

INTEGRATION OF ACEHNESE FOLK STORIES IN ARTIFICIAL INTELLIGENCE (AI) FOR THE TRANSFORMATION OF 21ST-CENTURY EDUCATIONAL LITERACY

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ABSTRACT

Acehnese folklore holds high moral values and cultural identity, so that the existence of oral literature is now threatened with extinction. This phenomenon is caused by the lack of knowledge of the current generation and traditional oral literature has not been fully integrated adaptively in digital based on Artificial Intelligence (AI). This study aims to explain the integration of Acehese folklore in AI as a transformation of 21st-century educational literacy. This research method uses a qualitative approach, through library research. Data sources come from several relevant literature such as folklore books, hikayat manuscripts, cultural journals, AI-related journals, and educational journals. Data collection

techniques through the identification stage, screening stage, feasibility stage, and inclusion stage. Data analysis techniques include the process of data collection, data presentation, data reduction, data display and drawing conclusions. The results of the study indicate that the integration of AI in Acehese folklore plays a strategic accelerator transforming oral literature into dynamic digital assets that are relevant for future generations. Based on multimodal and interactive learning experiences, AI has proven effective in improving 21st-century literacy and introducing local culture. AI offers the advantage of revitalizing culture and instant character visualization, but its limitations require oversight by cultural experts to maintain the story's philosophical and spiritual tone. Technological sophistication and the preservation of authentic values are key to ensuring Aceh's cultural heritage remains sustainable and holds a place in the hearts of modern society.

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INTRODUCTION

Folklore reflects the values, outlook on life, and social structure of the society from which it originates. Folklore is categorized as belonging to a community or as a social-collective story that is passed down orally from one generation to the next due to the nature of its transmission (Sumitri, 2023). The emergence of these folk tales, as stories that have developed in society over time and from generation to generation (Batubara & Nurrizzati,

2020; Azkia et al., 2024). Thus, the role of folklore as a form of oral literature in forming and maintaining cultural identity and the collective history of a society.

The transformation of folklore today is no longer limited to oral traditions, but has expanded into the realm of Artificial Intelligence (AI). This technological advancement provides easier accessibility and new experiences for readers in enjoying cultural heritage. The role of AI extends beyond optimizing the learning process to creating more dynamic, inclusive, and responsive learning environments tailored to individual needs in the 21st century (Afril et al., 2024). The goal of AI development is to imitate human behavior in technology (Gafarurrozi et al., 2024). AI literacy has become an essential skill that everyone should have in response to this new era of technological advancement (Salhab & Aboushi, 2025). Therefore, AI has an important role in mobilizing the needs of the 21st century, one of which is as a means of conveying oral literature as a cultural heritage that has existed since ancient times.

Current AI developments provide broad benefits to society, both in terms of knowledge and in preserving folklore as a cultural heritage that needs to be reintegrated. This aims to foster a sense of community love for cultural identity, not merely as a mechanical instrument, but as a way of strengthening the nation's noble values. The integration of AI in the preservation of regional arts and languages opens up significant opportunities for the transformation of digital humanities in Indonesia, positioning technology as a catalyst in preserving and developing national cultural riches (Batumalay et al., 2025). Moreover, in the modern era dominated by technological advances, AI has become an extraordinary phenomenon (Suryani et al., 2024). In this case, the development of AI can be used as the main foundation in providing great opportunities in preserving cultural heritage from time to time.

Some research findings conducted by Kikiariski et al. (2025) explains that the transformative potential of AI in folklore education cannot be ignored, as AI-based tools offer the opportunity to revive traditional storytelling methods, making them more engaging and accessible to contemporary learners. Other research findings presented by (Kobis & Tomatala, 2025) that AI contributes to the generation of local stories, new literary works inspired by folklore, and supports the development of local language models aimed at preserving endangered regional dialects. Furthermore, research findings conducted by Eslit (2025) explains that the potential of digital technology and community involvement is a promising path to preserving folklore, provided it is implemented with cultural sensitivity and respect for indigenous ownership.

Based on the findings and explanations above, discussions about AI specifically preserving oral literature have been widely discussed by all groups, but there remains a gap between the idealism of technology and the reality of its implementation. Most focus

on the technical capabilities of AI in documenting folklore, but often neglect the cultural authenticity and emotional nuances of native speakers. This gap is evident in the role of AI in preserving the "spirit" or sacred value of storytelling without reducing it to mere mechanical digital commodities. Furthermore, the gap in technology access in regions with rich folklore but minimal digital infrastructure remains a challenge that has not been fully addressed in the literature. Most studies describe the use of AI in education, but have not explored large language models that can understand local dialects and socio-cultural contexts without losing their metaphorical meaning. Therefore, with these issues in mind, this study aims to explain the integration of Acehese folklore into AI for the transformation of 21st-century educational literacy.

