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Understanding the role of media-based instruction in learners' academic performance: A case study of Ngibat Elementary School

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ABSTRACT

This multiple case study aimed to understand the role of media-based instruction to learners' academic performance at Ngibat Elementary School. Four (4) teacher-participants were selected through purposive sampling using qualitative design. Data were gathered through interviews, full-period classroom observations, and document analysis of lesson plans. These data were analyzed using thematic and cross-case analysis. The Findings showed that media-based instruction increases learners' motivation, engagement, comprehension, and academic performance. Teachers commonly used instructional materials such as pictures, charts, audios, and audiovisuals like videos and PowerPoint presentations. They also used applications like Canva and Microsoft productivity Tools. Although media-based instruction improved delivery of lessons and academic performance, challenges included limited access to devices for learners, technical issues, time constraints, and health concerns. The study concluded that media-based instruction is effective when supported with proper planning and readiness of teachers, and adequate resources for learners. It is then recommended that the institution and schools provide learners access to devices for interactive learning and offer continuous trainings for teachers.

Keywords: Learner engagement, academic performance, media-based instruction, educational technology, multiple case study.

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INTRODUCTION

The rapid growth of educational technology has significantly changed teaching and learning processes. In today's digital era, education and technology are increasingly interdependent, contributing to the integration of media-based instruction in classrooms. Media-based instruction includes the use of instructional materials such as videos, presentations, digital images, audio materials, and interactive applications that improved learners' engagement and understanding. Media tools stimulate multiple senses, creating learning more meaningful and efficient (Sari, 2022).

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In the Philippine basic education setting, specifically in public elementary schools, the use of media and technology has become more important as schools adapt to the demands of 21st-century learning. The Department of Education emphasizes that to promote learner-centered instruction, critical thinking and lasting learning skills, Information and Communication Technology (ICT) should be used. (DepEd, 2008). Media-based instruction, including multimedia elements such as text, images, audio, video, and animation, allows teachers to present information in diverse and engaging ways that cater to different learning styles (Guan et al., 2018). When effectively implemented, these approaches can improve learners' motivation, comprehension, and academic performance (Viador, 2023).

Teachers are encouraged to incorporate the different forms of instructional media to enhance delivery of lessons and for learners to actively participate in teaching and learning process. Through interactive, learners are actively engaging with content and receive feedback immediately leading to better understanding. Despite these benefits of media-based instruction, challenges still occur such as insufficient training of teachers and limited access to technological resources. As a result, classroom instruction may become less engaging and may not fully support active learner participation (Andayani et al., 2020).

Ngibat Elementary School, like many public schools, has gradually integrated media-based instructional strategies to enhance traditional methods of teaching to improve lesson delivery and address the diverse needs of learners, teachers utilized available media tools such as images or pictures, audio, PowerPoint presentations and other media materials. This prompt the need to explore how teachers use media-based instruction in the classroom, and how it affects the academic performance of leaners.

To address this gap, this study adopted a case study approach to gain an in-depth understanding of media-based instruction within its real-life context. With this approach, it enables for a comprehensive examination of practices, processes, and experiences in a real educational setting. It is also consistent with the standards of educational institution such as DepEd and CHED on promoting context-responsive and evidence-based research.

Moreover, to ensure the credibility of the study, multiple data sources such as interviews, classroom observations, and document analysis are used as recommended in qualitative research practices.

The purpose of this case study was to understand the role of media-based instruction in learners' academic performance at Ngibat Elementary School. Specifically, it sought to document teachers' experiences, identify strengths and challenges, and analyze contextual factors affecting instructional practices. The findings of the study aimed to contribute to the improvement of educational quality by providing evidence-based insights that can guide educators, school leaders, and policymakers in enhancing teaching strategies and learner outcomes.

Statement of the problem

This study aimed to understand the role of media-based instruction to learners' academic performance at Ngibat Elementary School.

