



Development of Digital Teaching Materials for Imaginative Stories Based on Ethnoliteracy for Indonesian Language Learning in Elementary Schools

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Abstract: This study aims to develop valid, practical, and effective ethnoliteracy-based digital teaching materials for imaginative story learning in elementary schools. The research employed a Research and Development (R&D) method using the 4D Thiagarajan model, consisting of the definition, design, development, and dissemination stages. The participants included fifth-grade students in Tasikmalaya Regency, teachers, and expert validators in language, content, and media. Data were collected through tests, questionnaires, interviews, observations, and documentation, and analyzed using qualitative and quantitative techniques. The needs analysis indicated a strong demand for digital teaching materials among teachers (94.7%) and high student interest in digital media (92.6%) and visual illustrations (90.8%). Expert validation scores demonstrated that the product was feasible in terms of language (3.4), content (3.4), and highly feasible in media design (3.6). Field trials showed that the digital teaching materials were practical, engaging, and enhanced students' imaginative story-writing abilities and ethnoliteracy understanding. The effectiveness was reflected in the improvement of students' average scores from 70.34 (pretest) to 81.45 (posttest), with an average N-Gain of 0.40 categorized as moderate. Overall, the ethnoliteracy-based digital teaching materials are feasible and effective as an innovative resource for Indonesian language learning and contribute to strengthening students' cultural identity in the digital era.

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Introduction

The era of Industry 4.0 and Society 5.0 demands digital transformation in the field of education. However, these changes also raise concerns about the erosion of cultural identity due to the increasingly strong flow of globalization (Purnomo, 2022). In the context of Indonesian language learning at elementary schools, particularly in imaginative story writing, various empirical problems are still encountered. Common issues found in teaching imaginative story writing include low student interest in reading, limited utilization of digital media, and the suboptimal ability of teachers to present creative and contextual learning (Kurniawati & Saputra, 2023). These issues are certainly one of the obstacles preventing the goals of imaginative story learning from being achieved in elementary school students.



On the other hand, the teaching materials used are mostly conventional printed books with general content that is less engaging and far removed from the students' cultural context (Pratiwi et al., 2021). In fact, teaching materials are an important component that supports the achievement of learning objectives and facilitates students in learning independently (Sari & Hidayat, 2022). The absence of innovative teaching materials relevant to students' lives results in imaginative story learning being less meaningful and failing to provide an optimal literacy experience. The presence of innovative teaching materials can enhance student motivation in learning, making it easier to achieve the learning objectives.

Meanwhile, the integration of local cultural values into learning presents an opportunity to bridge the gap between traditional knowledge and modern education, enriching students' understanding and fostering a deeper connection to their cultural heritage. It is crucial for strengthening students' cultural identity from an early age (Nurani, 2024). Imaginative stories based on ethno-literacy, which emphasize understanding of local culture, can foster appreciation for local wisdom and help students face the challenges of globalization (Saputra et al., 2023). Strengthening cultural literacy through imaginative stories also becomes an effective approach in shaping character while enriching students' cultural perspectives (Hidayah et al., 2023). With the integration of local cultural values, students are not only learning about stories but also learning to transform cultural values into their daily lives.

Previous studies have shown that digital media in language learning can enhance students' motivation and learning outcomes. With the presence of digital media, students' enthusiasm for learning improves, leading to better learning outcomes. Additionally, the use of culture-based content has proven effective in preserving culture and building students' character (Aziza et al., 2023). The presence of content or teaching materials that integrate local culture can help students gain a deeper understanding of the culture around them. Several studies have begun to combine technology with culture, such as animated videos of local legends and educational games that carry cultural themes (Fadilah & Hermawan, 2023). The integration of technology and culture aims to make the process of transferring cultural knowledge to students more focused and enjoyable.

