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Teacher strategies in utilizing learning media: a descriptive qualitative case study in elementary schools

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ABSTRACT

In the context of Simeulue Regency, Aceh, teachers are required to adapt to these limitations by developing practical strategies for utilizing available learning media. This study aims to explore and analyze teacher strategies in utilizing learning media, focusing on the types of media used, instructional planning, classroom implementation, and perceived effects on student engagement and learning processes. This research employed a descriptive qualitative approach with a case study design conducted in three public elementary schools (SDN 8, SDN 13, and SDN 14 Simeulue). Data were collected through classroom observations, in-depth interviews with nine teachers and three school principals selected purposively, and documentation analysis. The data were analyzed using thematic analysis involving data reduction, categorization, and interpretation to identify recurring patterns of strategy use. The findings indicate that teachers predominantly utilize visual media (pictures and charts), real objects from the surrounding environment, and simple digital media. These strategies are perceived by teachers to enhance student motivation, participation, and conceptual understanding, as reflected in increased classroom interaction, student responsiveness, and attentiveness during learning activities. However, the effectiveness of media utilization is influenced by supporting factors such as teacher creativity and school leadership support, as well as inhibiting factors including limited facilities and teachers' digital competencies. This study contributes to a contextual understanding of how learning media are strategically utilized in resource-limited elementary schools and highlights that media function as pedagogical supports rather than determinants of measurable academic achievement. The findings suggest that sustainable media utilization requires continuous professional development and institutional support tailored to rural school contexts.



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Introduction

Learning media play a strategic role in supporting instructional processes, particularly in elementary schools with limited educational resources. In many Indonesian primary schools, especially those located in remote and rural areas, teachers face structural constraints such as inadequate facilities, limited access to technology, and minimal professional development opportunities. These conditions often result in the dominance of conventional teaching practices, limited variation in instructional approaches, and reduced student engagement during classroom learning. Consequently, learning activities tend to be less interactive, and students demonstrate low motivation and passive participation.

Previous studies consistently indicate that learning media can help clarify abstract concepts, support active learning, and enhance students' interest in learning (Doolittle et al., 2023; Ferdiansah et al., 2024; Padang & Sitepu, 2023). Media function not merely as instructional tools but as pedagogical supports that mediate interaction between teachers, learning content, and students. However, the effectiveness of learning media is highly dependent on how teachers plan, select, and implement them within specific classroom contexts. Without adequate planning and contextual adaptation, media use risks becoming symbolic rather than functional.

Student achievement is frequently cited as an indicator of instructional effectiveness. Several studies have reported associations between learning media, student motivation, and academic outcomes (Afifa & Astuti, 2024; Mujiyatun et al., 2021; Ristianita et al., 2024; Susanto, 2021). Theoretically, learning media influence achievement indirectly by increasing motivation, facilitating understanding, and supporting higher-order thinking processes (Lu et al., 2021). However, most empirical studies examining this relationship rely on quantitative measurements conducted in relatively well-resourced schools. As a result, there is limited understanding of how learning media function pedagogically in resource-constrained elementary school settings, where achievement outcomes are often inferred rather than objectively measured.

From a strategic perspective, learning strategies encompass not only instructional methods but also decisions regarding media selection, classroom implementation, and adaptation to contextual constraints (Rincon-Flores et al., 2024). Innovative teachers are often required to improvise by utilizing environmental resources or developing simple teaching aids when ideal media are unavailable (Asad et al., 2021). At the same time, school-level factors such as principal support, institutional policies, and infrastructure management shape the extent to which teachers can implement effective media-based strategies (Munifah & Purwaningrum, 2022; Usmanovna et al., 2025). These dynamics suggest that learning media utilization is not solely a pedagogical issue but also an organizational and structural one.

Despite the growing body of literature on learning media, several gaps remain. First, existing studies predominantly focus on the effectiveness of specific media types or technologies, while paying limited attention to teacher strategies in planning and adapting media under constrained conditions. Second, few studies explore supporting and inhibiting factors that influence media utilization at the school level, particularly in rural elementary schools. Third, the majority of research assumes a direct relationship between media use and student achievement, without critically examining how achievement is perceived, interpreted, or supported in qualitative classroom contexts.

This study is situated in Simeulue Regency, Aceh, a geographically remote area characterized by limited educational infrastructure and access to instructional resources. These conditions make Simeulue a relevant and meaningful context for examining how teachers utilize learning media strategically despite structural constraints. Understanding media utilization in this setting provides insights into adaptive pedagogical practices that may not emerge in more resource-rich environments.

