Ludi Litterarri
Basic Education
https://nawalaeducation.com/index.php/JLL
Volume 1 Issue 3, November 2024
e-ISSN : 3047-9983
DOI : https://doi.org/10.62872/9fhnz727

Introducing Indonesia's Cultural Diversity through Technology: Traditional Attire Education for Elementary Schools

Ageng Satria Pamungkas[1], Nur Innayah Ganjarjati[2]
Indonesia Institute of the Arts, Surakarta[1], Tunas Bangsa Tarbiyah Science College of Education, Banjarnegara[2]

e-mail: agengsatria28@gmail.com

ARTICLE INFO

Entered :
October 01, 2024
Revised :
November 05, 2024
Accepted :
November 11, 2024
Published :
November 14, 2024

Keywords:
Culture; Elementary Education; Interactive Learning; Technology; Traditional Attire

ABSTRACT

This research explores the effectiveness of using technology as a medium for introducing the cultural heritage of traditional Indonesian attire to elementary school students. Cultural education plays an essential role in shaping students' identities and fostering an appreciation for Indonesia's rich diversity from an early age. Traditional lecture-based methods, which are often limited to textbooks, tend to be less engaging and struggle to deepen students' understanding. Therefore, there is a need for innovative approaches that leverage technology to create a more interactive and contextual learning experience.

The study employs a literature review from academic articles, books, and reports on the use of technology in cultural education. The findings indicate that the use of three-dimensional imagery, videos, and interactive multimedia significantly enhances student interest and comprehension of traditional attire. These technological tools provide visually engaging representations, enabling students to grasp the meaning and cultural significance embedded in traditional clothing elements through a richer and more immersive learning experience.

This research contributes to the development of technology-based educational resources for cultural studies in elementary schools, highlighting the importance of technological innovation in cultural education. Integrating technology into cultural learning offers an effective approach for introducing students to Indonesia's diverse traditional attire, thus enriching their cultural understanding and engagement.

INTRODUCTION

Cultural education plays a vital role in building character and fostering a sense of national identity in elementary school students. The development of students' character and cultural understanding within schools should be harmonized with, and enriched by, regional cultural values (Sugita, 2018). By understanding culture, students gain a deeper appreciation of diversity and the foundational values within society. In elementary school, children begin to internalize the values and norms that shape their cultural heritage. Learning about local traditions helps them appreciate the rich diversity within Indonesia, a country made up of numerous ethnicities, languages, and customs. However,

How to cite:
Example: Pamungkas Ageng S, Ganjarjati Nur I. (2024 Introducing Indonesia's Cultural Diversity through Technology: Traditional Attire Education for Elementary Schools. *Ludi Litterarri*, 1(3), 1-11. DOI: https://doi.org/10.62872/9fhnz727

despite its importance, cultural education is often underemphasized in the school curriculum. Lessons on traditional cultural topics, such as clothing, are frequently limited to textbooks or static images, which provide students with only a basic understanding and limit their engagement with the content. This can pose challenges in sparking students' interest and deepening their appreciation for cultural heritage.

Advances in technology over recent decades have transformed the field of education, enabling new ways to engage students. Technology has evolved beyond a simple instructional tool to become a powerful medium for creating more dynamic, interactive learning experiences. Technologies such as 3D images, videos, and interactive multimedia bring a richer understanding to concepts that are difficult to convey through traditional lectures alone. Educational experiences are more impactful when enhanced with tools like Computer-Assisted Instruction (CAI), which incorporates content delivery, drills/practice, simulations, and games to engage students more fully (Sagala et al., 2017). Integrating technology into cultural education offers an effective solution for introducing culture to students in an engaging way. Tools like 3D imagery, videos, and interactive multimedia create a near-real-world learning experience, enabling students to explore traditional attire in detail—from shapes and colors to symbolic meanings in the community. That technology enhances engagement in learning environments, making cultural subjects more interactive, which is especially relevant for introducing traditional clothing digitally in elementary settings. This integration provides students with a deep, immersive learning experience that promotes greater cultural understanding and appreciation. (Miller, 2018)

Traditional attire is a vital aspect of Indonesia's cultural heritage, imbued with deep meanings and histories. Each piece of traditional clothing carries philosophical significance, reflecting the unique identity of each ethnic group across Indonesia. The specific elements and symbols in these garments foster pride and appreciation for the nation's cultural diversity (Widyaningrum & Sarinastiti, 2020). By leveraging interactive multimedia, students can gain a deeper understanding of traditional attire through engaging visualizations that clarify cultural nuances. Integrating technology into education has been shown to have a powerful effect on student motivation and engagement, especially in the digital age, where students naturally connect with technological tools. This technological approach allows students to explore culture in ways that are interactive, immersive, and suited to their digital-native learning preferences.

