ISSN: 2665-1780

ARTIFICIAL INTELLIGENCE IN ENHANCING INTERACTIVE LEARNING OF ORAL LITERATURE IN MODERN EDUCATION SYSTEMS

Suhendra
National Chung Hsing University, Taichung, Taiwan
Email for correspondence: suhendra18@mail.ugm.ac.id

ABSTRACT

Artificial Intelligence (AI) is revolutionizing interactive learning in modern education systems, particularly in the teaching of oral literature. AI technologies create personalized and engaging learning experiences, making traditional oral literature more accessible to contemporary learners. This systematic literature review (SLR), conducted using the PRISMA methodology, explores how AI enhances the learning of oral literature, focusing on personalized learning paths, real-time feedback, and immersive environments through tools like virtual simulations. These AI-driven innovations significantly increase student engagement and improve understanding. In addition to personalizing learning, AI supports collaborative and communal learning experiences, which are crucial for teaching oral traditions that rely on interaction, such as pantun and wayang. However, challenges remain in ensuring ethical use, data privacy, and addressing the digital divide, especially in regions with limited access to technology. Equitable access to AI tools is necessary to ensure the broad adoption of AI-enhanced learning in diverse educational settings. Future prospects include developing AI-powered virtual storytellers to enable real-time interaction with oral narratives, deepening students' understanding of cultural context. AI can also aid in the preservation of endangered oral traditions through digital archiving, ensuring their accessibility for future generations. Overall, AI offers significant potential to modernize the teaching of oral literature, making it more interactive, engaging, and inclusive.

Keywords: Artificial Intelligence, Oral Literature, Interactive Learning, Educational Technology

INTRODUCTION

Artificial Intelligence (AI) is increasingly playing a transformative role in modern education systems, particularly by enhancing interactive learning experiences (Li et al., 2024). In the context of oral literature, which traditionally relies on verbal transmission and interactive engagement, AI offers promising tools to overcome unique challenges and reshape teaching methods. By integrating AI into educational frameworks, educators can make learning more student-centered and adaptable, which is especially valuable for oral literature where accessibility, engagement, and cultural preservation are crucial.

Current advancements in AI have shown potential to revolutionize the teaching and learning of oral literature through various approaches, including real-time feedback and personalized learning paths. Studies indicate that AI can improve classroom dialogue quality, allowing educators to refine their strategies based on immediate analysis, thus fostering an interactive learning environment essential for subjects relying on dialogue (Li et al., 2024; Yeh, 2024). Additionally, AI-driven tools, such as ChatGPT and other generative technologies, support the creation of dynamic and adaptive learning materials that aid in language acquisition and appreciation of oral narratives (Yeh, 2024; Namaziandost & Rezai, 2024). This personalization not only enhances student engagement but also helps accommodate individual learning preferences, making oral literature more accessible and motivating for a diverse range of learners (Namaziandost & Rezai, 2024).

Despite these benefits, AI integration in oral literature education brings challenges, including ethical considerations, data privacy, and issues related to equitable access (Namaziandost & Rezai, 2024). As AI technologies continue to evolve, they offer promising solutions for the preservation of cultural heritage through digital transcription and translation tools that capture and disseminate oral traditions for future generations (Al-Shaikh et al., 2024). This systematic literature review seeks to examine how AI enhances interactive learning of oral literature, considering both its transformative potential and the challenges that need to be addressed for its responsible and equitable application in diverse educational settings.

RESEARCH METHODS

This study employs a Systematic Literature Review (SLR) approach, utilizing the PRISMA methodology to systematically identify and analyze relevant literature on the application of AI in interactive learning for oral literature. The inclusion criteria focus on studies that examine AI tools designed to enhance interactivity, personalization, and engagement in the learning of oral traditions, while exclusion criteria omit studies unrelated to AI applications in educational settings. Databases such as Scopus, IEEE Xplore, and Google Scholar were selected for comprehensive literature searches, with keyword strategies targeting AI, interactive learning, and oral literature. Data synthesis involved thematic analysis, allowing for an organized interpretation of the findings based on recurring themes and advancements highlighted across selected studies.

RESULT AND DISCUSSION

AI in Personalized Learning for Oral Literature

AI-Driven Customization in Learning Paths

The integration of AI into personalized learning for oral literature provides significant advancements by customizing learning experiences to suit diverse student needs. This AI-driven customization involves adaptive learning paths, allowing educational content to be dynamically tailored to individual preferences and cognitive levels. Machine learning (ML) technologies, including artificial neural networks, identify and respond to each student's unique learning style by analyzing behavioral attributes, thus optimizing the learning process (Essa et al., 2023). Advanced platforms that utilize Deep Q-Network Reinforcement Learning (DQN-RL) present adaptive content and exercises tailored specifically to learners' abilities. This level of personalization not only enhances student engagement but also improves satisfaction, especially among learners with initially lower performance levels (Sayed et al., 2023).