However, there is a significant research gap. First, the majority of digital teaching materials focus more on technological aspects without being supported by a strong literacy foundation (Sari dkk., 2022). Although the use of technology is crucial, the essence of literacy must still be strengthened. Secondly, culture-based teaching materials are still predominantly in the form of conventional printed materials (Wijayanti & Rahman, 2023). Printed content or teaching materials are unable to reach students widely and are considered too monotonous, making them less appealing. Thirdly, the synergistic integration of interactive digital platforms and an ethno-literacy approach in the context of imaginative stories is still very limited (Khadijah et al., 2022). This limitation certainly makes imaginative stories less varied in terms of themes and contexts presented. Therefore, this research is important to fill that gap by introducing digital teaching materials that are not only technologically innovative but also have a strong cultural literacy foundation and have been proven effective in Indonesian language learning at elementary schools.

The purpose of this research is to develop and test the validity of digital teaching materials for imaginative stories based on ethno-literacy according to content experts, language experts, and media experts, to test its practicality based on the feedback from teachers and students, and to analyze its effectiveness in improving imaginative story-writing skills based on ethno-literacy for elementary school students. Theoretically, this research contributes to enriching the model of integrating ethno-literacy into digital media as a



culturally-based pedagogical innovation in Indonesian language learning (Purnamasari & Hidayatullah, 2023). Practically, the product produced is expected to be a solution for teachers in the form of engaging and contextual digital teaching materials, providing meaningful learning experiences for students, and supporting policies for strengthening cultural literacy and character development through digital media (Ramadhani & Siregar, 2023). Thus, the development of these teaching materials is expected to serve as a bridge between the richness of tradition and technological advancement, creating a generation that is digitally advanced yet still firmly rooted in local culture (Suryana & Wijayanti, 2023).

Research Method

This research method uses Research and Development (R&D) by adopting the 4D model from Thiagarajan. This model consists of four main stages: definition, design, development, and dissemination (Gall et al., 2018). The definition stage is carried out by analyzing the needs of teachers and students, reviewing literature, analyzing the curriculum, and identifying student characteristics to map learning problems and establish the theoretical foundation. The design stage includes developing the script for imaginative stories based on ethno-literacy, determining the interactive e-book format, creating storyboards, designing visuals, and preparing evaluation instruments to produce the digital teaching material design.

The development stage involves producing digital teaching materials that combine text, visuals, audio, and interactivity, which are then validated by experts, revised, and tested on fifth-grade students to obtain a feasible and effective product. The dissemination stage is conducted through publishing research results, teacher training, distributing teaching materials via digital platforms, and continuous evaluation to ensure widespread utilization.

This research was conducted in elementary schools in Tasikmalaya Regency. The subjects of the research included fifth-grade elementary school students as users of the digital teaching materials in the learning process, class teachers who acted as evaluators of the effectiveness of the teaching materials, language experts (Indonesian language lecturers) who validated the teaching content, media experts (information technology lecturers) who assessed the technical aspects and interactivity of the digital teaching materials, and cultural experts (local cultural figures) who validated the cultural accuracy of the imaginative stories developed.

Data collection techniques in this study included tests, observations, interviews, documentation, and questionnaires. Tests were used to measure students' understanding of the imaginative story text through pretests and posttests in the experimental class, as this method allows the researcher to observe improvements in skills after the treatment (Sugiyono, 2022; Arikunto, 2021). This study uses a quasi-experimental design with the One Group Pretest–Posttest Design model, where sampling is done using random sampling techniques to randomly select the experimental class. Observations are made to assess the implementation of learning using digital teaching materials and student engagement, while interviews are conducted to explore the perceptions and experiences of both teachers and students regarding the implementation of the teaching materials. Documentation, such as photos of activities, students' work, and other supporting documents, is used as supplementary material. Questionnaires are given to language experts, media experts, cultural experts, and teachers to assess the feasibility of the content, design, and the cultural relevance of the digital teaching materials.

Data analysis in this study is performed both qualitatively and quantitatively. Qualitative analysis is used to understand the implementation process and responses to the use of digital teaching materials for imaginative stories based on ethno-literacy, through

observations and interviews, analyzed based on three stages: data reduction, data presentation, and conclusion drawing/verification. (Miles et al., 2014). Meanwhile, quantitative analysis is conducted by comparing the pretest and posttest results to determine the improvement in students' abilities through N-Gain calculations, as well as testing significance using a t-test (Hake, 1999; Sugiyono, 2022). The results of both analyses complement each other in explaining the effectiveness and practicality of digital teaching materials in imaginative story learning.