Currently, cultural education in elementary schools often depends on conventional media such as textbooks and static images. Although these resources provide information, they lack interactivity and do not fully engage students. Traditional lecture-based methods of teaching culture are typically one-way, with students passively receiving information rather than engaging actively. To address this, teachers have a range of methods and media available for teaching cultural arts in schools, such as lectures, discussions, demonstrations, practice, problem-solving, peer learning, field trips, and innovative media formats like printed materials, images, audio, visual media, audiovisuals, and multimedia (Arnita, 2017). The use of technology can transform students into active participants in the learning process. Tools such as 3D images, videos, and interactive multimedia allow students to explore the intricacies of traditional attire in a detailed and engaging manner. By interacting with these digital media, students can observe the shapes, colors, and patterns of traditional clothing virtually and access additional cultural context through audiovisual aids.

The use of technology in cultural education also supports the inclusivity of learning. By utilizing technology, students across different regions can access the same information about traditional attire from various ethnic groups in Indonesia. This helps overcome the limitations faced by students who may not have the opportunity to experience traditional clothing from other regions firsthand. Given this context, the purpose of this research is to explore how technology can be used in introducing culture, particularly traditional attire, to elementary school students. This study will examine how technology can facilitate a more interactive, in-depth, and meaningful way for students to learn about culture, enabling them to develop a deeper understanding of Indonesia's cultural identity.

METHODOLOGY

This study employs a literature review methodology, focusing on relevant sources such as books, journals, scholarly articles, and prior research concerning the use of technology in teaching cultural subjects, particularly traditional attire, in elementary schools. A literature review involves collecting and analyzing existing publications—books, journals, and magazines—that relate to the research problem and objectives (Melfianora, 2019). This approach was chosen to gain a comprehensive understanding of fundamental concepts, theoretical frameworks, and previous findings on the role of technology in cultural education. Through this, the study aims to gather critical insights and synthesize key information that will inform and support the analysis within this research.

The literature review process in this study follows a structured approach involving identification, selection, and thematic analysis of relevant literature. Initially, a comprehensive search is conducted to locate scholarly sources that discuss the integration of technology, cultural education, and primary school learning. This search prioritizes high-quality sources that specifically address topics such as the role of technology in teaching cultural subjects, the effective approaches in primary education, or insights into technology's role in cultural appreciation. In the selection phase, the gathered literature is filtered for relevance to the study's topic and goals. Only sources meeting certain criteria, such as those examining cultural education through technology or providing evidence of digital approaches' effectiveness in elementary settings, are included. This ensures that the review is rooted in research closely aligned with the study's focus on enhancing cultural education with technology.

The selected literature is then analyzed thematically, with information categorized under key themes: the benefits of technology in cultural education, challenges in implementing technology in classrooms, and its impact on character formation in students. Relevant findings are aligned with the study's research questions, creating a coherent foundation for the analysis. This literature review serves as both a theoretical basis and a foundation for practical recommendations on integrating technology as a tool for cultural education in elementary schools. By identifying effective practices and potential barriers, the study aims to provide valuable guidance on using digital tools to foster cultural awareness and appreciation among young learners.

RESULTS AND DISCUSSION

A. RESULT

1. Identification of Literature Findings

Various types of technology have proven highly effective in introducing culture to elementary school students, including 3D images, videos, and interactive multimedia. Each type of technology contributes uniquely to students' understanding of culture, especially through strong visual, interactive, and emotional engagement aspects. Findings indicate that these technologies—3D images, videos, and interactive multimedia—are particularly effective in teaching cultural subjects to elementary students by leveraging powerful visual elements. Technology is expected to help improve the quality of education, especially as a method and media in the learning process (Kus Eddy Sartono et al., 2022). For instance, 3D technology allows students to view traditional attire from multiple angles, examine details that are difficult to capture in static images, and experience the visual dimensions of clothing more realistically. This technology enhances deeper learning, especially for students with a visual learning style, by providing a more immersive experience.