Real-Time Feedback and Assessment

Real-time feedback is a cornerstone of AI-enhanced education, particularly valuable for subjects like oral literature that require active engagement and continuous assessment. AI systems provide immediate feedback by analyzing educational big data and tracking student learning behavior, which supports the continual refinement of personalized learning programs. This real-time adaptation promotes ongoing improvements in learning outcomes by recommending high-quality resources that align with students' progress (Xia, 2020). Furthermore, in language education, AI methods that incorporate IoT and Generative AI offer dynamic, adaptive assessments, enabling students to receive immediate oral feedback tailored to their progress and challenges. Such real-time feedback addresses traditional educational limitations and significantly enhances the learning experience (Dong et al., 2024).

Immersive Learning Environments

AI's capacity to create immersive learning environments brings a new dimension to oral literature education, making the subject more accessible and engaging for contemporary learners. AI tools, such as virtual simulations, provide interactive environments that simulate traditional oral traditions, facilitating deeper student interaction with the material. By using gamification and kinesthetic activities, these simulations help students explore oral literature in an engaging and interactive manner, which improves understanding and retention (Sayed et al., 2023). Moreover, the integration of AI with IoT and cloud computing technologies allows for the development of smart education systems that offer personalized, anthropomorphic learning assistance. This promotes sustainable and adaptive learning, providing students with innovative support systems that cater to their

individual educational journeys (Xia, 2020).

AI in Collaborative and Communal Learning of Oral Literature

AI's Role in Collaborative Learning of Oral Literature

AI significantly enhances collaborative learning in oral literature by facilitating group interactions and supporting communal participation, crucial aspects of learning traditional oral narratives. AI techniques like clustering, deep learning, and natural language processing (NLP) contribute to improved social dynamics and learning outcomes by understanding discourse patterns and learner behaviors within groups (Tan et al., 2022). Furthermore, hybrid human-AI orchestration tools allow seamless transitions between individual and group learning modes, providing adaptability essential for studying oral traditions with varying cultural contexts (Echeverria et al., 2023). In particular, collective intelligence (CI) platforms in online education promote collaborative engagement, enabling students to co-create content and problem-solve within culturally relevant frameworks (Tenório et al., 2021).

Cultural Engagement and Preservation through AI

AI also plays a pivotal role in maintaining cultural authenticity in oral literature education, making it accessible to diverse audiences while preserving the essence of cultural traditions. By analyzing extensive datasets, AI helps educators retain cultural authenticity in practices such as pantun and wayang, ensuring that core narratives remain true to their roots (Ifenthaler & Schumacher, 2023). AI-supported co-creative dialogue further enriches cultural engagement by promoting human-AI interaction that mirrors traditional storytelling methods, encouraging students to actively participate in preserving cultural heritage (Griffith et al., 2021). Through these technologies, AI enables the transmission of nuanced cultural narratives that uphold the authenticity of oral literature.

Challenges and Future Directions in AI-Enhanced Collaborative Learning

While AI brings advancements to collaborative and communal learning, it also presents challenges related to cultural sensitivity and authentic representation. Implementing AI-driven tools in educational contexts requires careful consideration of cultural nuances to prevent misinterpretations or oversimplifications of traditional narratives. Further research is needed to develop AI systems that respect these complexities, ensuring that AI remains a supportive, rather than dominant, element in educational settings for oral literature. By addressing these challenges, AI can fulfill its potential to foster immersive, collaborative learning experiences that honor and sustain diverse cultural traditions (Ifenthaler & Schumacher, 2023; Griffith et al., 2021).

Challenges and Ethical Considerations

Ethical Use and Data Privacy

The integration of AI in enhancing interactive learning of oral literature brings substantial ethical considerations, particularly around student privacy and content ownership. AI-driven personalized learning systems often require large datasets, collecting extensive student data on learning behavior and performance, which raises concerns about privacy and surveillance (Regan & Jesse, 2019). Privacy-enhancing technologies like differential privacy offer solutions; however, these advanced tools remain largely accessible to well-funded institutions, highlighting inequalities in privacy protection (Marshall et al., 2022). Ensuring ethical AI use also entails maintaining academic integrity, as AI tools, like ChatGPT, though beneficial, can inadvertently encourage plagiarism, necessitating institutions to implement strict policies and guidelines (Cotton et al., 2023).