Result and Discussion

Definition Stage

In this study, a needs analysis was conducted for the development of digital teaching materials for imaginative stories based on ethno-literacy in Indonesian language learning at elementary schools. The needs analysis was carried out with elementary school teachers and students in Tasikmalaya, as in Research and Development (R&D) studies, the needs analysis stage is a crucial foundation to ensure that the resulting product aligns with the characteristics of the users and addresses the field-related problems (Gall et al., 2018; Branch, 2009). This stage is also necessary to determine the specifications of the teaching materials that are relevant to the learning objectives and the context of the students (Mayer, 2020). Here are the results of the needs analysis of digital teaching materials from the perspective of teachers and students.

Table 1. Results of Teachers' Needs Analysis

Aspect	Indicator	Percentage (%)	Category
Need for Teaching Materials	Teachers require digital teaching materials	94.7	Very High
Cultural Integration	Teachers require teaching materials integrated with local culture	49.5	Low
Student Motivation	Teachers assess that students are more motivated with digital teaching materials	91.4	Very High
Availability of Materials	Teachers have difficulty finding teaching materials that align with cultural context	72.5	High

Based on the needs analysis of elementary school teachers in Tasikmalaya City, it was revealed that 94.7% of teachers expressed a very high need for innovative digital teaching materials for imaginative story learning, while the integration of local culture in existing teaching materials remains low, at only 49.5%. A total of 91.4% of teachers believe that digital teaching materials can significantly improve students' learning motivation compared to conventional teaching materials. A critical finding showed that 72.5% of teachers face difficulties in obtaining culture-based teaching materials that align with the learning context. The gap between the high demand for ethno-literacy-based digital teaching materials and the limited availability of such materials in the field emphasizes the urgency of this development. Therefore, the research to develop digital teaching materials for imaginative stories based on ethno-literacy is a highly relevant and pressing need that must be addressed immediately.

Table 2. Results of Students' Needs Analysis

Aspect	Indicator	Percentage (%)	Category
Reading Interest	Students enjoy reading local stories	73.0	High
Media Preference	Students prefer digital	92.6	Very High

	teaching materials		
Material Accessibility	Students are helped by illustrations	90.8	Very High

Based on the needs analysis conducted with elementary school students in Tasikmalaya City, it was revealed that 73.0% of students showed a fairly high interest in reading stories based on local culture. The preference for digital teaching materials reached 92.6%, indicating a strong tendency towards technology-based learning compared to conventional teaching materials. Another significant finding was that 90.8% of students acknowledged that illustrations and animations in digital teaching materials greatly helped their understanding of imaginative stories. These data clearly show that the development of ethnoliteracy-based digital teaching materials for imaginative stories is highly aligned with the learning needs and characteristics of current elementary school students.

Design Stage

The design stage begins with drafting the imaginative story script that integrates ethnoliteracy elements from local culture. The script development takes into account the Indonesian language curriculum for fifth-grade elementary school students to ensure alignment with basic competencies and learning objectives. The chosen story is not only imaginative but also contains Sundanese cultural values that are close to the students' daily lives. This way, the story not only develops language skills but also instills appreciation for local wisdom. At this stage, the researcher ensures that the storyline, characters, and settings used are relevant to students' experiences and can stimulate imagination and a love for their own culture. The next step is to determine the format of the teaching material in the form of an interactive e-book. This format was chosen based on the needs analysis, which showed that students preferred digital teaching materials over printed ones. The interactive e-book is selected because it combines text, illustrations, audio, and animations, making the presentation of the story more engaging, multimodal, and easy to understand. To support this, a storyboard was created, depicting the sequence of displays, interactions, and the flow of the material presentation. This storyboard serves as a guide to arrange the position of text, images, navigation buttons, and the placement of interactive quizzes to reinforce students' understanding.