Specifically, it sought to answer the following questions:

1. What types of media-based instructional materials are commonly used by the teachers?
2. How do the selected teachers describe their use of media-based instruction in their classroom?
3. How do teachers perceive the role of media-based instruction in learners' academic performance?
4. What challenges do teachers encounter in implementing media-based instruction?

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METHODOLOGY

This study made use of a qualitative research design, which was appropriate because it sought to investigate and understand human experiences, meanings, perceptions, and social processes in real settings. It focused on rich, descriptive information to explain how and why a phenomenon occurs. In qualitative research, the researcher serves as the primary instrument for data collection through interviews, observation, and document analysis.

Specifically, the study used a multiple case study design because it involved four (4) teacher respondents from Ngibat Elementary School who served as individual cases. Each teacher represented a distinct case of how media-based instruction is implemented in their respective classrooms. Through this design, the researcher was able to examine teachers' various strategies in using media and how these affect learners' academic performance across grade levels. A multiple case study design was chosen because the research aimed to gain an in depth understanding of how media-based instruction is implemented in a real school setting and how it influences learners' academic outcomes. Since the study was limited to Ngibat Elementary School, it was appropriate to investigate the cases in their natural environment. Moreover, the use of a multiple case study strengthened the depth and credibility of the results through thematic and cross case analysis. This study determined common themes, instructional patterns, differences in the use of media-based instruction, and how it affects learners' academic performance. Through this approach, an in depth understanding of the cases under investigation was provided.

The case study involved four (4) teacher participants from Ngibat Elementary School. Pseudonyms were used to ensure that the identities of the participants were protected. The participants differed in years of teaching experience, grade level assignments, and subject specializations. Teacher A had 1 year of teaching experience and was assigned to Kindergarten and Grade 1, handling GMRC, Language, Reading and Literacy, Math, and Makabansa. Teacher B had 10 years of teaching experience and was assigned to Grade 2, handling GMRC, English, Filipino, Math, and Makabansa. Teacher C had 10 years of teaching experience and was assigned to Grade 3, handling GMRC, English, Filipino, Science, Math, and Makabansa. Teacher D had 30 years of teaching experience and was assigned to Grade 4, handling GMRC, English, Filipino, Science, Math, Araling Panlipunan, EPP, and MAPEH. The variation in teaching experience and grade level assignment provided diverse perspectives appropriate to the focus of the study.

This study employed purposive sampling, in which participants were intentionally selected based on specific criteria relevant to the objectives of the study. The participants had to be full time public elementary school teachers at Ngibat Elementary School, have at least one (1) year of teaching experience, be currently teaching in Kindergarten, Grades 1 to 6, be directly involved in lesson planning and classroom instruction, and be willing to participate and provide informed consent. Participants were selected because they possessed experiences and characteristics that were directly aligned with the purpose of the research.

This study utilized multiple qualitative data collection methods to obtain an in depth understanding of the implementation of media-based instruction and its relationship to learners' academic performance at Ngibat Elementary School. Specifically, the researcher employed semi structured interviews, full period classroom observations, and document analysis of lesson plans. The use of multiple sources of data enabled triangulation, thereby strengthening the reliability of the findings. Data collection was conducted over a period of four (4) weeks during the fourth quarter of the academic year. This duration allowed the researcher sufficient time to schedule interviews, conduct classroom observations, review instructional documents,

and validate the information gathered. The extended period also ensured that the observations reflected regular classroom practices rather than isolated instructional events.

The researcher served as the primary instrument of the study. To systematically gather data, the researcher utilized a semi structured interview guide, a classroom observation checklist, a field notes journal, and a document analysis checklist for reviewing lesson plans. These instruments were developed based on the objectives of the study and were validated by experts prior to implementation to ensure relevance, clarity, and alignment with the research questions.