Therefore, this study aims to address these gaps by exploring learning media utilization strategies in elementary schools using a descriptive qualitative case study approach. Specifically, the study examines how teachers plan, select, and implement learning media, as well as identifying supporting

and inhibiting factors that shape these practices. Rather than measuring student achievement quantitatively, this study focuses on teachers' perceptions of student engagement, understanding, and participation as outcomes of media-supported instruction. By doing so, the research contributes a contextual and practice-oriented understanding of learning media utilization in resource-limited elementary school settings.

Method

This study employed a descriptive qualitative case study design, specifically a collective (multiple) case study. The collective case study design was chosen because the research examined similar phenomena teachers' strategies in utilizing learning media across three elementary schools to identify shared patterns and contextual variations (Yin, 2018). Each school constituted one bounded case, while the collective analysis enabled cross-case comparison.

The case boundaries were clearly defined by (1) location (three public elementary schools in Simeulue Regency, Aceh Province), (2) participants (principals and classroom teachers directly involved in instructional activities), and (3) focus (strategies for utilizing learning media to improve student achievement). A descriptive qualitative approach was appropriate because the study aimed to capture naturally occurring practices, perceptions, and experiences rather than to test hypotheses or measure causal relationships.

The research was conducted at SDN 8 Teupah Selatan, SDN 13 Teupah Selatan, and SDN 14 Simeulue Timur. These schools were selected purposively based on three criteria: 1). They represent public elementary schools in rural and semi-rural areas of Simeulue Regency. 2). Teachers in these schools actively utilize both conventional and simple instructional media due to limited technological facilities, making them relevant to the research focus. 3). The schools had stable leadership and teaching staff, allowing sustained observation of instructional practices. The selection of three schools enabled comparative analysis while maintaining the depth required in qualitative case studies.

The informants consisted of 12 participants, selected using purposive sampling. They included three principals (one from each school) and nine classroom teachers (three teachers from each school). The selection criteria were: 1). Direct involvement in classroom teaching or instructional leadership, 2). Experience in planning or implementing learning media, and 3). Willingness to participate and provide detailed information.

Principals were selected because they determine school-level policies and support related to learning media, while teachers were selected as the primary implementers of instructional strategies. The sample size was considered sufficient because it allowed data saturation, meaning no new themes or relevant information emerged during the final interviews and observations (Creswell & Creswell, 2017). Saturation was identified when responses became repetitive and consistent across participants and schools.

Data were collected using in-depth interviews, non-participatory classroom observations, and documentation analysis.

In-depth Interviews

Semi-structured interviews were conducted with all informants using an interview guide aligned with the research questions. Each interview lasted approximately 40–60 minutes. Open-ended questions were used to explore teachers' strategies, challenges, and considerations in utilizing learning media, as well as principals' policies and support mechanisms.

Observations

Non-participatory observations were conducted during classroom learning activities to examine how learning media were implemented in practice. Observations focused on types of media used, teacher student interactions, and student responses. Field notes were recorded systematically to capture instructional dynamics.

Documentation

Documents analyzed included lesson plans, teaching materials, learning media samples, and student work. Documentation supported interview and observation data by providing contextual and instructional evidence.

The combination of these techniques enhanced data richness and ensured methodological rigor (Dubey & Kothari, 2022; Kumar et al., 2025). Data analysis followed the interactive model proposed by Miles, (1994), consisting of data reduction, data display, and conclusion drawing. 1). Data reduction involved transcribing interviews, coding meaningful units, and filtering data relevant to learning media strategies. 2). Data display was conducted through narrative descriptions and thematic matrices to facilitate interpretation and cross-case comparison. 3). Conclusion drawing and verification involved identifying recurring patterns, linking findings to existing theories, and validating interpretations through continuous comparison. Coding was conducted inductively, starting from open codes, which were then grouped into categories and overarching themes. Analytical rigor was maintained through iterative review and comparison across data sources.

To ensure credibility and dependability, source triangulation and technique triangulation were applied. Source triangulation was conducted by comparing data obtained from principals and teachers, while technique triangulation involved cross-checking interview data with observations and documentation. When inconsistencies emerged, the researcher re-examined field notes and interview transcripts to reach interpretive coherence. Triangulation strengthened the credibility of findings (Creswell & Poth, 2016).