Digital Divide and Equity in Access

The digital divide presents a significant barrier to equitable AI-enhanced learning experiences, particularly in regions with limited access to technology. Students in under-resourced areas face challenges in obtaining the hardware, connectivity, and digital skills needed to fully participate in AI-powered learning, exacerbating existing educational inequalities (Tiene, 2002; Resta & Laferrière, 2015). Moreover, AI algorithms often reflect biases present in training datasets, which can reinforce inequalities, disadvantaging historically marginalized groups (Viberg et al., 2024; Jiang & Pardos, 2021). Addressing these challenges requires not only investing in digital infrastructure but also fostering inclusive policies to ensure AI applications support diverse learning needs and promote educational equity.

Bias in AI Algorithms and Cultural Representation

Bias in AI algorithms poses another ethical challenge, particularly in applications related to cultural narratives within oral literature. AI models trained on biased datasets risk perpetuating skewed interpretations, potentially misrepresenting or oversimplifying cultural content. Algorithmic bias, often reflective of historical inequalities in data, can lead to unfair outcomes in AI applications, as seen in instances where algorithms have displayed discriminatory behavior based on gender or ethnicity (Hajian et al., 2016). Ensuring fair AI requires diverse perspectives in development teams and fairness-aware mining systems to detect and counteract biases, fostering culturally sensitive and accurate representations of oral traditions (Raza et al., 2024; Kuhlman et al., 2020).

Future Directions in AI-Enhanced Oral Literature Learning

AI-Powered Virtual Storytellers and Real-Time Interaction

One of the promising developments in AI-enhanced oral literature learning is the potential for AI-powered virtual storytellers to provide immersive and interactive storytelling experiences. These AI narrators can dynamically adapt narratives, creating personalized and engaging storytelling environments for students. By simulating human-like interaction, virtual storytellers allow students to participate actively, enhancing their understanding and emotional engagement with the material (de Lima et al., 2024). AI-driven systems such as ChatGPT facilitate interactive story creation by generating contextually relevant content, which encourages learners to explore narratives creatively, offering new ways to engage with oral literature in real-time (Nikolic & Bertin, 2023).

Preservation of Oral Traditions through AI-Driven Digital Archiving

AI technologies play a crucial role in the digital preservation of endangered oral traditions, ensuring they remain accessible to future generations. Through advanced algorithms, AI can capture, digitize, and store intangible cultural assets, preserving oral literature in formats that are more durable and accessible than traditional methods. Projects like the PAMIN initiative demonstrate how digital features can map intangible cultural heritage (ICH), ensuring these traditions are safeguarded and can be revisited in diverse educational contexts (de Silva et al., 2013). Additionally, AI enables interactive access to digital archives, allowing students worldwide to experience and appreciate diverse cultural narratives, overcoming geographical and accessibility barriers (Bellon et al., 2010).

AI-Driven Cultural Contextualization for Deeper Engagement

AI offers significant potential to contextualize oral literature in ways that reflect learners' cultural backgrounds, enriching their educational experience and fostering intercultural understanding. Generative AI models are capable of reconstructing and adapting narratives to resonate with specific cultural contexts, thereby enhancing students' engagement with oral traditions (Spennemann, 2024). Intelligent learning environments (ILEs) like ICON utilize culturally relevant data to tailor educational content, enabling students to engage with material that aligns with their own cultural experiences (Mohammed & Mohan, 2015). Furthermore, conversational AI systems designed for intercultural communication can facilitate adaptive dialogue strategies, providing learners with culturally situated interpretations that deepen their understanding of oral traditions (Brandt & Hazel, 2024). While these advancements hold great promise, ethical considerations, such as the authenticity of AI-generated cultural content, are vital to ensuring AI accurately represents and respects cultural heritage (Spennemann, 2024).

CONCLUSION

Artificial Intelligence (AI) holds transformative potential in enhancing the interactive learning of oral literature within modern education systems by personalizing and enriching the educational experience. This systematic review highlights AI's ability to create customized learning paths, provide real-time feedback, and offer immersive learning environments, making oral literature more accessible and engaging for contemporary learners. Additionally, AI supports collaborative and communal learning, essential for teaching culturally rich oral traditions such as pantun and wayang, while also enabling digital preservation to safeguard these traditions for future generations. However, as AI's role in education expands, it is critical to address ethical concerns related to data privacy, equitable access, and algorithmic bias to ensure responsible and inclusive use of AI in diverse educational contexts. Future directions, including the development of AI-powered virtual storytellers and culturally adaptive content, underscore AI's potential to deepen engagement, foster cultural appreciation, and sustain the legacy of oral literature in an increasingly digital world.