RESEARCH METHODOLOGY

This study uses a qualitative approach with a library research method. The purpose of this literature study is to explore in-depth several relevant literatures regarding the integration of Acehese folklore values into AI technology. The data sources in this study are from several relevant literatures such as folklore books, hikayat manuscripts, cultural journals, AI-related journals, and educational journals. The data collection technique in this study can be seen in Figure 1. The data analysis technique analyzes the literature through the process of data collection, data presentation, data reduction, data display, and drawing conclusions.

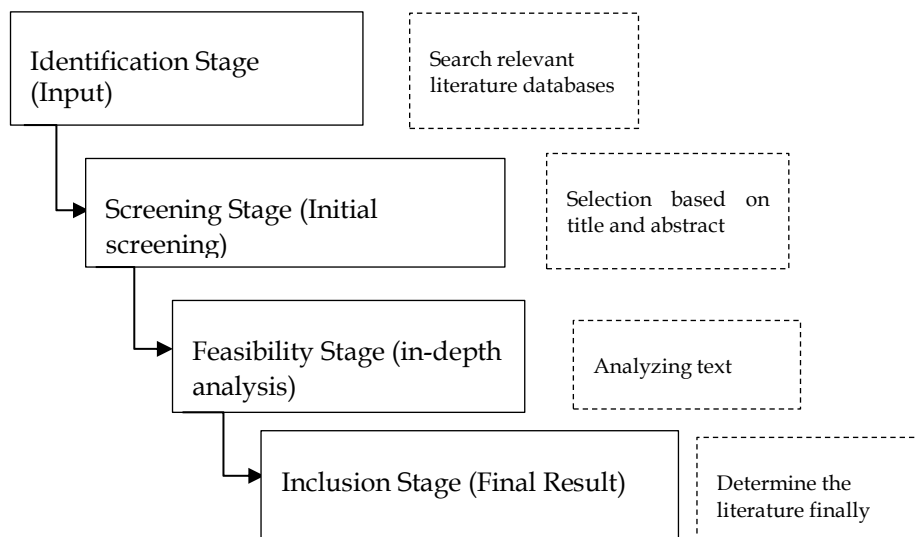


Figure 1. Data Collection Process Diagram

RESULT AND DISCUSSION

This study aims to explain the integration of Acehese folklore in AI for the transformation of 21st-century educational literacy. The following is the substance of the study from various databases such as books and relevant journals in several sub-studies.

Digital Transformation in Acehese Folklore

The digital transformation process is marked by the shift of traditional narratives from oral and printed forms to a dynamic digital ecosystem. The integration of AI enables Acehese folk tales, such as *Hikayat Meurah Silu* or *Putroe Phang*, codified into an algorithmic data format. This transformation is not just about moving text to the screen, but includes language restoration through *Natural Language Processing* (NLP) and automatic character visual generation. This makes Aceh's static cultural heritage more adaptable to the technological devices used by today's younger generation. This aligns with research findings conducted by Gibran Srg & Chairunisa (2024) by utilizing digital technology, stories previously known only locally can be accessed more widely and become more relevant to modern society. The potential of digital technology in preserving culture, increasing cultural literacy, and strengthening local cultural identity.

In addition, the digital transformation in the Acehese folk tale about the Legend of Gajah Puteh in the Gayo land was carried out by Agustina (2024) digital comics allow for a more visual and interactive storytelling, tailored to the preferences of the younger generation. This format also facilitates access through various digital devices, allowing for a wider audience. Furthermore, digitalization can be an effective learning tool, teaching the moral values contained in legends to younger generations in an engaging and accessible way. This is because AI offers significant potential for cultural preservation and the accurate representation of local culture within a modern technological framework (Manik et al., 2024).

Folk tales, known as oral literature, are tales passed down through generations from the past to the present. However, the current generation's knowledge of this oral literature is diminishing. Mardi et al. (2025), given that Generation Z was born and raised in the digital age, digital technology is crucial for the preservation of literary works. This is because this generation often obtains information and entertainment through digital devices such as tablets, computers, and smartphones.

Based on the explanations above, it can be concluded that the integration of digital transformation into Acehese folklore is an important and strategic step in bridging the gap between past oral traditions and the digital lifestyles of the current and future generations. The use of AI and other digital technologies is not merely an attempt to digitize archives, but rather a cultural reactualization. This can revive the moral values of Acehese folklore in a more interactive and relevant way.

This transformation effectively transforms endangered oral literature into a dynamic digital asset, making it easily accessible to all in today's digital age. Thus, AI

technology serves not only as a distribution medium but also as a tool for language conservation and strengthening local identity, ensuring the proper preservation of Aceh's cultural heritage. Furthermore, it is recognized globally and retains a place in the hearts of modern society.