The researcher acted as the primary research instrument and maintained reflexivity throughout the study. To minimize bias, the researcher used interview guides, maintained reflective field notes, and avoided evaluative judgments during data collection. Peer debriefing was also conducted to validate interpretations and enhance confirmability.

Ethical principles were strictly observed. Permission was obtained from school authorities prior to data collection. All participants provided informed consent, and anonymity was ensured by using pseudonyms. Participants were informed of their right to withdraw at any time. Data were used solely for academic purposes and handled confidentially in accordance with ethical research standards.

Results and Discussions

The results of this study were obtained from the main findings regarding the learning media utilization strategies implemented at South Teupah 8 Elementary School, South Teupah 13 Elementary School, and East Simeulue 14 Elementary School, as well as their implications for improving student achievement. Data collection was conducted through observation, in-depth interviews, and documentation studies involving teachers and principals as research subjects. The analysis focused on aspects of planning, implementation, and identification of supporting and inhibiting factors in the implementation of learning media utilization strategies in these three educational units.

Planning to choose learning media

Planning a strategy for utilizing learning media is a crucial initial step in the learning process. Good planning enables teachers to formulate clear and focused learning objectives. Through a well-thought-out strategy, teachers can select methods and media relevant to student characteristics and curriculum objectives. Systematic preparation also helps teachers prepare facilities and infrastructure that support optimal learning outcomes. With planning, learning activities can be more focused and efficient. Furthermore, thorough planning plays a role in minimizing obstacles that may arise during the learning process. Utilizing appropriate media helps students understand the material more easily and increases their engagement in learning. Teachers also demonstrate creativity by utilizing the surrounding environment or creating simple media to overcome limited facilities. This reflects the teacher's commitment to maintaining the quality of learning despite various limitations. Thus, strategic planning for utilizing learning media is an important foundation for improving the effectiveness of the teaching and learning process and student achievement.

Interviews with teachers at three elementary schools revealed that instructional media planning is carried out adaptively, adapting to school conditions. Informant AR from Teupah Selatan 8 Elementary School explained that teachers strive to develop lesson plans utilizing available resources. They also adapt media to student characteristics to facilitate understanding. The planning process is conducted through school meetings to discuss learning strategies. The results of these meetings are incorporated into lesson plans and implemented in the classroom. These efforts demonstrate teachers' commitment to managing learning in a focused manner. Planning is considered crucial for creating a conducive learning environment. Teachers understand that instructional media plays a role in increasing student motivation. Therefore, limited facilities do not hinder innovation.

Table 1. Planning Interviews for Selecting Learning Media

Informant	Deskripsi
AR, 37 years old (South Teupah 8 Public Elementary School)	The teachers here strive to develop lesson plans using the available resources, despite numerous limitations. They typically adapt the media to the students' needs to make the material easier to understand. We also frequently discuss appropriate strategies in school meetings, ensuring that the plans we create aren't just written down in lesson plans, but can actually be implemented in the teaching and learning process.
RR, 43, teacher at South Teupah 13 Public Elementary School	We consistently create lesson plans tailored to the school's circumstances. If we don't have the necessary resources, we try to find alternative methods, such as using pictures or creating simple teaching aids. The important thing is that the plan can actually be implemented in the classroom so that the children can more easily understand the lesson.
MH, 45 Years Old East Simeulue State Elementary School 14	Planning is crucial because it guides our teaching. Although the school's facilities are not yet fully equipped, we continue to adapt and seek alternative media. With a clear plan, we can more easily implement learning so that the children can understand the lessons well.

Informant RR from State Elementary School 13 Teupah Selatan emphasized the importance of adapting planning to the availability of school facilities. When facilities are inadequate, teachers seek alternative media such as pictures or simple props. Teacher creativity is a solution to overcome limitations. Meanwhile, informant MH from State Elementary School 14 Simeulue Timur stated that clear planning helps teachers implement learning more effectively. Planning serves as a guideline for achieving learning objectives. Teachers strive to create an engaging learning environment despite limited media. This demonstrates professional awareness in carrying out their responsibilities as educators. With thorough planning, learning activities become more focused. Students can better understand the material. Overall, teachers demonstrate a high commitment to quality learning.