Videos are also effective in conveying cultural aspects in a narrative format, helping students visualize the stories behind each element of traditional attire. Through video, students can not only learn about the shapes and colors of traditional clothing but also understand the symbolism behind clothing designs, historical contexts, and the values embedded within these cultural items. Research suggests that video impacts students' emotional engagement, as they can hear stories and watch demonstrations, creating an emotional connection with the material. Impacts sizes ranged from.03 to.07, indicating that video styles had a small to medium (Deng, 2024).

Interactive multimedia is the most effective technology because it combines various elements—text, images, animations, and sound—into one cohesive learning platform, multimedia attracts learners and allows learning to find new things that cannot be done manually (Tuhuteru et al., 2023). This technology enables students to participate actively in the learning process, such as by arranging or selecting attributes of traditional attire within interactive multimedia tools. Findings indicate that student engagement is higher when they can interact directly with the material. This hands-on interaction reinforces their memory and comprehension, supporting the development of in-depth cultural knowledge.

Overall, the study's findings show that utilizing technologies such as 3D images, videos, and interactive multimedia in cultural education at the elementary level is highly effective. These tools not only enrich students' learning experiences visually and interactively but also foster their emotional engagement. Consequently, this technology-based approach is highly recommended for implementation in cultural education in elementary schools, as it allows students to gain a deeper, more contextual understanding of culture.

Technology-based learning is more effective than traditional methods in many respects. Compared to traditional methods, technology-based learning enhances student engagement, enriches learning experiences, and facilitates independent learning. Technology enables the delivery of materials through interactive multimedia formats, such as videos, simulations, and educational applications, which strengthen students' understanding through richer and more dynamic visualizations. Students are also more motivated and engaged when they can interact directly with the lesson material, compared to traditional lecture methods, which tend to be more passive.

2. Advantages and Benefits of Technology in Cultural Education

The use of technology in teaching traditional attire and cultural education to elementary school students offers several advantages, including increased student engagement, more compelling visualizations, and improved memory retention. Technology allows students to explore cultural elements in greater depth, such as the colors, shapes, and symbols on traditional clothing (Kern, 2006). This research indicates that technology in cultural education has proven particularly effective in enhancing student engagement. Interactive technologies like 3D images, videos, and interactive multimedia create a more engaging learning experience, where students can directly explore cultural elements through media that integrate sound, images, and text (Gagné et al., 2004). This level of interactivity actively involves students in their learning, in contrast to traditional lecture methods, which tend to be passive. Increased engagement motivates students to continue learning and deepens their understanding of local culture, particularly the traditional attire that represents their regional identity (Purbasari, 2016).

The more attractive visualizations provided by technology allow students to understand culture in a way that feels more tangible and relevant. Students study traditional clothing by viewing 3D images or interactive videos, which display the clothing from various angles. Rich visualizations enable students to observe details such as color, patterns, and forms that may be difficult to comprehend through static images or descriptive text alone. The ability to virtually view and manipulate cultural objects sparks students' curiosity and helps them understand cultural elements on a deeper level. Additionally, research shows that technology positively impacts memory retention, particularly in recalling key elements of traditional attire, such as the symbols and meanings embedded within the garments. Multimedia-based technology enhances memory by combining various forms of information—such as images, sounds, and text—that are easier to remember, reinforcing the formation of long-term memories in students (M Fahrozan Zohri, Idi Jangcik, 2023). Through technology, students can view cultural symbols integrated into traditional attire and understand the philosophical meanings behind them, which helps them not only recall the physical form but also appreciate the cultural values conveyed.

The integration of technology in cultural education allows students to engage with culture on a deeper level through interactivity, visualizations, and improved memory retention. This approach is expected to support the development of character and cultural identity in students, as they not only learn about traditional attire theoretically but also feel more connected to their own culture (Sugita, 2018). Furthermore, technology supports diverse learning styles, offering content that can be tailored to visual or kinesthetic learners. The study also indicates that technology accommodates different learning preferences, allowing each student to learn according to their individual needs. Visual learners benefit from content rich in images, graphics, and videos, providing a more vivid learning experience. Meanwhile, kinesthetic learners, who prefer learning through physical activity or object manipulation, benefit from technologies that allow them to interact directly with cultural materials. This helps each student understand the material optimally, accommodating various learning styles and making cultural education a more inclusive and personalized experience.

