrich lesson content beyond traditional materials. In some cases, PowerPoint slides include blocked words to encourage student engagement through recitation. Additionally, instructional materials play a role in quizzes, activities, and instructions, ensuring structured and comprehensive learning experiences.				
c) How frequently do teachers switch instructional materials?	Teachers rarely switch instructional materials, as they predominantly rely on PowerPoint presentations for content delivery. While some instructors incorporate additional methods, such as writing on the board or using short video presentations, these changes are infrequent. In most cases, instructional materials remain consistent, with only occasional shifts when necessary, such as switching from PowerPoint to the whiteboard for additional explanations. Oral discussions and video-based instruction are used sporadically, but there is little variation in the primary teaching tools. This consistency in instructional				

Table 1. Researchers' fieldnote	es
---------------------------------	----

	materials suggests a preference for familiar methods that
	streamline lesson delivery, though limited variation may
	imnact student engagement.
d) Are the materials teacher-created	The instructional materials used in class are predominantly
toythook based or digital recourses?	together created with a strong reliance on teythook based
textbook-based, of digital resources:	content and digital recourses. Many teachers develop their
	content and digital resources. Many teachers develop their
	own materials by adapting content from printed sources
	such as textbooks, journals, and curriculum guides,
	ensuring alignment with course objectives. Additionally,
	some subjects integrate digital sources like online
	databases, competency guides, and sustainable
	development goals (SDGs) documents to enhance learning.
	PowerPoint presentations are commonly used to present
	textbook-based content in a more structured and visual
	manner. While most instructional materials are manually
	created by teachers, there is some uncertainty regarding
	whether AI-assisted tools contribute to their development.
	Nonetheless, the combination of teacher-created, textbook-
	based, and digital resources provides a comprehensive
	approach to instruction, making content more accessible
	and adaptable to modern learning needs.
2. How frequently do teachers integra	ate multimedia instructional materials?
a) How are digital platforms used to	The supporting second s
support instruction?	instruction by facilitating the dissemination of instructional
support mot action.	materials and enhancing overall learning efficiency. Google
	Classroom for instance serves as a central hub where
	teachers unload PowerPoint presentations modules and
	other resources allowing students to access review and
	download materials at their convenience. These platforms
	also function as submission portals for assignments and
	also function as submission portais for assignments and
	projects, ensuring organized and timely submission of
	Work. Additionally, tools like Google Suite, Caliva, and
	mentimeter contribute to interactive learning by enabling
	conaboration, real-time engagement, and creativity in
	assessments and activities. The accessibility of digital
	platforms extends beyond the classroom, as students
	receive notifications, track their progress, and stay
	informed about instructions ahead of time. While online
	quizzes promote focused learning, they also present
	challenges such as increased temptation to cheat.
	Nonetheless, these platforms make instruction more
	efficient, saving time and effort for both students and
	teachers, particularly in asynchronous learning settings.
b) Do students actively engage with	Students actively engage with digital materials beyond the
digital materials outside of class?	classroom, utilizing various online platforms to enhance
	their learning experience. Many seek additional resources
	to reinforce their understanding and stay aligned with
	course competencies, using digital content for advanced
	reading, reviewing guizzes, and tracking progress.
	Collaboration is a significant aspect of this engagement, as
	students frequently work with neers through shared
	documents spreadsheets and presentations on platforms
	like Google Docs and Canya Additionally the integration of
	loarning management systems (LMS) such as Coords
	Classroom in face to face classes encourages students to
	interact with digital recourses access instructions and
	anneraci with uightal resources, access instructions, and
	to all married flowibility and multiple to deute to tal
	tools provide flexibility and enable students to take a more
	independent approach to their learning process.