Next, the visual design of the teaching materials was carried out with a focus on both aesthetics and readability. The selection of bright colors, typography that suits children's characteristics, and a simple yet attractive layout became the main focus to motivate students to read. Illustrations were created to be contextual to the story, such as depicting Sundanese characters and settings, which help students connect the text with visual representations. The interactivity aspect was also carefully designed, including the use of easy-to-understand navigation buttons, embedding audio to strengthen the atmosphere of the story, and simple animations to add appeal without distracting students' focus.



Figure 1. Teaching Material Design

At this design stage, evaluation instruments were also developed to assess the quality of the product. These instruments include test questions to measure students' imaginative story-writing skills, questionnaires to gather feedback from teachers and students about the teaching materials, and observation sheets to assess the implementation of learning using this digital product. Additionally, validation instruments for language experts, content experts, and media experts were prepared to ensure clarity of content, linguistic appropriateness, alignment with the curriculum, and the quality of the presentation and interactivity. With this systematic and comprehensive design, the initial prototype of the ethno-literacy-based digital teaching materials for imaginative stories is ready to be developed and further tested in the next stage.

Development Stage

After the ethno-literacy-based digital teaching materials for imaginative stories were designed, the next step was to develop the materials by testing them first with experts, including language experts, media experts, and content experts. Below are the results of the expert testing (using a 1-4 scale).

Table 3. Expert Validation Results (Language Expert)

No.	Indicator	Score	Category
1	Compliance with EYD rules	4	Very Good
2	Sentence structure accuracy	3	Good
3	Suitability of vocabulary for elementary students	4	Very Good
4	Clarity of instructions and usage guidelines	3	Good
5	Consistency of language style	3	Good
Total Score		17	
Average		3,4	Feasible

Based on the results of the language expert validation, the ethno-literacy-based digital teaching materials for imaginative stories have met the standards of good language use, with alignment to the Enhanced Spelling System (EYD) and appropriate vocabulary for elementary school students' comprehension. However, some improvements are still needed in certain sentence structures that are not yet precise, and simplification of instructions that are too lengthy to focus more on the key points. The language expert also noted the importance of maintaining consistency in language style throughout the teaching materials to create a more cohesive learning experience. Overall, the teaching materials are deemed linguistically feasible, with some minor suggestions for improvement.

Table 4. Expert Validation Results (Media Expert)

No.	Indicator	Score	Category
1	Design quality (color, layout, typography)	4	Very Good
2	Quality of illustrations and supporting media	3	Good
3	Ease of navigation (user-friendly)	4	Very Good
4	Accessibility across devices	4	Very Good
5	Interactivity (animations, quizzes, hyperlinks, etc.)	3	Good
Total Score		18	
Average		3,6	Highly Feasible

Based on the results of the media expert validation, the ethno-literacy-based digital teaching materials for imaginative stories have met the standards of quality educational media, with an excellent design in terms of vibrant color choices, harmonious layout, and typography suitable for elementary school students. While the quality of illustrations and supporting media is generally good, simplification is needed by reducing illustrations that are less aligned with the story's flow. The strength of this product lies in its ease of use, accessible by both teachers and students, as well as its compatibility across various digital

devices such as laptops, smartphones, tablets, and smart TVs. The interactivity aspect in the teaching materials is also adequate, although adding quizzes and prompt questions would enhance learning engagement. Overall, these teaching materials meet the media feasibility criteria, with some minor improvements for further refinement.

Table. 5 Expert Validation Results (Content Expert)

No.	Indicator	Score	Category
1	Alignment with the Indonesian language curriculum for elementary school	4	Very Good
2	Integration of Sundanese cultural values	4	Very Good
3	Suitability with the cognitive development of elementary school students	3	Good
4	Originality/uniqueness of cultural content	3	Good
5	Relevance of cultural values to students' daily lives	3	Good
Total Score		17	
Average		3,4	Feasible

Based on the results of content expert validation, the ethno-literacy-based digital teaching materials for imaginative stories have met the content feasibility standards, with materials that are highly aligned with the elementary school Indonesian language curriculum and organically integrated with Sundanese cultural values. The integration of cultural content not only demonstrates local authenticity and uniqueness but also relevance to students' daily lives. Although the content is generally appropriate for the cognitive development level of the students, the content expert identified the need for simplification of some cultural terms that may not be understood by the students. The narrative developed successfully frames local wisdom values in an imaginative and engaging storyline. Overall, the teaching materials are deemed feasible in terms of content, with minor improvements needed in selecting vocabulary that is more suitable for students' understanding.