3. Challenges and Obstacles in Technology Implementation

The challenges identified in literature include infrastructure limitations, teachers' technology skills, and schools' readiness to integrate technology into the curriculum. The research indicates that the main challenge in applying technology for cultural education in elementary schools is the lack of infrastructure, such as uneven internet access and limited digital devices in some schools (Shpeizer, 2019). The literature highlights that many schools, particularly in remote areas, still lack stable internet connections or sufficient technology to support digital-based learning. As a result, these limitations hinder the effective implementation of technology in cultural education, leaving students in such areas at a disadvantage compared to those in better-equipped schools. Without the proper infrastructure, the consistent use of technology in cultural learning becomes challenging, affecting the overall quality and reach of the lessons.

Another significant challenge is the gap in teachers' technology skills. Many elementary school teachers have limited experience with or training in using technology for instructional purposes. This lack of familiarity can make it difficult for them to integrate digital tools effectively into their cultural education programs. Research suggests that targeted professional development is crucial to equip teachers with the necessary skills to use educational technology confidently and creatively. With proper training in digital tools, teachers can enhance their ability to deliver cultural content, such as traditional clothing, in an engaging and effective manner (Antonietti et al., 2022).

Additionally, the readiness of schools to incorporate technology into the curriculum presents another hurdle. This process involves significant adjustments, such as revising curricula, reallocating instructional time, and altering teaching methods to integrate technology effectively. Many schools may lack the administrative support or clear policies required to make this transition successful (Antonietti et al., 2022). Furthermore, limited funding and resource management pose major obstacles, particularly in schools with constrained budgets, where the financial means to invest in technology are often insufficient.

These challenges underscore the need for a comprehensive approach to successfully implementing technology in cultural education. Overcoming these barriers requires significant investment in improving infrastructure, providing targeted professional development for teachers, and ensuring strong support from school administrators and government bodies. Collaboration across these key areas can address the disparities and make modern, interactive cultural education accessible to all students, ensuring that they gain a deeper, more meaningful understanding of their heritage and national identity.

4. Comparison to Traditional Lecture-Based Learning

Technology adds significant value to cultural education when compared to traditional lecture-based methods. This research indicates that technology fosters active engagement in learning, allowing students to move beyond passive absorption of information. With the use of dynamic media such as 3D images, videos, and interactive multimedia, students can engage more deeply with cultural content, especially when studying aspects like traditional clothing. These technologies provide students with visual and immersive representations of the culture they are learning about, making the learning experience more meaningful and contextual (Georgiou et al., 2021). This hands-on, interactive approach not only makes learning more enjoyable but also enhances information retention and comprehension.

Unlike traditional lectures, which tend to present content in a one-way, teacher-centered manner, technology offers a more personalized and varied approach to cultural learning. Students can explore cultural topics through multimedia resources tailored to their individual learning styles, whether visual, kinesthetic, or auditory. This customization is particularly important in a diverse classroom where students' learning preferences vary. Traditional lecture methods, however, often fail to accommodate these differences, which can result in disengagement or confusion. By contrast, technology allows for adaptive learning experiences, enabling students to learn at their own pace and in ways that suit their strengths, ultimately improving both their understanding and retention of the material (Bo & Haiyan, 2008).

Moreover, technology provides access to cultural resources from across the globe, offering students a wider and more diverse perspective. For instance, interactive multimedia tools allow students to explore traditional attire not only from different regions of Indonesia but from other countries as well, broadening their cultural awareness. In contrast, lecture-based learning typically confines students to the verbal information provided by the teacher, often lacking visual aids or in-depth resources (Kang & Kim, 2021). Technology allows educators to present richer, more varied content, thereby deepening students' understanding of cultural diversity.

In summary, the integration of technology into cultural education offers several advantages over traditional lecture-based methods. These include increased student engagement, more personalized learning experience, and improved retention of cultural knowledge. Technology's interactive, multimodal approach makes learning more engaging and allows students to understand cultural concepts in a deeper, more contextual way. As such, this research strongly supports the adoption of technology as a more effective and efficient method for enhancing cultural education in elementary schools, helping students not only to learn about but also to appreciate and respect the diverse cultures around them.