The Effectiveness of AI Use in 21st Century Literacy

The use of AI has been proven to increase the effectiveness of educational literacy by offering a multimodal learning experience. In the 21st-century context, literacy is no longer limited to reading skills but encompasses digital and visual literacy. AI acts as an intelligent tutor capable of personalizing folklore content according to students' level of understanding. The study results show that the use of AI-based media increases student engagement and critical thinking in analyzing moral values and local wisdom in Aceh, making it a much more interactive learning method than conventional methods. This aligns with research findings Kurniawan et al. (2025) the integration of AI into 21st-century educational curriculum development is a strategic step in responding to the challenges of globalization, digitalization, and increasingly complex learning needs. AI has significant potential to transform learning approaches to make them more adaptive, personalized, and data-driven. AI enables the design of curricula that not only emphasize knowledge transfer but also strengthen important competencies such as critical thinking, creativity, technological literacy, and emotional intelligence.

The effective use of AI brings significant innovations in teaching and learning paradigms, including personalized learning, increased efficiency, and greater accessibility (Afril et al., 2024). The research findings were presented by Rinekso et al. (2025) explains that AI is relatively beneficial for improving all language skills, with writing being the skill most frequently explored in many studies. However, the adoption of AI in education requires careful planning to mitigate ethical concerns and ensure equitable access (Raza & Salman, 2022).

Other research findings indicate that AI provides customized learning paths, immediate feedback, and realistic communication settings that support learner independence and motivation. Furthermore, the use of AI in language learning settings offers opportunities to incorporate global competency and cultural awareness into language education, effectively linking language skills to social and cultural development (Aryusmar, 2025). In addition to technology use, pedagogical approaches, the quality of the learning process, and students' past technological experiences all influence how technology integration impacts learning outcomes. Practically, it can be argued that AI-

assisted story writing can increase the motivation of aspiring educators, foster their creativity, and provide new perspectives on the process of creating educational materials. Therefore, it is crucial to provide comprehensive guidance on how these tools can be utilized in a pedagogical context, not just technically, to ensure the efficient use of AI tools (Bircan et al., 2025).

From the explanations above, it can be concluded that the effectiveness of using AI in 21st-century literacy lies in its ability to transform conventional learning into an interactive, data-driven one. In this regard, AI is not merely a technical tool, but rather a key driver for expanding the meaning of literacy through the integration of digital, visual, and cultural learning within a single learning experience. AI's ability to provide instant feedback, personalized content, and realistic communication simulations has proven to increase student engagement and creativity.

The Advantages and Limitations of AI in Integrating Acehese Folktales

The integration of AI as an interactive tool for preserving Acehese folklore offers both advantages and limitations. The advantages of AI integration can be seen in its scalability and language revitalization. With the help of Natural Language Processing (NLP) technology, thousands of lines of difficult-to-understand hikayat text can be translated and adapted into modern Indonesian or international languages without losing their essential meaning. The use of AI not only produces visualizations of characters in Acehese folklore, such as hikayat, oral literature (fairy tales), and so on, but also automatically adds novelty to abstract oral literature. Thus, these folktales and hikayat will be more easily accepted by readers in today's digital age. Consequently, it can create a profound learning experience for individuals and facilitate the instant introduction of local culture with ever-expanding digital availability.

In addition to the advantages of using AI, there are several limitations that need to be understood, including: (a) the risk of reducing philosophical value, where AI algorithms still experience shortcomings in analyzing cultural nuances, the typical rhymes of fables or folktales, as well as the in-depth spiritual context that should be spoken by humans (original oral literature) and, (b) data limitations, where the regional languages used such as Acehese can cause bias or inaccuracies in cultural representation. Therefore, without the supervision of cultural experts and historians, there is a risk of producing content that loses its "soul" or nuance of authenticity.

CONCLUSIONS AND SUGGESTIONS

Based on several existing literature reviews, it can be concluded that the integration of AI into Acehese folklore is a key accelerator strategically transforming traditional oral literature into dynamic digital assets that are adaptive to the lifestyles of current and future generations. The use of AI technology is effective in increasing literacy in the 21st century through multimodal, personalized, and interactive learning experiences, thereby expanding the reach of local culture to the global level. While AI offers advantages in cultural revitalization and instant character visualization, its use also requires supervision by cultural experts. This aims to minimize the risk of reducing the philosophical and spiritual values in these folklore. Therefore, collaboration between technological sophistication and the preservation of authentic values is the main key to ensuring that Acehese cultural heritage remains relevant, sustainable, and has a place in the hearts of modern society. As for future recommendations, it is hoped that there will be ongoing synergy between technology developers, academics, and cultural practitioners to design appropriate pedagogical guidelines so that the use of AI is aligned with the values of authentic local wisdom.

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