Semi structured interviews were conducted with the four teacher participants to explore their experiences, teaching strategies, and perceptions regarding media-based instruction. An interview guide consisting of open-ended questions was used to ensure that necessary information, such as media selection, instructional strategies, learner engagement, challenges encountered, and perceived roles on academic performance, was covered. Each interview lasted approximately 30 to 45 minutes and was conducted at a mutually agreed schedule. With the participants' consent, the interviews were audio recorded to ensure accurate data transcription. Notes were also taken during the interview sessions to record key information and nonverbal cues.

To examine the actual implementation of media-based instruction, classroom observation was carried out in real teaching and learning situations. An observation checklist was used to document the types of media utilized, instructional strategies, learners' engagement and participation, classroom interaction patterns, and assessment practices during the lesson. Field notes were also recorded to capture descriptive and relevant information not reflected in the checklist. This method allowed the researcher to compare reported practices during interviews with actual classroom implementation.

Document analysis was conducted through the review of the teachers' lesson plans and related instructional materials. A document analysis checklist was used to examine the integration of media-based instruction in lesson planning. The lesson plans were analyzed based on the alignment of media with lesson objectives, types of instructional media included, strategies supporting learners' academic performance, and assessment methods and evaluation tools.

The study strictly followed ethical standards to ensure credibility and protect the participants. Prior to the gathering of data through interviews, classroom observations, and document analysis of lesson plans, the researcher secured written authorization from the Office of the School Head of Ngibat Elementary School. The study also obtained informed consent from all participating teachers, who were assured that their participation was entirely voluntary. To protect the identity of the participants, pseudonyms, namely Teacher A to Teacher D, were used in all documentation and analysis. Classroom observation notes and lesson plan analysis were also recorded in a manner that did not reveal personal identifiers.

The use of data was restricted solely to research purposes. All collected information, including interview transcripts, classroom observations, and lesson plan analyses, was anonymized, securely stored, and analyzed with respect for participants' rights and professional integrity. Quotations from teachers were included in the report only in a de identified manner to support the credibility and richness of the findings while maintaining ethical standards. By following these ethical standards, the study ensured that the rights and privacy of the cases and participants were upheld.

The collected data in this study were systematically analyzed to gain an understanding of how media-based instruction is implemented by teachers at Ngibat Elementary School and its role in learners' academic performance. All interviews conducted with the four teacher participants were audio recorded with their consent. The recordings were transcribed verbatim to ensure precision in capturing the participants' responses. In this process, the researcher

carefully reviewed the recordings multiple times to include nonverbal cues, pauses, and emphasis, which provided additional information on participants' perceptions and experiences.

The data were then coded to identify information appropriate to the research questions. This involved identifying words, phrases, or sentences that provided significant ideas and experiences associated with media-based instruction. The coded data were then organized into themes that showed recurring patterns among the teacher participants' experiences. Thematic analysis allowed the researcher to interpret how media-based instruction was implemented, the challenges faced, and its perceived role in learners' academic performance. Themes were refined through repeated comparison and verification with field notes and lesson plan analysis to provide accurate data.

Cross-case analysis was conducted to compare the four teacher cases. This involved analyzing similarities and differences in how each teacher prepared, implemented, and assessed learning using media-based instruction. The cross-case analysis helped distinguish common patterns, various practices, and challenges affecting the effectiveness of media-based instruction. This process strengthened the study's findings by providing an in depth understanding of all the cases.

RESULTS AND DISCUSSION

The Results and Discussion of this case study are grounded in qualitative data gathered from four (4) purposively selected teacher-participants from Ngibat Elementary School who are actively implementing media-based instruction in their classrooms. The study employed a case study research design, utilizing purposive sampling to select participants with direct experience in integrating instructional media. Data were collected through interviews, classroom observations, and document analysis of lesson plans, and were analyzed using thematic analysis to identify recurring patterns, practices, and insights. The discussion that follows is firmly anchored in the data obtained and is interpreted in direct relation to the study's objective of understanding the role of media-based instruction in learners' academic performance, ensuring that all findings are contextualized within actual classroom practices and teacher experiences.