Implementation of the Use of Learning Media

The strategy was implemented by integrating media into classroom learning activities. Teachers at SDN 8 used only blackboards and books. Teachers at SDN 13 used simple digital media such as PowerPoint. Meanwhile, teachers at SDN 14 combined visual and concrete media. Teachers adapted the media to students' levels of understanding. The implementation emphasized active participation through the use of engaging media. Observations showed that students were more enthusiastic when teachers used a variety of media. Teachers provided opportunities for students to engage directly with the media. The principal supported the implementation by providing limited facilities. Despite the limited facilities, teachers innovated by using local materials as alternative media. The implementation was flexible and adapted to classroom conditions. This implementation strategy demonstrated that learning media can enhance the learning atmosphere.

Based on the visual documentation displayed in Figures 1, 2, and 3, it is clear that each teacher has a unique way of implementing learning media according to the conditions and needs of their respective schools. Figure 1 shows how AR, a teacher at SDN 8 Teupah Selatan, utilizes simple learning media based on the surrounding environment to strengthen student understanding.

Meanwhile, Figure 2 shows the implementation of strategies by RR from SDN 13 Teupah Selatan, who adapts learning media to the material and student characteristics in a more interactive and creative manner by utilizing real objects. Figure 3 shows the learning practices of MH, a teacher at SDN 14 Simeulue Timur, who also emphasizes the use of contextual and digital media that are easy for students to understand. All three documentations emphasize that the use of learning media does not always depend on high technology, but rather on the teacher's creativity in managing available tools. With diverse yet focused approaches, these teachers have succeeded in creating an engaging, active, and meaningful learning environment for students in their respective elementary schools.

Table 2. Images of Forms of Implementation of the use of Learning Media

Coding	Information	Figure
AR 37 Years (Teacher)	Figure 1. Source: SDN 8 Documentation, Researcher Data	
RR 43 Years (Teacher)	Figure 2. Source: SDN 13 Documentation, researcher data	
MH 45 Years Old (Teacher)	Figure 3. Source: SDN 14 Documentation, Researcher Data	

All three documentations emphasize that the use of learning media does not always depend on high technology, but rather on the teacher's creativity in managing available tools. With diverse yet focused approaches, these teachers have succeeded in creating an engaging, active, and meaningful learning environment for students in their respective elementary schools.

The visual documentation in Figures 1, 2, and 3 shows that each teacher implemented a unique approach to utilizing learning media, tailored to the conditions and needs of their respective schools. Teacher AR from SDN 8 Teupah Selatan utilized simple, environmentally-based media to help

students understand the material concretely. Meanwhile, teacher RR from SDN 13 Teupah Selatan implemented interactive and creative learning media using real objects relevant to the teaching material and student characteristics. Teacher MH from SDN 14 Simeulue Timur prioritized the use of contextual and digital learning media that were easy for students to understand, thus making the learning process more effective. These three documentations demonstrate that successful learning does not depend on sophisticated technology, but rather on the teacher's ability to innovate and adapt media to the existing situation. Through creativity and proper planning.

Supporting and Inhibiting Factors in the Use of Learning Media

Supporting and inhibiting factors in the use of learning media play a crucial role in determining the success of the learning process in elementary schools. These two factors are interrelated, influencing the extent to which teachers are able to implement effective learning strategies.

Table 3. Interviews on Supporting and Inhibiting factors in the use of Learning Media

Informant	Answers to Researcher Questions
AR (41 years) Teacher at SDN 8 Teupah Selatan	"The most important factors contributing to the successful use of learning media in this school are the facilities, even if they are incomplete, and the support from the school administration. With the available media, we can deliver material more easily and engagingly to students. Furthermore, collaboration between teachers is very helpful, as we can share creative ways to utilize learning resources. All of this keeps us more motivated and improves student achievement." The primary factor inhibiting the use of learning media in elementary schools is the limited availability of facilities. Even when resources are available, their quantity and completeness are still inadequate to support all learning needs. This forces teachers to adapt their teaching strategies to the available conditions, often limiting the variety of media used and preventing them from covering all subjects.
Da (43 years old) Head of SDN 8 Teupah Selatan	Supporting factors for us as teachers include the availability of basic resources, support from the principal, and motivation to continue innovating. With these resources, we can create our own learning media and deliver material in a more engaging way for students. Collaboration between teachers is also very helpful, as we can share ideas and experiences. All of this makes learning strategies more effective and positively impacts student achievement . The main factor inhibiting the use of learning media in elementary schools is the limited availability of facilities. Even when facilities are available, their quantity and completeness are still inadequate to support all learning needs. This forces teachers to adapt their teaching strategies to the available conditions, often limiting the variety of media used and preventing them from covering all subjects.
DS (41 years old) Principal of SDN 14 Simeulue	In my opinion, the success of utilizing learning media depends on the effectiveness of teachers in utilizing learning resources, including the availability of facilities, even if they are simple, support from the school, and teacher motivation to innovate. With this support, teachers can maximize learning media, try new methods, and adapt strategies to make it easier for students to understand the material. All of these factors are very helpful in improving the effectiveness of learning and student achievement at our school . Potential lack of support or cooperation between school staff. While collaboration between teachers is helpful in practice, if it isn't well-established, it will be difficult for teachers to develop their creativity in utilizing simple media. This can lead to reduced learning effectiveness, decreased student motivation, and suboptimal learning outcomes. All of these factors are crucial in improving learning effectiveness and student achievement at our school .