REFERENCES

Abou-Khalil, V., Ishida, T., Otani, M., Flanagan, B., Ogata, H., & Lin, D. (2018). Learning culturally situated dialogue strategies to support language learners. *Research and Practice in Technology Enhanced Learning*, *13*, 1-20.

Al-Shaikh, R., Al-Malki, N., & Almasre, M. (2024). The implementation of the cognitive theory of multimedia learning in the design and evaluation of an AI educational video assistant utilizing large language models. *Heliyon*, *10*(3).

Ashley, M. (2010). Digital Conservation and Access: Saving Humanity's History in the Petabyte Age. *Virtual Archaeology Review*, *1*(1), 9-12.

Bellon, O. P., Shimshoni, I., & Dellepiane, M. (2010, October). eHeritage 2010: 2nd ACM workshop on eHeritage and digital art preservation. In *Proceedings of the 18th ACM international conference on Multimedia* (pp. 1729-1730).

Branch, B., Mirowski, P., & Mathewson, K. W. (2021). Collaborative storytelling with human actors and ai narrators. *arXiv preprint arXiv:2109.14728*.

Brandt, A., & Hazel, S. (2024). Towards interculturally adaptive conversational AI. *Applied Linguistics Review*, (0).

Cong, L. (2024). A framework study on the application of AIGC technology in the digital reconstruction of cultural heritage. *Applied Mathematics and Nonlinear Sciences*, *9*(1).

Cotton, D. R., Cotton, P. A., & Shipway, J. R. (2024). Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. *Innovations in education and teaching international*, *61*(2), 228-239.

da Silva, A. C. C., Tavares, T. A., & Soares, V. G. (2013, July). Management of intagible cultural heritage in digital media using pamin. In *2013 IEEE International Conference on Multimedia and Expo Workshops (ICMEW)* (pp. 1-6). IEEE.

Dai, D. W., Suzuki, S., & Chen, G. (2024). Generative AI for professional communication training in intercultural contexts: where are we now and where are we heading?. *Applied Linguistics Review*, (0).

de Lima, E. S., Neggers, M. M., Feijó, B., Casanova, M. A., & Furtado, A. L. (2025). An AI-powered approach to the semiotic reconstruction of narratives. *Entertainment Computing*, *52*, 100810.

Dong, W., Pan, D., & Kim, S. (2024). Exploring the integration of IoT and Generative AI in English language education: Smart tools for personalized learning experiences. *Journal of Computational Science*, *82*, 102397.

Echeverria, V., Yang, K., Lawrence, L., Rummel, N., & Aleven, V. (2023). Designing hybrid human–AI orchestration tools for individual and collaborative activities: A technology probe study. *IEEE Transactions on Learning Technologies*, *16*(2), 191-205.

Essa, S. G., Celik, T., & Human-Hendricks, N. E. (2023). Personalized adaptive learning technologies based on machine learning techniques to identify learning styles: A systematic literature review. *IEEE Access*, *11*, 48392-48409.

Ferguson, R., Hoel, T., Scheffel, M., & Drachsler, H. (2016). Guest editorial: Ethics and privacy in learning analytics. *Journal of learning analytics*, *3*(1), 5-15.

Griffith, A. E., Katuka, G. A., Wiggins, J. B., Boyer, K. E., Freeman, J., Magerko, B., & McKlin, T. (2021, June). Discovering co-creative dialogue states during collaborative learning. In *International Conference on Artificial Intelligence in Education* (pp. 165-177). Cham: Springer International Publishing.

Gudis, D. A., McCoul, E. D., Marino, M. J., & Patel, Z. M. (2023, March). Avoiding bias in artificial intelligence. In *International Forum of Allergy & Rhinology* (Vol. 13, No. 3, pp. 193-195).

Hajian, S., Bonchi, F., & Castillo, C. (2016, August). Algorithmic bias: From discrimination discovery to fairness-aware data mining. In *Proceedings of the 22nd ACM SIGKDD international conference on knowledge discovery and data mining* (pp. 2125-2126).

Hardman, L., Aroyo, L., van Ossenbruggen, J., & Hyvönen, E. (2009). Using AI to access and experience cultural heritage. *IEEE Intelligent Systems*, *24*(2), 23-25.

Ifenthaler, D., & Schumacher, C. (2023). Reciprocal issues of artificial and human intelligence in education. *Journal of Research on Technology in Education*, *55*(1), 1-6.

Jiang, W., & Pardos, Z. A. (2021, July). Towards equity and algorithmic fairness in student grade prediction. In *Proceedings of the 2021 AAAI/ACM Conference on AI, Ethics, and Society* (pp. 608-617).