5. Recommendations for Implementing Technology in Elementary Schools

Incorporating technology into elementary schools to teach cultural education, particularly traditional attire, is essential for enhancing student engagement and understanding. This study recommends that elementary schools begin integrating technology into cultural education, with a focus on introducing students to the cultural significance of traditional clothing. The visual and interactive nature of modern technologies—such as 3D images, videos, and interactive multimedia—can make learning more dynamic, engaging, and contextual rich (Gagné et al., 2004). By using technology, students can more easily comprehend the forms, colors, and meanings behind traditional attire from various regions of Indonesia. Furthermore, technology provides a valuable way to accommodate different learning styles, fostering deeper engagement and helping students connect with cultural lessons in ways that align with their individual needs.

To implement this effectively, elementary schools are encouraged to adopt technology that supports interactive learning experiences. Technologies offering 3D visualizations, which allow students to explore and interact with cultural elements—such as traditional clothing, accessories, and ornaments—provide a more hands-on learning approach (M Fahrozan Zohri, Idi Jangcik, 2023). These tools can deepen students' understanding of the intricate visual details and cultural symbolism embedded in traditional attire. This approach is particularly beneficial for visual and kinesthetic

learners, who may find it challenging to engage with more passive methods like traditional lectures. Interactive experiences help students connect with the material in a more immersive and tangible way.

A critical recommendation is to invest in professional development for teachers, equipping them with the digital literacy skills necessary to fully leverage technology in cultural education. Training teachers in the use of digital tools and media is essential for them to create meaningful and effective lessons (Gil & Dueñas, 2023). Teachers who are confident in using technology can craft more engaging, interactive, and well-structured lessons that integrate visual, auditory, and kinesthetic elements to enhance students' understanding of cultural topics like traditional clothing. With adequate training, educators will be better positioned to use technology as a primary tool to engage students and enrich the learning experience.

Additionally, schools must ensure the infrastructure needed to support the seamless integration of technology into the curriculum. This includes providing reliable internet access, as well as sufficient digital devices such as computers, tablets, or interactive whiteboards. A robust technological infrastructure ensures that all students have equal access to technology-enhanced learning. Schools should also consider providing devices for students who may not have access to them at home, ensuring that the technology-driven learning experience is inclusive for all (Schmitz et al., 2023).

Moreover, schools can strengthen their efforts by collaborating with government agencies and private sector partners to secure funding and resources for the implementation of technology-based cultural curricula. Such partnerships can help address budget constraints and ensure that schools have the necessary tools and support to integrate technology effectively. With proper financial backing and organizational support, schools can develop a technology-rich cultural education program that fosters a deeper understanding and appreciation of the diversity in traditional clothing, promoting cultural awareness and respect from an early age.

DISCUSSION

This research underscores the pivotal role of technology in enhancing students' understanding of local culture, particularly traditional attire. By integrating technology into the learning process, students gain access to richer, more immersive educational experiences, especially through visual and interactive tools. Mishra and Koehler Technologies such as 3D visualizations, videos, and interactive multimedia enable students to explore traditional clothing from various regions, closely examine its intricate details, and connect each garment to broader cultural values (Abbitt, 2011). This approach resonates with Mayer's (2009) multimedia learning theory, which posits that the simultaneous use of visual and auditory elements significantly enhances both memory retention and comprehension.

Moreover, technology accommodates diverse learning styles, fostering a more inclusive and personalized educational environment. According to Dunn and Dunn (2005), students exhibit different learning preferences, including visual, auditory, and kinesthetic modalities (Bin Jardan & Al Jaffal, 2023). Technology allows content to be delivered in a flexible, adaptable format, catering to these varying needs. For instance, visual learners benefit from seeing traditional attire through images and videos, while kinesthetic learners engage more deeply with interactive simulations or applications, where they can manipulate digital representations of cultural artifacts. This multifaceted

approach not only enriches the learning experience but also encourages greater student engagement with cultural subjects.

However, despite its significant potential, the widespread implementation of technology in elementary schools faces several substantial challenges. Research by Zhao and Frank (2003) highlights infrastructure issues—specifically, inadequate internet access and a lack of digital devices—as primary obstacles to the successful integration of technology into educational curricula (Lowell & Yan, 2024). In many rural or underfunded schools, limited access to technology prevents students from fully benefiting from digital learning experiences, including those related to cultural education.