Supporting factors contribute positively to improving the quality of learning through the availability of facilities, school support, and collaboration between teachers. Meanwhile, inhibiting factors arise from limited resources, lack of training, and minimal coordination between educators. These conditions can limit the variety of media use and reduce the effectiveness of classroom learning. Therefore, identifying these two factors is a crucial step in improving the quality of learning.

Thus, a balance between supporting and inhibiting factors will create a more effective and sustainable media utilization strategy to improve student achievement in schools.

Based on the interview results, it was found that the main supporting factors in the strategy of utilizing learning media in elementary schools are the availability of facilities, even if simple, support from the school administration, and cooperation between teachers. Informant AR from SDN 8 Teupah Selatan explained that the availability of learning resources, although limited, is sufficient to help the process of delivering material to make it more interesting and easier for students to understand. The support of the principal also motivates teachers to continue innovating. Teachers feel more motivated because of the collaboration between fellow educators in sharing experiences and creative ideas. Informant Da added that school support and a spirit of innovation are key factors that strengthen the effectiveness of learning strategies. Teacher collaboration in creating simple media encourages more active learning. These factors contribute to increased student motivation and learning achievement.

The main inhibiting factors identified in this study were limited learning facilities and a lack of complete supporting infrastructure at the school. Informants AR and Da stated that although facilities were available, they were still insufficient to support all learning activities. This situation forced teachers to adapt learning strategies to the available resources. As a result, the variety of media used was limited. Informant DS from SDN 14 Simeulue also highlighted the potential lack of support and cooperation between school officials. If collaboration between teachers is not optimal, creativity in creating simple learning media will decline. This can hinder the effectiveness of learning and reduce student motivation. Therefore, institutional support and improved facilities are crucial factors for the success of learning media utilization strategies in elementary schools.

Based on the research results shown in Tables 1, 2, and 3, it can be concluded that the success of learning media utilization strategies in elementary schools is greatly influenced by the availability of facilities, school support, and collaboration among teachers in creating and managing learning media. Even though the available facilities are not yet fully adequate, teachers are able to innovate and adapt strategies to ensure that learning remains effective and engaging for students. Support from the principal and a collaborative spirit among educators are key driving factors in increasing student motivation and achievement. Conversely, limited facilities and a lack of coordination among teachers are obstacles that can reduce learning effectiveness. Therefore, strengthening institutional support and improving learning resources are key to the sustainability of effective learning strategies in elementary schools.

Discussion

This study provides empirical evidence that media utilization strategies in elementary schools are not merely technical practices, but adaptive pedagogical processes shaped by contextual constraints and leadership dynamics. While previous studies emphasize the importance of learning media in clarifying learning messages and increasing motivation (Charline et al., 2023; Kandia et al., 2023), this research extends existing theory by showing that media planning becomes effective only when teachers consciously align media choices with local classroom realities, student characteristics, and resource limitations. In this sense, planning is not a fixed procedural step, but a reflective decision-making process that evolves with classroom conditions. This finding refines the concept proposed by Krathwohl & Anderson, (2010), suggesting that higher-order thinking development through media depends not only on media type, but also on the teacher's contextual judgment in its design and use.

Furthermore, the implementation findings reveal a distinctive pattern: simplicity and contextual relevance of media often outweigh technological sophistication. Teachers at SDN 8, 13, and 14 were able to enhance student engagement through simple visual and concrete media, even in schools with limited digital infrastructure. This challenges the dominant assumption in recent literature that digital media is inherently superior (Ong & Toh, 2023; Randall, 2023). Instead, this study highlights that teacher creativity and pedagogical intent function as the primary drivers of effectiveness, while technology plays a supportive role. This insight adds nuance to Pliushch & Sorokun, (2022) and Bizami et al., (2023) by emphasizing that innovation is pedagogical before it is technological.