Kuhlman, C., Jackson, L., & Chunara, R. (2020). No computation without representation: Avoiding data and algorithm biases through diversity. *arXiv preprint arXiv:2002.11836*.

Li, X., Han, G., Fang, B., & He, J. (2024). Advancing the In-Class Dialogic Quality: Developing an Artificial Intelligence-Supported Framework for Classroom Dialogue Analysis. *The Asia-Pacific Education Researcher*, 1-15.

Marshall, R., Pardo, A., Smith, D., & Watson, T. (2022). Implementing next generation privacy and ethics research in education technology. *British Journal of Educational Technology*, *53*(4), 737-755.

Mohammed, P., & Mohan, P. (2015). Dynamic cultural contextualisation of educational content in intelligent learning environments using ICON. *International Journal of Artificial Intelligence in Education*, *25*, 249-270.

Namaziandost, E., & Rezai, A. (2024). Artificial Intelligence in Open and Distributed Learning: Does It Facilitate or Hinder Teaching and Learning?. *The International Review of Research in Open and Distributed Learning*, *25*(3), i-vii.

Nikolić, P. K., & Bertin, G. (2023). AI. R Taletorium: Artificial Intelligence 1001 Cyber Nights. *Artnodes*, (31), 1-10.

Raza, S., Garg, M., Reji, D. J., Bashir, S. R., & Ding, C. (2024). Nbias: A natural language processing framework for BIAS identification in text. *Expert Systems with Applications*, *237*, 121542.

Regan, P. M., & Jesse, J. (2019). Ethical challenges of edtech, big data and personalized learning: Twenty-first century student sorting and tracking. *Ethics and Information Technology*, *21*, 167-179.

Resta, P., & Laferrière, T. (2015). Digital equity and intercultural education. *Education and Information Technologies*, *20*, 743-756.

Saddhono, K., Saputra, N., Saragih, B., Sumbayak, D. M., & Sipayung, R. W. (2024, May). A New way to Create Virtual Authors/Writers using AI Based Technology with Optimized Voice and Style. In *2024 4th International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE)* (pp. 1509-1514). IEEE.

Sayed, W. S., Noeman, A. M., Abdellatif, A., Abdelrazek, M., Badawy, M. G., Hamed, A., & El-Tantawy, S. (2023). AI-based adaptive personalized content presentation and exercises navigation for an effective and engaging E-learning platform. *Multimedia Tools and Applications*, *82*(3), 3303-3333.

Spennemann, D. H. (2024). Generative Artificial Intelligence, Human Agency and the Future of Cultural Heritage. *Heritage*, *7*(7), 3597.

Tan, S. C., Lee, A. V. Y., & Lee, M. (2022). A systematic review of artificial intelligence techniques for collaborative learning over the past two decades. *Computers and Education: Artificial Intelligence*, *3*, 100097.

Tavani, H. T. (2003). Ethical reflections on the digital divide. *Journal of Information, Communication and Ethics in Society*, *1*(2), 99-108.

Tenório, T., Isotani, S., Bittencourt, I. I., & Lu, Y. (2021). The state-of-the-art on collective intelligence in online educational technologies. *IEEE Transactions on Learning Technologies*, *14*(2), 257-271.

Tiene, D. (2002). Addressing the global digital divide and its impact on educational opportunity. *Educational Media International*, *39*(3-4), 212-222.

Vaccino-Salvadore, S. (2023). Exploring the ethical dimensions of using ChatGPT in language learning and beyond. *Languages*, *8*(3), 191.

Viberg, O., Kizilcec, R. F., Wise, A. F., Jivet, I., & Nixon, N. (2024). Advancing equity and inclusion in educational practices with AI-powered educational decision support systems (AI-EDSS). *British Journal of Educational Technology*, *55*(5), 1974-1981.

Williyan, A., Fitriati, S. W., Pratama, H., & Sakhiyya, Z. (2024). AI as Co-Creator: Exploring Indonesian EFL Teachers' Collaboration with AI in Content Development. *Teaching English with Technology*, *24*(2), 5-21.

Wong, P. H. (2020). Cultural differences as excuses? Human rights and cultural values in global ethics and governance of AI. *Philosophy & Technology*, *33*(4), 705-715.

Xia, P. (2021). Design of personalized intelligent learning assistant system under artificial intelligence background. In *The 2020 International Conference on Machine Learning and Big Data Analytics for IoT Security and Privacy: SPIoT-2020, Volume 1* (pp. 194-200). Springer International Publishing.

Yeh, H. C. (2024). The synergy of generative AI and inquiry-based learning: transforming the landscape of English teaching and learning. *Interactive Learning Environments*, 1-15.