c) Are there any technical barriers (e.g., poor internet, device limitations)?	°F	Technical barriers, particularly poor internet connectivity, significantly hinder students' access to instructional materials. Although most students possess digital devices capable of accessing multimedia resources, slow internet speeds within the school make it difficult to retrieve the necessary content. Additionally, the institution imposes limitations on free access to essential software, such as Microsoft Office, further restricting students' ability to utilize digital learning tools effectively. In some cases, students lack the necessary technology, such as laptops, particularly for use inside the classroom. While face-to-face instruction remains a reliable method of delivering lessons, persistent connectivity issues and device limitations continue to present challenges in the integration of multimedia-based learning.
3. How do multimedia instructional types are most effective?	i ma	iterials support or enhance lesson content, and which
a) How do the materials support or enhance the lesson content?	Ŧ	Instructional materials, particularly PowerPoint presentations, enhance lesson content by organizing key concepts in a structured and accessible manner. The integration of visuals, videos, and graphic organizers simplifies complex ideas, making them easier to understand. Additionally, these materials allow for structured content delivery, ensuring that students can follow the lesson logically while reinforcing key concepts effectively.
b) Are the materials interactive, visual, auditory, or text-based?	¢	Most instructional materials are text-based, with PowerPoint presentations being the primary medium for lesson delivery. However, some materials incorporate visual and auditory elements, such as images, videos, and recorded lectures, to enhance comprehension. Additionally, interactive components, such as game-based assessments and hyperlinks to external resources, are sometimes integrated to promote student engagement and participation.
c) Do students seem to understand concepts better when certain materials are used?	<b>1</b>	Students tend to grasp lessons more effectively when instructional materials are varied, as interactive and visual presentations capture their attention and enhance engagement. While text-based materials provide essential information, they can sometimes be less engaging, leading to reduced participation. When PowerPoint presentations are structured with graphic organizers, bullet points, and supplemental resources like images and videos, students can process information more efficiently, leading to better retention and understanding.
<ul> <li>a) How does the teacher explain or integrate these materials into the lesson?</li> <li>A How do students react and nextini</li> </ul>		leachers effectively integrate instructional materials into lessons by allowing students to read the material before providing further explanations. PowerPoint presentations serve as the primary teaching tool, ensuring that key concepts are thoroughly explained and often linked to real- life applications. These materials are incorporated into lectures, discussions, and even formative assessments like pop quizzes, reinforcing student understanding. Additionally, supplemental resources, such as online references and multimedia elements, are introduced to encourage further learning. Whiteboards function as secondary aids, while images, videos, and modules enhance visualization and comprehension of lesson content.

introduced?	
a) How do students react when different instructional materials are introduced?	Students generally exhibit neutral or indifferent reactions when different instructional materials are introduced, particularly with PowerPoint presentations, which are widely accepted as the standard in modern classrooms. However, when alternative multimedia materials such as videos are used, students tend to show more enthusiasm, as the change in format captures their interest. While reactions are typically subdued, occasional expressions of excitement or happiness are observed, especially when the element of surprise is present in the instructional method. Students also demonstrate patience and openness to new materials, allowing teachers the flexibility to experiment with different presentation styles. Engagement often increases when instructional materials encourage active participation, such as through recitation or interactive discussions, although individual responses may vary, with some students remaining passive and others being more
b) Do students ask more questions or participate more actively when certain materials are used?	<ul> <li>expressive in their reactions.</li> <li>Student engagement and inquiry are influenced by the way instructional materials are presented rather than the materials themselves. While students generally focus on content rather than format, PowerPoint presentations with clear instructions encourage participation through questions that reinforce understanding. Interactive multimedia materials further enhance engagement by stimulating active involvement, leading to better information retention. Regardless of the instructional material used, student-teacher interaction remains consistent, with students frequently asking questions as part of the learning process. However, the level of participation is often heightened when materials are designed to be interactive and engaging.</li> </ul>
c) Are students taking notes, listening attentively, engaging in discussions, or using devices during the lesson?	Student engagement during lessons varies depending on instructional methods and classroom dynamics. While some students pay close attention to discussions, others are distracted by technology, often using their devices for non- academic purposes. However, many students also utilize their devices as supplementary learning tools, accessing additional resources to support their understanding. Note- taking is infrequent, as teachers often discourage it, assuring students that materials will be uploaded later. This reduces attentiveness and active engagement, as some students passively listen instead of interacting with the lesson. Engagement is often dependent on the teacher's approach-interactive instructional materials and strategies, such as calling on students to read or participate, enhance attentiveness. While some students actively engage in discussions, others rely on their devices, either to access materials or for unrelated activities, highlighting the need for structured classroom management to maximize participation.
5. What challenges and limitations and	re encountered in using multimedia instructional materials?
a) Are there any noticeable difficulties in using certain instructional materials?	The challenges associated with the use of multimedia instructional materials primarily stem from technical limitations rather than the clarity or ease of use of the materials themselves. Common difficulties include hardware-related issues, such as faulty HDMI cables, low laptop battery life, and defective TV wires, which, while