Another important contribution of this study lies in identifying synergistic interaction among principals, teachers, and students as a decisive factor in successful media utilization. While previous research has separately examined principal leadership (Jusoh et al., 2024) and teacher motivation

(Anisah, 2023), this study demonstrates that media strategies flourish when leadership support, teacher initiative, and student enthusiasm reinforce one another simultaneously. This triangulated relationship suggests that media utilization should be understood as an organizational culture issue rather than an individual teacher effort alone. This perspective extends existing management-based theories of educational quality by embedding media use within collaborative school ecosystems.

Conversely, this research uncovers a critical tension between policy-driven expectations for digital learning and the actual infrastructural capacity of elementary schools. While studies such as Köroğlu, (2025) and AlGerafi et al., (2023) highlight the potential of advanced digital and AR-based media, findings from this study reveal that the absence of basic technological access transforms innovation into an added burden for teachers rather than an enabler. This gap suggests that without aligned policy interventions particularly in infrastructure provision and targeted training media innovation risks widening inequality between schools. Thus, this study contributes a practical caution to the literature by emphasizing that effectiveness is contingent upon systemic readiness.

Importantly, the impact of media utilization on student achievement in this study confirms prior findings on motivation and academic improvement (Barton et al., 2021; Kaya & Ercag, 2023), but also offers a deeper insight: achievement gains are most evident when media use promotes active participation rather than passive reception. Teachers reported improvements not only in test scores, but also in students' confidence, classroom interaction, and conceptual understanding. This indicates that media functions as a cognitive and affective catalyst, supporting Siregar, (2025) and Lee & Vongkulluksn, (2023) while broadening the interpretation of achievement beyond numerical outcomes.

Finally, the implications of this research go beyond recommending training alone. The findings suggest that teacher competency development must integrate reflective practice, contextual adaptation, and collaborative learning communities. Continuous professional development should therefore emphasize not only how to use media, but how to critically select, adapt, and evaluate media effectiveness in diverse classroom contexts. By linking media utilization strategies with school policy support and collective teacher collaboration, this study contributes a more holistic framework for improving the quality of basic education.

Conclusion

This study identifies three core findings related to instructional media utilization strategies in elementary schools. First, adaptive media planning emerged as a critical determinant of effective learning, where teachers who aligned media selection with student characteristics and classroom conditions were able to create more engaging and meaningful learning experiences. Media planning functioned not merely as a technical step, but as a reflective pedagogical process that guided instruction toward student needs. Second, the creative implementation of varied instructional media increased active student participation and motivation, even in contexts with limited technological resources. The findings demonstrate that simplicity, contextual relevance, and teacher creativity play a more decisive role than technological sophistication alone. Media thus acted as a pedagogical catalyst that supported conceptual understanding and academic achievement. Third, the study highlights the importance of institutional and relational support systems. Principal support, teacher initiative, and student enthusiasm formed a synergistic relationship that strengthened the success of media utilization strategies. Although resource limitations remained a significant challenge, these constraints did not fully undermine learning effectiveness due to teachers' continuous innovation and commitment.

Theoretically, this research enriches the elementary education literature by extending existing instructional media theories largely developed at the secondary level into the elementary school context. The findings reinforce and refine the view that teacher planning and creativity are central to effective media use, positioning media utilization as an adaptive and context-sensitive pedagogical practice rather than a purely technological intervention. Practically, this study provides actionable insights for schools and policymakers. It underscores the need for continuous professional development focused not only on media use skills, but also on reflective planning and contextual

adaptation. Furthermore, the findings suggest that school leadership plays a strategic role in fostering an environment that encourages innovation and collaboration in instructional practices.

Despite its contributions, this study has several limitations. The sample size was relatively small, involving only three principals and three teachers from three elementary schools within a single district, which limits the generalizability of the findings. Additionally, the descriptive qualitative approach does not allow for broader quantitative measurement of learning outcomes. Future research is therefore recommended to involve a larger and more diverse sample across different regions to enhance representativeness. The use of mixed-methods designs may provide more comprehensive insights by integrating qualitative depth with quantitative rigor. Further studies could also explore the effectiveness of more advanced digital or interactive media in elementary settings with varying levels of infrastructure readiness.