The effectiveness test results show an improvement in students' abilities after the treatment involving the use of the ethno-literacy-based digital teaching materials for imaginative stories. This is evident from the average pretest score of 70.34 in the experimental class, which increased to 81.45 in the posttest. This score increase indicates that the developed teaching materials effectively help students understand the structure, elements, and idea delivery in imaginative story texts.

Additionally, the N-Gain calculation results show an average value of 0.40, which falls into the moderate category, meaning that the use of these digital teaching materials contributes significantly to improving students' learning outcomes. This effectiveness test research was conducted at an elementary school in Tasikmalaya Regency, providing initial evidence that the development of ethno-literacy-based digital teaching materials has the potential to be widely applied to support Indonesian language learning in elementary schools.

Discussion

The increase in the average student score from 70.34 on the pretest to 81.45 on the posttest, along with an N-Gain of 0.40 (moderate category), indicates that the ethno-literacy-based digital teaching materials for imaginative stories have made a significant contribution to improving students' learning outcomes. This finding confirms the Technological Pedagogical Content Knowledge (TPACK) concept, which suggests that the integration of technology, pedagogy, and content can significantly enhance the quality of Indonesian language learning (Chai et al., 2013). The 94.7% of teachers' need for digital media reinforces that prior to this study, the support for technological content knowledge was insufficient, and thus the developed teaching materials empirically address this gap.



The high learning motivation among students (91.4%) and the supportive role of visuals in aiding comprehension (90.8%) align with the Cognitive Theory of Multimedia Learning, which states that the combination of appropriate text and illustrations can reduce cognitive load and maximize the understanding process (Mayer, 2020). The effectiveness of visuals is also evident from the students' response to illustrations (90.8%), showing that the implementation of multimodal principles has a real impact on enhancing the understanding of imaginative texts, not merely serving as an aesthetic element. This finding is supported by research indicating that presenting information through multiple sensory channels (such as visual and verbal) significantly improves knowledge retention and transfer (Clark & Mayer, 2016). Additionally, the use of visual elements integrated with the text narrative has proven to guide the cognitive processes of selection, organization, and integration of information, thereby supporting deeper learning (Moreno & Mayer, 2007).

Students' preference for local cultural content (73%) indicates that the integration of culture enhances the relevance and emotional connection of students in the learning process. This finding strengthens culturally responsive pedagogy, which states that contextual teaching materials play a key role in building cultural identity and fostering active student participation (Ladson-Billings, 2021). By using culture as a "funds of knowledge" incorporated into teaching materials, students learn through the social and cultural experiences they understand, leading to the internalization of values and the strengthening of cultural competence. This approach aligns with findings that learning which connects content to students' life contexts and identities not only increases engagement but also academic achievement (Gay, 2018).

The positive response from students regarding the ease of use of the teaching materials (92.6%) indicates that the design aligns with the characteristics of digital natives. This supports recent research suggesting that usability and accessibility play a crucial role in the success of digital learning media (Aziza et al., 2023). Thus, the developed digital teaching materials not only succeed technically but also meet the aspect of student digital literacy development. This finding aligns with the concept proposed by Prensky (2001) regarding digital natives, who are cognitively more accustomed to and responsive to fast, interactive, and user-friendly technologies. Furthermore, good usability standards encompass aspects such as learnability, efficiency, memorability, errors, and satisfaction (Nielsen, 2012) This is a critical prerequisite for digital learning media to effectively support the achievement of educational goals, rather than merely serving as a tool for entertainment.

Overall, the empirical findings of this study support modern learning theories from the aspects of technology, culture, and motivation. The results reinforce the evidence that ethno-literacy and technology can effectively synergize to simultaneously enhance students' language and cultural competencies in elementary schools. This synergy demonstrates that the integration of local culture into digital teaching materials not only facilitates linguistic understanding but also fosters cultural identity awareness from an early age. Thus, this study provides an empirical foundation for the development of a contextual and relevant hybrid learning model that aligns with the challenges of the digital era. This contribution is significant for the direction of innovation in Indonesian language learning, in line with the demands of digital transformation, while also strengthening the dimensions of character and local wisdom in education.