In addition to these infrastructural challenges, the technological competence of educators plays a crucial role in the success of technology integration. Koehler and Mishra (2009) emphasize that teachers' proficiency with technology is essential for effective pedagogical practice. Unfortunately, many elementary school teachers lack sufficient training in using digital tools for instructional purposes, leading to a sense of uncertainty or reluctance in adopting new teaching methods. To address this, ongoing, targeted professional development programs are essential to equip teachers with the skills and confidence necessary to incorporate technology into their teaching practices effectively.

Furthermore, the readiness of schools to embrace and implement technology is a critical factor in its successful integration. Fullan's (2001) model of educational change stresses the importance of organizational readiness, which encompasses planning, policy support, and financial investment. Schools must undergo structural transformations to create an environment conducive to technology integration. Without adequate institutional support, the application of technology may remain inconsistent, yielding only temporary results rather than fostering long-term educational change.

This study calls for a collaborative effort between government, educational institutions, and local communities to address these challenges and ensure the successful integration of technology into cultural education. Ensuring equitable access to digital tools, reliable internet infrastructure, and comprehensive teacher training will help bridge the digital divide and create more inclusive learning opportunities. By overcoming these barriers, technology can become a powerful tool—not only for enhancing students' understanding of culture but also for instilling cultural values and a sense of national identity. In this way, technology evolves from being merely a teaching aid to becoming a transformative force in preserving and sharing cultural heritage in the digital era.

CONCLUSION

Based on the findings of this research, it can be concluded that technology plays a pivotal role in introducing culture, particularly traditional clothing, to elementary school students. Technologies such as 3D images, videos, and interactive multimedia have proven highly effective in enhancing student engagement and deepening their understanding of the cultural significance of traditional attire. Through immersive visualizations and interactive activities, students not only acquire information but also connect emotionally and cognitively, which helps them better retain and appreciate Indonesia's rich cultural diversity.

The research also demonstrates that technology can address the diverse learning styles of students, including visual, auditory, and kinesthetic learners. By tailoring the presentation of cultural content to match individual learning preferences, technology enhances both the effectiveness and comfort of the learning experience. However, several

challenges were identified, including limited technological infrastructure, insufficient technology skills among teachers, and the varying levels of readiness among schools to integrate technology comprehensively into their curricula.

To maximize the potential of technology in teaching cultural content—such as traditional clothing—it is essential to equip both students and teachers with the necessary tools and resources. Key actions include providing access to technological infrastructure, offering specialized training for teachers, and ensuring that the curriculum is fully prepared to incorporate technology. With the right support systems in place, technology can become a powerful and enriching educational tool, one that deepens students' understanding of cultural values and fosters a strong sense of national identity from an early age.

LITERATURE

Abbitt, J. T. (2011). Measuring technological pedagogical content knowledge in preservice teacher education: A review of current methods and instruments. *Journal of Research on Technology in Education*, *43*(4). https://doi.org/10.1080/15391523.2011.10782573

Antonietti, C., Cattaneo, A., & Amenduni, F. (2022). Can teachers' digital competence influence technology acceptance in vocational education? *Computers in Human Behavior*, *132*. https://doi.org/10.1016/j.chb.2022.107266

Arnita, A. (2017). Inovasi Metode dan Media dalam Pembelajaran Seni Di Sekolah. *Jurnal Konseling Dan Pendidikan*, *5*(1). https://doi.org/10.29210/114800

Bin Jardan, A., & Al Jaffal, M. (2023). Teachers and Learning Preferences of Students with Attention Deficit Hyperactivity Disorder. *Humanities and Management Sciences - Scientific Journal of King Faisal University*. https://doi.org/10.37575/h/edu/220031

Bo, X., & Haiyan, Y. (2008). Case study method of teaching under web-based learning environment. *Proceedings - International Conference on Computer Science and Software Engineering, CSSE 2008*, *5*. https://doi.org/10.1109/CSSE.2008.22

Deng, R. (2024). Effect of video styles on learner engagement in MOOCs. *Technology, Pedagogy and Education*, *33*(1). https://doi.org/10.1080/1475939X.2023.2246981

Gagné, R. M., Wager, W. W., Golas, K. C., & Keller, J. M. (2004). Principles of instructional design. In *Performance Improvement*.