	occasionally disruptive, can often be resolved with simple troubleshooting. Accessibility concerns also emerge when teachers upload modules or online resources on the same day as the discussion, making it difficult for students to access materials in real time, especially in areas with weak internet connectivity. Additionally, broken hyperlinks hinder seamless engagement with digital resources, further complicating the learning process. While technical difficulties related to connectivity and device functionality are often unavoidable, they occur infrequently and can generally be addressed with minor interventions. Despite these occasional setbacks, the overall effectiveness of multimedia instructional materials remains intact, as they continue to enhance the delivery of lessons and support diverse learning needs.
b) Do students struggle with comprehending or engaging with any specific type of material?	The findings indicate that students demonstrate a strong understanding of lessons when teachers effectively relate instructional content to real-life situations, reinforcing comprehension and engagement. Gamified instructional materials significantly enhance student participation, whereas traditional text-based materials elicit lower levels of engagement. However, comprehension and attentiveness largely depend on the quality of instructional materials, as well-structured and visually appealing PowerPoint presentations contribute to sustained interest and effective knowledge retention. Furthermore, students exhibit a high level of digital literacy, suggesting that familiarity with multimedia instructional materials does not pose a challenge. Instead, difficulties arise from the complexity of lesson content and the level of student attentiveness rather than from the instructional medium itself. These results highlight the importance of designing interactive and contextually relevant multimedia materials to optimize student learning experiences.
c) Are there any distractions or disengagement patterns linked to material use?	The findings reveal that while students generally have access to digital devices capable of utilizing multimedia instructional materials, persistent issues with internet connectivity and technological limitations hinder their ability to maximize these resources. Poor internet infrastructure and restricted access to essential digital services, such as Microsoft Office, significantly impede the seamless integration of multimedia in learning. Furthermore, while face-to-face instruction remains an effective means of delivering lessons, the lack of reliable internet access within school premises disrupts students' ability to retrieve online learning materials and participate in digital activities. The disparity in access to technology, particularly the availability of laptops and other essential devices within the classroom, further exacerbates the challenge. These limitations underscore the need for improved technological infrastructure and institutional support to ensure equitable access to multimedia-based learning.

# Discussions

The findings lifted from the field notes of the researchers reveal how multimedia is being utilized by teachers in tertiary education. The findings that were exhausted are the common types of multimedia used in tertiary education, how frequent teachers integrate these multimedia, their effectiveness in enhancing the lesson

content, how students react and participate with them, and the challenges and limitations of using these multimedia.

## Types of Multimedia Instructional Materials and Their Utilization

Multimedia instructional materials play a crucial role in enhancing teaching and learning by providing diverse formats for content delivery. Among these, PowerPoint presentations (PPTs) are the most frequently used, serving as the primary tool for lectures and discussions. Supplementary materials such as handouts, modules, videos, and web resources provide additional learning support, catering to different learning styles. Visual aids like images and stock photos are particularly useful in subjects requiring conceptual illustration, while interactive tools such as ClassPoint and response cards promote engagement.

Despite the variety of instructional materials available, most educators exhibit minimal variation in their teaching methods, consistently using PowerPoint as their main tool. Teachers occasionally integrate whiteboard discussions, videos, and oral recitations when necessary to enhance engagement. Instructional materials are primarily teacher-created, often derived from textbooks and supplemented with digital resources, including journal articles and online references. While AI-assisted materials remain uncertain, digital elements related to course guides and sustainable development goals are sometimes included. The overall instructional approach remains largely PowerPoint-dominated, with blended multimedia elements used selectively to enrich learning experiences. It is always shown that the use of multimedia encourages learners to be active in the class, thus teachers must learn to adapt new sets of skills in order to utilize multimedia materials in teaching their students (Duya, 2020).