Teacher A's case reflects a developmental stage in digital pedagogy characterized by strong motivation to adopt media-based instruction despite notable constraints in time and technical proficiency. With almost two years of formal teaching experience and six years as a volunteer teacher, she operates within a multigrade Kindergarten and Grade 1 classroom, a context that demands differentiated strategies to address varied learner needs and short attention spans. Prior to the availability of internet connectivity and television, her reliance on traditional materials such as charts, flashcards, and improvised visual aids required extensive preparation time and offered limited dynamic engagement. The introduction of "Starlink" internet connectivity, television, Microsoft Productivity Tools eight months prior to the study, and Canva and Notebook LM two months later significantly transformed her instructional practices. However, her statement, "gusto kong gawin lahat ang naituro sa akin kaya lang nagkakaproblema ako sa time preparation kase mabagal talaga akong gumamit ng laptop," reveals a dual reality of strong eagerness to innovate and limitations in technical fluency. This aligns with the observed imbalance in instructional workload, where increased preparation time for media-based materials constrains efficiency. Document analysis confirms the integration of PowerPoint presentations and Canva-designed worksheets aligned with early literacy and numeracy, while classroom observations show increased learner attention and participation during media-supported lessons. Her assertion, "Attention span of learners is longer when

using media," is supported by observed behavioral engagement, indicating that visual and digital tools effectively sustain learner focus. Furthermore, her explanation that learners "madali nilang naiintindihan ang lesson" when visuals are used demonstrates enhanced comprehension, particularly in phonological awareness through picture-letter associations. Her observation, "Napansin ko na nag-improve sila sa pagbilang at pagbasa dahil sa mga media na ito," indicates perceived improvement in numeracy and literacy skills, suggesting that repeated exposure to media-based materials strengthens both conceptual understanding and skill acquisition. The integration of Canva activities combining numeracy with coloring tasks further reflects the role of media in addressing both cognitive and affective domains, as learners "nag-eenjoy sila at hindi sila madaling mabore." Despite time-related challenges, her statement that "The objectives of my lesson are attained because the media is carefully planned and used" demonstrates an emerging alignment between instructional objectives and media utilization, reinforcing the pedagogical value of purposeful technology integration.

Teacher B's case highlights the influence of structural constraints, particularly the lack of learner access to devices, on the implementation of interactive media-based instruction. With ten years of teaching experience across multiple grade levels, she demonstrates a well-established pedagogical foundation and prior use of creative strategies such as storytelling, songs, and visual aids even before technological advancements. The introduction of television, internet connectivity one year prior to the study, and digital tools such as Microsoft Productivity Tools, Canva, and Notebook LM expanded her instructional possibilities; however, her statement, "marami ngang itinuturo na mga interactive instructional media kaya lang ang problema walang gadgets para sa mga bata," underscores a critical gap between training and actual classroom implementation. Classroom observations confirm the use of a single laptop connected to a television, limiting interactive participation to only a few learners and reducing overall engagement in multimedia activities. Despite this limitation, she demonstrates strong awareness of responsible technology use, emphasizing, "Use media wisely. Time management is important. Avoid using extra time in just scrolling Facebook," which reflects disciplined instructional practice. Her statement, "Learners understand things through pictures and actions they see using media," indicates the effectiveness of visual aids in enhancing conceptual understanding. Lesson plan analysis reveals emerging integration of Canva-designed worksheets, indicating a transition toward more advanced media use. She further notes, "Learners are very cooperative and focused when I use media specifically interactive multimedia," highlighting increased engagement and participation. Her observation that learners "mas madali nilang maintindihan kaya madali lang nilang masagutan ang mga assessment" demonstrates a direct link between engagement and comprehension, while her statement, "Mataas ang nakukuha nila sa assessment kapag gumamit ng media, nag-iimprove ang academic performance nila," reflects perceived improvement in assessment performance. These findings suggest that even with limited interactivity, media-based instruction enhances learner focus, understanding, and academic outcomes, although full realization of its benefits is constrained by insufficient technological resources.