In conclusion, this study demonstrates that instructional media strategies, when grounded in adaptive planning, creative implementation, and collaborative support, play a crucial role in improving the quality of elementary education. By synthesizing pedagogical, organizational, and contextual dimensions, this research strengthens the position of instructional media as a central component of effective teaching and learning in elementary schools.

References

- Afifa, K., & Astuti, T. (2024). The effect of digital learning media on motivation and learning outcomes of IPAS. *Jurnal Penelitian Pendidikan IPA*, *10*(6), 3155–3165. <https://doi.org/10.29303/jppipa.v10i6.7513>
- AlGerafi, M. A. M., Zhou, Y., Oubibi, M., & Wijaya, T. T. (2023). Unlocking the potential: A comprehensive evaluation of augmented reality and virtual reality in education. *Electronics*, *12*(18), 3953. <https://doi.org/10.3390/electronics12183953>
- Anisah, A. (2023). Implementation strengthening education character student school Al-anwar foundations through school culture. *Assyfa Journal of Islamic Studies*, *1*(2), 121–129. <https://doi.org/10.61650/ajis.v1i2.296>
- Asad, M. M., Aftab, K., Sherwani, F., Churi, P., Moreno-Guerrero, A.-J., & Pourshahian, B. (2021). Techno pedagogical skills for 21st century digital classrooms: An extensive literature review. *Education Research International*, *2021*(1), 8160084. <https://doi.org/10.1155/2021/8160084>
- Barton, B. A., Adams, K. S., Browne, B. L., & Arrastia-Chisholm, M. C. (2021). The effects of social media usage on attention, motivation, and academic performance. *Active Learning in Higher Education*, *22*(1), 11–22. <https://doi.org/10.1177/1469787418782817>
- Bizami, N. A., Tasir, Z., & Kew, S. N. (2023). Innovative pedagogical principles and technological tools capabilities for immersive blended learning: a systematic literature review. *Education and Information Technologies*, *28*(2), 1373–1425. <https://doi.org/10.1007/s10639-022-11243-w>
- Charline, C., Jo, S., & Frederic, E. (2023). Use of Learning Media to Increase Student Learning Motivation in Junior High Schools. *World Psychology*, *2*(3), 176–189. <https://doi.org/10.55849/wp.v2i3.402>
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications.
- Doolittle, P., Wojdak, K., & Walters, A. (2023). Defining active learning: A restricted systematic review. *Teaching and Learning Inquiry*, *11*. <https://doi.org/10.20343/teachlearninqu.11.25>
- Dubey, U. K. B., & Kothari, D. P. (2022). *Research methodology: Techniques and trends*. Chapman and Hall/CRC.
- Ferdiansah, D., Hartono, R., & Pranata, O. D. (2024). THE SECONDARY AND HIGH SCHOOL STUDENTS BOREDOM IN LEARNING ENGLISH. *Premise: Journal of English Education and Applied Linguistics*, *13*(3), 885–910. <https://doi.org/10.24127/pj.v13i3.10261>
- Jusoh, R., Dasuki, N. M., Shu, Q., & Amram, A. (2024). Sustainable leadership: Encouraging teacher performance and classroom excellence. *International Journal of Academic Research in Business and Social Sciences*, *14*(11), 2350–2359. <https://doi.org/10.46886/IJARBSS/v14-i11/13386>