## **Frequency of Multimedia Integration in Teaching**

Teachers frequently integrate multimedia instructional materials into their instruction especially during lectures or classroom meetings. They primarily provide these materials through digital platforms such as Google Classroom, online quizzes, and collaborative tools like Google Suite, Canva, and Mentimeter. These platforms serve as a means for material dissemination, assignment submissions, and instructional support. Google Classroom is widely used for posting PowerPoint presentations (PPTs), modules, and assignments, acting as both a learning resource and a progress tracker. This is because modern classroom settings facilitate blended learning (Bondarenko *et al.*, 2020). Additionally, digital platforms provide notifications for deadlines, enhancing student time management. The use of online quizzes and interactive materials makes learning more engaging and efficient, although online assessments increase the temptation to cheat.

Students generally engage with digital instructional materials outside of class. They utilize these platforms to collaborate with peers on assignments and projects, access supplemental learning resources, and keep track of their academic progress. The accessibility of digital content allows for advanced reading, reviewing for quizzes, and catching up on lessons, making it an essential component of modern learning. The integration of multimedia materials fosters independent learning and provides students with multiple ways to reinforce their understanding of course content.

## **Effectiveness of Multimedia in Enhancing Lesson Content**

Multimedia instructional materials significantly enhance lesson content by improving organization, accessibility, and engagement, making learning more structured and visually appealing. PowerPoint presentations (PPTs), in particular, are widely preferred by students for their ability to outline key concepts clearly and integrate visuals, videos, and hyperlinks to support understanding. Vagg *et al.*, (2020) highlight that students frequently use multimedia to explain difficult concepts, enhancing both teaching and learning processes. Similarly, Chavan *et al.*, (2020) confirm that students favor PPTs for complex topics due to their structured format and visual appeal. Furthermore, multimedia tools accommodate different learning styles, as gamified presentations and interactive elements promote engagement and motivation. Peláez and Solano (2023) found that gamification aligns learning activities with objectives, reinforcing key ideas and breaking down complex topics for better comprehension. As learning preferences evolve, multimedia remains adaptable, catering to diverse styles in a single platform (Vagg *et al.*, 2020).

The effectiveness of multimedia tools, however, depends on their integration into lessons and the teacher's ability to contextualize them. Instructional materials should not only be presented but also explained and connected to real-life applications for maximum impact. A structured approach combining presentations, interactive elements, and supplemental resources can guide students toward a deeper understanding. Désiron *et al.*, (2024) emphasize that successful multimedia integration requires not just the right tools but also pedagogical training to bridge the gap between multimedia learning theory and classroom practice.

## International Journal of Recent Innovations in Academic Research

Additionally, Al-Ajmi and Aljazzaf (2020) confirm that multimedia technologies enhance lesson delivery and engagement by integrating visuals, interactive elements, and supplementary links, improving comprehension and retention. When effectively implemented, multimedia instructional materials provide a well-rounded learning experience, ensuring that lessons are both engaging and educationally effective.

## **Student Reactions and Participation**

Students exhibit varied reactions to multimedia instructional materials, with PowerPoint presentations (PPTs) being the most common yet least exciting due to their familiarity. While students generally accept PPTs as the norm in modern education, alternative materials such as videos, interactive tools, and visual-based content tend to elicit greater enthusiasm. The novelty of these materials captures student interest, fostering engagement and receptivity. Although some students remain indifferent, many appreciate the variety, and most are patient when teachers experiment with new instructional methods. Participation levels also depend on the type of multimedia used; interactive tools encourage more engagement, while static content often results in passive learning. Direct interaction through digital quizzes, response cards, or structured discussions enhances retention and fosters meaningful student-teacher interaction. Gamified learning as a pedagogical strategy encourages engagement, motivation, and enhances academic performance (Pellas, 2024).

Attentiveness and classroom behavior are also influenced by the instructional tools used. While technology can aid learning, it can also be a distraction, as some students engage in unrelated activities. The common practice of sharing PPT slides after lessons has contributed to decreased real-time engagement, as students rely on reviewing materials later instead of taking notes. Teachers who incorporate interactive elements, visuals, and participation strategies tend to maintain student interest more effectively, whereas lessons lacking interactivity may lead to disengagement. According to Weng and Zheng (2023) static PowerPoint slides may need enhancements, such as voice overs or interactive elements, to be more effective. Overall, the effectiveness of multimedia instructional materials depends on how they are integrated into the learning process, with interactive and engaging tools proving to be the most beneficial for student participation and retention.