Teacher C's case introduces the dimension of physical well-being as a factor influencing media integration. With ten years of teaching experience in Grade 3, she demonstrates a strong commitment to enhancing instruction through media despite health-related limitations. Prior to technological advancements, her reliance on printed materials and limited projector use reflected traditional practices. The introduction of digital tools created opportunities for innovation; however, her statement, "gusto kong lahat sana ng aking itututuro ay may media instructional tools kaso hindi kaya ng mata ko. Masakit talaga kapag magtagal sa laptop," highlights the impact of eye strain and physical discomfort on her ability to consistently implement media-based instruction. Her additional remark, "Prolonged laptop use gives me headaches and eye strain, so I pace myself," illustrates her adaptive strategy to balance

instructional goals with health considerations. Classroom observations confirm that when media is used, learners are highly engaged, cooperative, and demonstrate improved academic performance in assessments. Her statement, "Most learners improve on their performance because of media," indicates a perceived positive impact on learning outcomes, while "The use of media should be primarily for student understanding and engagement" reflects a clear pedagogical orientation toward purposeful integration. Despite limited frequency of use, her inclusion of advanced media in lesson plans and acknowledgment that she is "still practicing the apps" demonstrate ongoing professional growth. Her case emphasizes that effective media integration is influenced not only by access and skills but also by teachers' physical capacity, highlighting the need to consider teacher well-being in educational innovation.

Teacher D's case represents the experience of a veteran teacher adapting to digital transformation. With thirty years of teaching experience in Grade 4, she brings extensive pedagogical knowledge but faces challenges in adopting new technologies. Her reliance on traditional materials throughout most of her career and gradual exposure to digital tools reflect a significant shift in instructional expectations. The introduction of television, internet connectivity, and platforms such as Microsoft 365, Canva, and Notebook LM required substantial adjustment. Her difficulty in remembering procedural steps and navigating digital tools, as reflected in her experience, affects her confidence and efficiency in implementation. Her statement, "Know, have patience to know how to use media in lessons," demonstrates recognition of the need for persistence and continuous learning. Lesson plan analysis shows gradual integration of media such as PowerPoint presentations, pictures, and videos, while classroom observations confirm successful implementation when materials are prepared. Her observation, "Mas nag-e enjoy ang mga bata ngayon sa aming lessons. Mas naiintindihan nila ang aralin dahil sa mga visuals na nakikita nila," indicates that despite technical challenges, her strong pedagogical foundation enables effective use of media to enhance engagement and understanding. Her acknowledgment that "Media in the lesson plan is reflected in classroom teaching, but I am still practicing the apps" reinforces the importance of ongoing support and practice for veteran teachers adapting to technological change.

Across all four cases, cross-case analysis reveals both shared patterns and distinct variations in the implementation of media-based instruction. All teachers consistently recognize the value of media in enhancing learner engagement, understanding, and academic performance, as evidenced by their observations of increased attention, participation, and improved assessment outcomes. The consistent use of PowerPoint presentations, images, videos, and Canva-designed materials across cases indicates a shared reliance on visual-based instructional tools as primary media resources. However, differences emerge in the level of integration and challenges encountered. Teacher A's limitations are primarily related to time and technical proficiency, Teacher B's challenges are structural due to lack of learner devices, Teacher C's constraints are physical due to health concerns, and Teacher D's difficulties are cognitive related to adapting to digital processes. These variations demonstrate that media integration is not uniform but is shaped by individual, structural, and contextual factors.