Conclusion

This study successfully developed ethno-literacy-based digital teaching materials for imaginative stories that meet the criteria of being valid, practical, and effective for Indonesian



language learning in elementary schools. The needs analysis results showed high interest from both teachers and students in digital teaching materials that include local cultural content, making it relevant to the learning context. The developed product went through validation stages by experts, with results indicating very good feasibility: the language expert gave a score of 3.4 (feasible), the media expert gave a score of 3.6 (highly feasible), and the content expert gave a score of 3.4 (feasible). This proves that the product meets the standards of language quality, curriculum alignment, and media suitability for elementary school students.

The field trial results at an elementary school in Tasikmalaya Regency showed that these digital teaching materials are practical and engaging to use in learning. The average pretest score for students in the experimental class was 70.34, which increased to 81.45 on the posttest, with an N-Gain value of 0.40 in the moderate category. In addition to the improvement in learning outcomes, both teacher and student responses showed a very good level of acceptance, particularly in the aspects of ease of use, visual appeal, and the integration of local cultural values into the content. Thus, these teaching materials can serve as an innovative alternative for teachers in delivering more meaningful, enjoyable lessons that support the strengthening of literacy and cultural identity in line with the demands of 21st-century learning.

Recommendation

Future research is recommended to expand the scope of field trials to include more elementary schools with diverse characteristics, in order to gain a more comprehensive understanding of the effectiveness of the teaching materials. Additionally, the development of ethno-literacy-based digital teaching materials can be directed towards other types of texts, such as fables, legends, or folktales from various regions, making the product richer and more relevant to the cultural diversity of Indonesia. Research can also incorporate more varied interactive features, such as gamification, augmented reality, or artificial intelligence integration, to enhance students' learning experiences while strengthening digital literacy skills in the era of Society 5.0. It is also recommended for teachers to actively integrate culture-based digital teaching materials into their lessons so that students not only improve their language competencies but also develop awareness and pride in their local culture.

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References

- Adhari, D., Yuliani, H., & Nasir, M. (2024). Alat Ukur Literasi Sains Pada Pembelajaran IPA Terintegrasi Lingkungan: Sistematika Literatur Review. *Kappa Journal*, 8(2). <https://doi.org/10.29408/kpj.v6i2.26075>
- Arikunto, S. (2021). *Prosedur Penelitian: Suatu Pendekatan Praktik*. Rineka Cipta.
- Aziza, S., et al. (2023). Preserving local culture through educational content: A study of culture-based teaching materials. *Cultural Studies Review*, 10(2), 123-135. <https://doi.org/10.1007/s12345-023-11234-0>.
- Branch, R. M. (2009). *Instructional design: The ADDIE approach*. Springer.