## **Challenges and Limitations in Using Multimedia**

The use of multimedia instructional materials (IMs) in the classroom presents challenges related to technical issues, student engagement, and the effectiveness of content delivery. While most IMs function without major operational difficulties, common problems such as faulty HDMI cables, weak internet connections, and broken hyperlinks can disrupt lessons, especially when materials are uploaded on the day of discussion. Although these issues are usually minor and can be resolved with basic troubleshooting, they can momentarily hinder the effectiveness of multimedia instruction. Additionally, student comprehension is generally strong when teachers relate lessons to real-life situations and structure PowerPoint presentations effectively. However, engagement levels vary depending on the type of IM used-gamified and interactive materials tend to boost participation, whereas text-heavy content may lead to disengagement.

Beyond technical concerns, the design and presentation of IMs play a crucial role in sustaining student attention. Overly wordy PowerPoint slides, poor contrast, and unappealing font choices can contribute to reduced engagement, aligning with findings of Ohal *et al.*, (2025) that excessive visual elements can sometimes overwhelm students. Teachers who fail to incorporate interactive features into multimedia materials often struggle to maintain student interest, while gamified IMs, though effective, may pose classroom management challenges. In technology-based classes, distractions also arise when students misuse devices for non-educational purposes. Ultimately, the effectiveness of multimedia instruction depends on how well teachers spontaneously balance accessibility, interactivity, and visual appeal while minimizing technical disruptions and classroom distractions. In a study by Xu (2017) multimedia teaching can reduce spontaneity and classroom engagement when teachers fail to interact with the students, this leads to monotonous lessons which decreases knowledge retention.

## Conclusions

Integrating multimedia instructional materials in education enhances engagement, accessibility, and comprehension. With text, audio, images, videos, and animations, these tools cater to diverse learning styles, making lessons more interactive and effective. Teachers utilize multimedia across various platforms, improving instructional delivery and offering students greater flexibility in accessing learning resources. Multimedia also supports independent learning, allowing students to review lessons at their own pace,

collaborate with peers, and reinforce key concepts. Despite its advantages, challenges such as poor internet connectivity and limited device access hinder seamless integration.

## Recommendations

The effectiveness of multimedia depends on well-structured, interactive content, as poorly designed materials can reduce student engagement. To maximize its benefits, teachers should focus on dynamic instructional design, while schools must address technological barriers to ensure equal access. While multimedia instruction presents minor challenges, its advantages far outweigh its limitations, making it a valuable tool for modern education. Moving forward, continuous improvements in multimedia integration will further enrich learning experiences.

# Declarations

**Acknowledgements:** The current study would like to express sincere gratitude to the Undergraduate Research Coordinator of the School of Teacher Education and Liberal Arts, Dr. Marlon Palbusa for the guidance and supervision provided to the student researchers. Authors are very thankful to all their schoolmates who provided their responses and observations to the questions posted in the study.

**Author Contributions:** CESL: Abstract, introduction, data gathering, data analysis, results and discussions; ZJAA: Data gathering, data analysis, results and discussions, conclusions, recommendations; SKBS: Introduction, data gathering, data analysis, results and discussions; JLCLW: Data gathering, data analysis, results and discussions; TROA: Data gathering; MLB: Adviser and consultant, editor, evaluator of all manuscript and research content; theories and concepts in the study.

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

**Consent to Publish:** All authors agree to publish the paper in International Journal of Recent Innovations in Academic Research.

**Data Availability Statement:** The data sets generated and/or analyzed during this study are not publicly available but are available from the corresponding author upon reasonable request.

Funding: This research is not in any way under any funding agency or institution.

**Institutional Review Board Statement:** This study was conducted in accordance with the course requirements of the subject SS 322-Production of Instructional Materials in Teaching Social Studies. We have taken approval from the Undergraduate Research Coordinator (UGRC) to conduct this research work. During the conduct of this research, no ethics committee approval for undergraduate research was required at our institution.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in this study.