Thematic analysis further identifies key patterns underlying these experiences. The predominant use of PowerPoint and visual-based materials reflects a practical and accessible approach to media integration, supported by teacher statements such as "Attention span of learners is longer when using media" and "Learners understand things through pictures and actions they see using media." While effective in enhancing engagement and comprehension, the limited use of advanced interactive multimedia suggests constraints in digital skills and resource availability. Variations in practice highlight different stages of digital integration, from developing to adaptive and gradual adoption, influenced by factors such as teacher

readiness, access to technology, and personal conditions. The consistent observation that learners are "very cooperative and focused," "mas madali nilang maintindihan," and "nag-iimprove ang academic performance nila" reinforces the role of media as both a cognitive and motivational enhancer. At the same time, challenges related to time constraints, lack of devices, physical discomfort, and technical difficulties, as reflected in statements such as "nagkakaproblema ako sa time preparation," "walang gadgets para sa mga bata," "masakit talaga kapag magtagal sa laptop," and "Know, have patience to know how to use media in lessons," highlight barriers that affect consistent implementation.

In synthesis, the findings demonstrate that media-based instruction plays a significant role in improving learner engagement, comprehension, and academic performance, particularly through visual and multimedia support that enhances attention, retention, and participation. The results directly address the study's objective by showing that when media is purposefully integrated, it facilitates more meaningful learning experiences and contributes to observable improvements in foundational skills and assessment outcomes. However, the effectiveness of media-based instruction is influenced by a complex interplay of teacher-related, structural, and contextual factors, including digital proficiency, resource availability, physical well-being, and adaptability to innovation. These findings contribute to the broader understanding of media integration in elementary education by emphasizing the need for sustained professional development, improved technological infrastructure, and institutional support systems that address both technical and human dimensions of instructional practice, thereby providing a foundation for subsequent discussions on recommendations and policy implications in the next section of the study.

CONCLUSION

The findings of the study establish that media-based instruction plays a significant role in enhancing learners' academic performance by fostering increased motivation, deeper understanding, and the development of essential learning skills such as listening, viewing, and critical thinking. The integration of media resources within the teaching and learning process enables learners to engage more actively with instructional content, thereby facilitating improved comprehension of complex and abstract concepts. This suggests that media-based approaches contribute to a more effective and meaningful learning experience, as learners are able to process information through multiple sensory channels and interactive formats. Consequently, the results affirm that the strategic use of instructional media serves as a valuable pedagogical tool in promoting academic achievement and learner engagement.

Despite these positive outcomes, the study also reveals that the effectiveness of media-based instruction is contingent upon several contextual challenges, including the limited availability of devices for learners, the presence of technical issues, and concerns related to personal health. These constraints may disrupt the continuity and efficiency of media integration in classroom instruction, thereby limiting its potential impact. The findings further indicate that while media-based instruction holds considerable promise, its successful implementation is influenced by the preparedness of teachers to utilize media tools effectively and the accessibility of necessary technological resources. This underscores the importance of addressing both infrastructural and human resource factors to maximize the benefits of media-enhanced learning environments.

In light of these findings, it is recommended that teachers consistently incorporate media-based instruction into their pedagogical practices to enhance learner motivation, engagement, and understanding, while actively pursuing continuous professional development to strengthen their competencies in the effective use of instructional media. It is likewise imperative for school administrators to design, implement, and monitor sustained training

programs that equip teachers with the necessary skills and strategies for media integration. At the institutional level, the Department of Education is encouraged to reinforce policies and programs that support media-based instruction, particularly through the provision of adequate devices for learners and the institutionalization of ongoing teacher training initiatives. Furthermore, future researchers are advised to conduct similar investigations using larger samples or alternative research designs to validate and extend the present findings, thereby contributing to a more comprehensive understanding of the role of media-based instruction in diverse educational contexts. Collectively, these conclusions and recommendations highlight the critical interplay between instructional innovation, resource availability, and professional capacity in advancing the quality of teaching and learning.

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