Georgiou, Y., Tsivitanidou, O., & Ioannou, A. (2021). Learning experience design with immersive virtual reality in physics education. *Educational Technology Research and Development*, *69*(6). https://doi.org/10.1007/s11423-021-10055-y

Gil, V., & Dueñas, P. M. (2023). Designing and Implementing a Professional Programme for ICLHE Teachers: Beyond Linguistic and Communicative Competence. *Journal of Language Teaching and Research*, *14*(4). https://doi.org/10.17507/jltr.1404.19

Kang, H. Y., & Kim, H. R. (2021). Impact of blended learning on learning outcomes in the public healthcare education course: a review of flipped classroom with team-based learning. *BMC Medical Education*, *21*(1). https://doi.org/10.1186/s12909-021-02508-y

Kern, R. (2006). Perspectives on Technology in Learning and Teaching Languages. *TESOL Quarterly*, *40*(1). https://doi.org/10.2307/40264516

Kus Eddy Sartono, E., Ambarsari, R., & Herwin, H. (2022). Interactive multimedia based on Indonesian cultural diversity in Civics learning in elementary schools. *Cypriot Journal of Educational Sciences*, *17*(4). https://doi.org/10.18844/cjes.v17i4.7136

Lowell, V. L., & Yan, W. (2024). Applying Systems Thinking for Designing Immersive Virtual Reality Learning Experiences in Education. *TechTrends*, *68*(1). https://doi.org/10.1007/s11528-023-00922-1

M Fahrozan Zohri, Idi Jangcik, Y. (2023). Multimedia Pembelajaran Pengenalan Pakaian Adat. *Simki.Unpkediri.Ac.Id*, *5*(1), 71–83. http://simki.unpkediri.ac.id/mahasiswa/file_artikel/2017/fc47014a1fe40292650e7f5bab763d0f.pdf

Melfianora. (2019). Penulisan Karya Tulis Ilmiah dengan Studi Literatur. *Open Science Framework*.

Miller, T. (2018). Developing numeracy skills using interactive technology in a play-based learning environment. *International Journal of STEM Education*, *5*(1). https://doi.org/10.1186/s40594-018-0135-2

Purbasari, I. (2016). Local culture as learning resources and teaching media to build student's character in Kudus. *Proceeding The 2 International Conference On Teacher Training and Education Sebelas Maret University*, *2*(1).

Sagala, G., Mesran, M., Sutiksno, D. U., Yuhandri, & Suginam. (2017). Perancangan Aplikasi Pembelajaran Pakaian Adat Asli Indonesia Berbasis Multimedia Dan Web Menerapkan Metode Computer Assisted Instruction (CAI). *JURIKOM (Jurnal Riset Komputer)*, *4*(4), 12–15. http://www.stmik-budidarma.ac.id/ejurnal/index.php/jurikom/article/view/711

Schmitz, M. L., Antonietti, C., Consoli, T., Cattaneo, A., Gonon, P., & Petko, D. (2023). Transformational leadership for technology integration in schools: Empowering teachers to use technology in a more demanding way. *Computers and Education*, *204*. https://doi.org/10.1016/j.compedu.2023.104880

Shpeizer, R. (2019). Towards a successful integration of project-based learning in higher education: Challenges, technologies and methods of implementation. *Universal Journal of Educational Research*, *7*(8). https://doi.org/10.13189/ujer.2019.070815

Sugita, I. W. (2018). PENDIDIKAN BUDAYA DAN KARAKTER. *GUNA WIDYA: JURNAL PENDIDIKAN HINDU*, *5*(2). https://doi.org/10.25078/gw.v5i2.641

Tuhuteru, L., Misnawati, D., Aslan, A., Taufiqoh, Z., & Imelda, I. (2023). The Effectiveness of Multimedia-Based Learning To Accelerate Learning After The Pandemic At The Basic Education Level. *Tafkir: Interdisciplinary Journal of Islamic Education*, *4*(1). https://doi.org/10.31538/tijie.v4i1.311

Widyaningrum, B. W., & Sarinastiti, I. (2020). Developing Android-Based E-Module to Teach Narrative Text for The Eighth Grade of Junior High School. *Language and Language …*.