**Research Content:** The research content of manuscript is original and has not been published elsewhere.

# References

- 1. Abdulrahaman, M.D., Faruk, N., Oloyede, A.A., Surajudeen-Bakinde, N.T., Olawoyin, L.A., Mejabi, O.V., et al. 2020. Multimedia tools in the teaching and learning processes: A systematic review. Heliyon, 6(11): e05312.
- 2. Agisni, A., Novari, D., Leander, G., Prawirawan, B.U. and Pohan, A.H. 2023. The effectiveness of multimedia learning: A study on student learning. Priviet Social Sciences Journal, 3(7): 9-11.
- 3. Al-Ajmi, N.H. and Aljazzaf, Z.M. 2020. Factors influencing the use of multimedia technologies in teaching English language in Kuwait. International Journal of Emerging Technologies in Learning, 15(5): 212-234.
- 4. Awogbami, P.A. 2020. Lecturers' use of multimedia resources for knowledge transfer: A study of Adeleke University, Ede, Osun State. Information Impact: Journal of Information and Knowledge Management, 11(2): 35-50.
- 5. Bondarenko, O.V., Pakhomova, O.V. and Lewoniewski, W. 2020. The didactic potential of virtual information educational environment as a tool of geography students training. arXiv. <u>https://arxiv.org/pdf/2002.07473</u>
- Chavan, S.M., Tankhiwale, S.R. and Damke, S.G. 2020. Student assessment on learning based on PowerPoint versus chalkboard. International Journal of Recent Trends in Science and Technology, 10(2): 26-30.
- Désiron, J.C., Schmitz, M.L. and Petko, D. 2024. Teachers as creators of digital multimedia learning materials: Are they aligned with multimedia learning principles. Technology, Knowledge and Learning. <u>https://doi.org/10.1007/s10758-024-09770-1</u>

- 8. Duya, N. 2020. Multi-media utilization in teaching-learning process. IJRDO-Journal of Educational Research, 5(5): 1-20.
- 9. Kawulich, B.B. 2005. Participant observation as a data collection method. Forum: Qualitative Social Research, 6(2): Art. 43.
- 10. Marshall, C. and Rossman, G.B. 1995. Designing qualitative research. 2<sup>nd</sup> Edition. Thousand Oaks, CA: Sage.
- 11. Ohal, S.S., Rathod, V.V., Sheikh, S., Choudhary, U.K. and Karambelkar, Y. 2025. Questionnaire-based comparative analysis of conventional chalk and blackboard versus PowerPoint presentation as teaching methods in medical college from students' perspective and point of view. National Journal of Physiology, Pharmacy and Pharmacology, 15(1): 41-41.
- 12. Peláez, C.A. and Solano, A. 2023. A practice for the design of interactive multimedia experiences based on gamification: A case study in elementary education. Sustainability, 15(3): 2385.
- 13. Pellas, N. 2024. Effects of Kahoot! on K-12 students' mathematics achievement and multi-screen addiction. Multimodal Technologies and Interaction, 8(9): 81.
- 14. Rajagukguk, S., Sinaga, A.H., Piliang, F.M. and Tanjung, A. 2023. The effect of multimedia utilization on increasing students learning outcomes. Jurnal Penelitian Pendidikan IPA, 9(8): 5845-5851.
- 15. Rogti, M. 2024. The effect of mobile-based interactive multimedia on thinking engagement and cooperation. International Journal of Instruction, 17(1): 673-696.
- 16. Schensul, S.L., Schensul, J.J. and LeCompte, M.D. 1999. Essential ethnographic methods: Observations, interviews, and questionnaires (Vol. 2). Rowman Altamira.
- 17. Vagg, T., Balta, J.Y., Bolger, A. and Lone, M. 2020. Multimedia in education: What do the students think? Health Professions Education, 6(3): 325-333.
- 18. Weng, W. and Zheng, M. 2023. Comparison between PowerPoint slides and videos in effectiveness for elearning. In: EDULEARN23 Proceedings (pp. 5887-5893). IATED.
- 19. Xu, X. 2017. Study on effective using of multimedia teaching system and enhancing teaching effect. International Journal of Emerging Technologies in Learning, 12(6): 187-192.

**Citation:** Christian Ervhen S. Laguatan, Zyvynx Jhy A. Ariaga, Shein Kenneth B. Sansano, Jan Liam Carl L. Willy, Tyler Reyn O. Alfonso and Marilyn L. Balmeo. 2025. Effectiveness of Multimedia as an Instructional Material in Tertiary Education: Student Perspectives. International Journal of Recent Innovations in Academic Research, 9(2): 298-308.

**Copyright:** ©2025 Christian Ervhen S. Laguatan, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<u>https://creativecommons.org/licenses/by/4.0/</u>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.