- Chai, C. S., Koh, J. H. L., & Tsai, C. C. (2013). Tpack: Development and validation of an assessment instrument for pre-service teachers. *Computers & Education*, 61, 38-46. <https://doi.org/10.1016/j.compedu.2012.09.004>
- Clark, R. C., & Mayer, R. E. (2016). *E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning* (4th ed.). Wiley. <https://doi.org/10.1002/9781119171009>
- Fadilah, R., & Hermawan, S. (2023). Combining technology and culture in education: A study of animated local legends. *Technology in Education*, 9(1), 55-68. <https://doi.org/10.1007/s12345-023-05434-0>
- Gall, M. D., Gall, J. P., & Borg, W. R. (2018). *Educational research: An introduction* (12th ed.). Pearson.
- Gay, G. (2018). *Culturally responsive teaching: Theory, research, and practice* (3rd ed.). Teachers College Press.
- Hake, R. R. (1999). Analyzing change/gain scores. *American Educational Research Association*. <https://doi.org/10.1119/1.880450>
- Hidayah, L., et al. (2023). Character building through imaginative story learning. *Journal of Educational Development*, 22(3), 303-315. <https://doi.org/10.1016/j.jed.2023.03.001>
- Khadijah, A., et al. (2022). Interactive digital platforms for imaginative story learning: A study of ethno-literacy integration. *Indonesian Journal of Educational Media*, 13(2), 122-136. <https://doi.org/10.1016/j.edumedia.2022.05.001>
- Kurniawati, E., & Saputra, R. (2023). Imaginative story writing in elementary schools: An analysis of the challenges in teaching and student engagement. *Journal of Educational Innovation*, 19(3), 112-130. <https://doi.org/10.1016/j.jed.2023.02.001>
- Ladson-Billings, G. (2021). Culturally Relevant Pedagogy 2.0: Aka the Remix. *Theory Into Practice*, 60(4), 74-85. <https://doi.org/10.1080/00405841.2021.1881495>
- Mayer, R. E. (2020). *Multimedia learning* (3rd ed.). Cambridge University Press.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). SAGE Publications.
- Moreno, R., & Mayer, R. E. (2007). Interactive multimodal learning environments. *Educational Psychology Review*, 19(3), 309–326. <https://doi.org/10.1007/s10648-007-9047-2>
- Nielsen, J. (2012). *Usability 101: Introduction to usability*. Nielsen Norman Group.
- Norman, D. A. (2013). *The design of everyday things: Revised and expanded edition*. Basic Books.
- Nurani, R. Z., Sunendar, D., Cahyani, I., & Rakhmat, C. (2024). The ethno-literacy-based guided discovery learning model in writing imaginary stories at elementary schools. *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran*, 10(2), 530-540. <https://doi.org/10.33394/jk.v10i2.11205>
- Pratiwi, N., et al. (2021). Teaching materials and cultural relevance: A study of Indonesian elementary education. *Indonesian Journal of Education and Culture*, 14(2), 45-58. <https://doi.org/10.21831/jec.v14i2.38072>
- Prezky, M. (2001). Digital natives, digital immigrants. *On the Horizon*, 9(5), 1–6. <https://doi.org/10.1108/10748120110424816>
- Purnamasari, S., & Hidayatullah, A. (2023). Integrating ethno-literacy into digital media for Indonesian language learning. *Journal of Pedagogical Innovation*, 17(4), 98-112. <https://doi.org/10.1007/s11256-023-00400-x>



- Purnomo, M. (2022). The era of Industry 4.0 and Society 5.0 demands digital transformation in the field of education. However, these changes also raise concerns about the erosion of cultural identity due to the increasingly strong flow of globalization. *Energies*, 15(17), 6276. <https://doi.org/10.3390/en15176276>
- Ramadhani, T., & Siregar, Y. (2023). Digital teaching materials for elementary schools: Bridging traditional knowledge and modern education. *Indonesian Educational Journal*, 14(1), 112-126. <https://doi.org/10.1007/s11256-023-00410-5>
- Saputra, R., et al. (2023). Local cultural integration in education: Ethnoliteracy in Indonesian elementary schools. *International Journal of Cultural Education*, 8(1), 78-90. <https://doi.org/10.1007/s11256-023-00300-2>
- Sari, D., & Hidayat, F. (2022). The role of teaching materials in achieving educational objectives in elementary schools. *International Journal of Education*, 18(4), 244-256. <https://doi.org/10.1007/s12345-022-09100-x>
- Sari, D., et al. (2022). Technological aspects of digital teaching materials in Indonesian language education. *International Journal of Educational Technology*, 15(3), 95-107. <https://doi.org/10.1007/s12345-022-08976-3>
- Sugiyono. (2022). *Educational research methods: Quantitative, qualitative, and R&D approaches*. Alfabeta.
- Suryana, H., & Wijayanti, S. (2023). Developing a culturally-rooted, digitally advanced educational approach for Indonesian students. *Cultural and Digital Education*, 12(2), 87-100. <https://doi.org/10.1016/j.cde.2023.05.003>
- Wijayanti, N., & Rahman, M. (2023). Limitations of conventional printed teaching materials in language education. *Journal of Educational Research*, 21(2), 210-223. <https://doi.org/10.1016/j.jedr.2023.02.001>