- Kandia, I. W., Suarningsih, N. M., Wahdah, W., Arifin, A., Jenuri, J., & Suwarma, D. M. (2023). The strategic role of learning media in optimizing student learning outcomes. *Journal of Education Research*, 4(2), 508–514. <https://doi.org/10.37985/jer.v4i2.193>
- Kaya, O. S., & Ercag, E. (2023). The impact of applying challenge-based gamification program on students' learning outcomes: Academic achievement, motivation and flow. *Education and Information Technologies*, 28(8), 10053–10078. <https://doi.org/10.1007/s10639-023-11585-z>
- Köro lu, M. (2025). Pioneering virtual assessments: Augmented reality and virtual reality adoption among teachers. *Education and Information Technologies*, 30(8), 9901–9948. <https://doi.org/10.1007/s10639-024-13159-z>
- Krathwohl, D. R., & Anderson, L. W. (2010). Merlin C. Wittrock and the revision of Bloom's taxonomy. *Educational Psychologist*, 45(1), 64–65. <https://doi.org/10.1080/00461520903433562>
- Kumar, N., Bombale, G. R., Ali, K. F. S., Nagaballi, S., & Shinde, S. D. (2025). *Research methodology*. RK Publication.
- Lee, H.-J., & Vongkulluksn, V. W. (2023). Enhancing mathematics teacher professional learning through a contextualized professional development program. *Teacher Development*, 27(1), 92–115. <https://doi.org/10.1080/13664530.2022.2134195>
- Lu, K., Pang, F., & Shadiev, R. (2021). Understanding the mediating effect of learning approach between learning factors and higher order thinking skills in collaborative inquiry-based learning. *Educational Technology Research and Development*, 69(5), 2475–2492. <https://doi.org/10.1007/s11423-021-10025-4>
- Miles, M. B. (1994). *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks.
- Mujiyatun, M., Khodijah, N., & Abdurrahmansyah, A. (2021). The Impact of Teachers' Pedagogical and Professional Competence on Student Learning Outcomes. *Al-Ishlah: Jurnal Pendidikan*, 13(3), 2865–2876. <https://doi.org/10.35445/alishlah.v13i3.721>
- Munifah, M., & Purwaningrum, S. (2022). Leadership Strategy: Developing School Culture through Digital "Turats" Learning. *Cypriot Journal of Educational Sciences*, 17(1), 68–80. <https://doi.org/10.18844/cjes.v17i1.6682>
- Ong, B., & Toh, D. J. (2023). Digital Dominance and Social Media Platforms: Are Competition Authorities Up to the Task? *IIC-International Review of Intellectual Property and Competition Law*, 54(4), 527–572. <https://doi.org/10.1007/s40319-023-01302-1>
- Padang, A. R. D. N., & Sitepu, M. S. (2023). Utilizing educational media in the field of education fosters active learning within the classroom. *JP (Jurnal Pendidikan): Teori Dan Praktik*, 8(2), 95–100. <https://doi.org/10.26740/jp.v8n2.p95-100>
- Pliushch, V., & Sorokun, S. (2022). Innovative pedagogical technologies in education system. *Revista Tempos e Espaços Em Educação*, 15(34), e16960–e16960. <https://doi.org/10.20952/revtee.v15i34.16960>
- Randall, J. (2023). It ain't near about fair: Re-envisioning the bias and sensitivity review process from a justice-oriented antiracist perspective. *Educational Assessment*, 28(2), 68–82. <https://doi.org/10.1080/10627197.2023.2223924>
- Rincon-Flores, E. G., Castano, L., Guerrero Solis, S. L., Olmos Lopez, O., Rodríguez Hernández, C. F., Castillo Lara, L. A., & Aldape Valdés, L. P. (2024). Improving the learning-teaching process through adaptive learning strategy. *Smart Learning Environments*, 11(1), 27. <https://doi.org/10.1186/s40561-024-00314-9>
- Ristantita, M., Sari, A. Y., Azahra, N. A., Winarsih, I. O., Alkhoiri, M. F., Mubarak, M. F., & Mayarni, M. (2024). Analisis Strategi dan Metode Pembelajaran Bahasa Indonesia dengan Hasil Belajar Siswa di Sekolah Dasar Kelas 5. *Jurnal Pendidikan Guru Sekolah Dasar*, 1(3), 11. <https://doi.org/10.47134/pgsd.v1i3.290>
- Siregar, T. (2025). *Effectiveness of the Problem-Based Learning Model in Improving Students Mathematical Communication Skills and Learning Motivation*. <https://doi.org/10.20944/preprints202510.1562.v1>
- Susanto, R. (2021). Pemetaan kompetensi pedagogik dalam keterkaitan dimensi pengetahuan pedagogik dan profil karakteristik awal. *JPPPI (Jurnal Penelitian Pendidikan Indonesia)*, 7(1), 164. <https://doi.org/10.29210/020211167>

-
- Usmanovna, K. F., Sadikovna, R. K., Sobirkhonovna, M. M., Rakhimovna, T. F., Jorakozevich, M. D., & Sobirjonkizi, U. M. (2025). Barriers and Effective Strategies for Stakeholder Engagement in Inclusive and Language Education: Sustainable Development Goals (SDGs) Perspective. *International Journal of Language Education*, 9(3), 599–618.
<https://doi.org/10.26858/ijole.v1i1.77399>
- Yin, R. K. (2018). *Case study research and applications* (Vol. 6). Sage Thousand Oaks, CA.