

Digital History Learning as a Strategy to Strengthen 21st-Century Historical Literacy

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Abstrak

Perkembangan teknologi digital telah membawa perubahan yang signifikan terhadap paradigma pembelajaran sejarah pada abad ke-21. Pembelajaran sejarah tidak lagi berorientasi pada penyampaian fakta-fakta historis semata, tetapi diarahkan pada pengembangan kemampuan berpikir historis, literasi sejarah, literasi digital, serta keterampilan berpikir kritis peserta didik. Penelitian ini bertujuan untuk mengkaji peran pembelajaran sejarah digital sebagai strategi dalam memperkuat literasi sejarah abad ke-21. Penelitian menggunakan metode studi kepustakaan (*library research*) dengan menganalisis berbagai artikel ilmiah, buku, prosiding, dan dokumen akademik yang relevan mengenai pembelajaran sejarah digital dan literasi sejarah. Data dianalisis menggunakan teknik analisis isi (*content analysis*) melalui proses reduksi data, penyajian data, dan penarikan kesimpulan secara sistematis. Hasil kajian menunjukkan bahwa pemanfaatan teknologi digital seperti *Learning Management System* (LMS), museum virtual, arsip digital, multimedia interaktif, *artificial intelligence* (AI), dan berbagai platform pembelajaran berbasis web mampu meningkatkan kemampuan peserta didik dalam mengakses, mengevaluasi, menginterpretasikan, serta merekonstruksi sumber-sumber sejarah secara kritis. Selain itu, pembelajaran sejarah digital juga berkontribusi dalam meningkatkan keterampilan berpikir historis, literasi informasi, kolaborasi, kreativitas, dan kemampuan pemecahan masalah yang menjadi kompetensi utama abad ke-21. Dengan demikian, pembelajaran sejarah digital menjadi salah satu strategi yang relevan dalam membangun generasi yang memiliki literasi sejarah yang kuat, berpikir kritis, serta mampu menghadapi tantangan masyarakat digital.

Kata kunci: pembelajaran sejarah digital, literasi sejarah, abad ke-21.

Abstract

The rapid advancement of digital technology has significantly transformed the paradigm of history education in the twenty-first century. History learning is no longer limited to the transmission of historical facts but is directed toward developing historical thinking, historical literacy, digital literacy, and students' critical thinking skills. This study aims to examine digital history learning as a strategy for strengthening historical literacy in the twenty-first century. The study employed a library research approach by analyzing relevant scientific articles, books, conference proceedings, and academic documents related to digital history education and historical literacy. Data were analyzed using content analysis through data reduction, data presentation, and systematic conclusion drawing. The findings indicate that the integration of digital technologies, including Learning Management Systems (LMS), virtual museums, digital archives, interactive multimedia, artificial intelligence (AI), and web-based learning platforms, enhances students' ability to access, evaluate, interpret, and reconstruct historical sources critically. Furthermore, digital history learning contributes to improving historical thinking skills, information literacy, collaboration, creativity, and problem-solving abilities, which are essential competencies in the twenty-first century. Therefore, digital history learning represents an effective strategy for strengthening historical literacy while preparing learners to become critical, reflective, and digitally competent citizens in the contemporary information society.

Keywords: digital history learning, historical literacy, twenty-first century.

INTRODUCTION

Advancements in information and communication technology have driven transformations across various aspects of life, including the field of education. The transition from the Industrial Revolution 4.0 era toward Society 5.0 requires the education sector to integrate digital technology into the learning process, ensuring that learners acquire competencies relevant to 21st-century needs. These competencies encompass not only the mastery of knowledge but also critical thinking, creativity, collaboration, communication, information literacy, and digital literacy essential skills for navigating a knowledge-based society (Partnership for 21st Century Learning, 2019; UNESCO, 2021).

In the context of history education, digital transformation presents an opportunity to develop learning that is more contextual, interactive, and oriented towards strengthening historical thinking skills rather than merely memorizing past facts (Seixas & Morton, 2013).

Fundamentally, history education aims to foster historical consciousness and national identity, as well as the ability to comprehend the connections between the past, present, and future. However, the practice of teaching history across various educational levels continues to face numerous challenges. Instruction is often teacher-centered, emphasizing the rote

memorization of event chronologies while failing to utilize a diverse range of historical sources. Consequently, students tend to exhibit low learning motivation, struggle to interpret historical sources, and fail to fully develop their historical thinking skills (Wineburg, 2001; Barton & Levstik, 2004).

The changing characteristics of learners now dominated by the digital generation necessitate innovation in history education. Today's generation has grown up alongside the internet, social media, mobile devices, artificial intelligence, and various digital platforms that enable rapid access to information, unconstrained by space or time. Consequently, learners are accustomed to acquiring historical information through digital media rather than conventional textbooks. Therefore, history teachers are required not only to master the subject matter but also to possess the competence to manage diverse digital learning resources, thereby making the learning process more engaging, authentic, and meaningful (Koehler & Mishra, 2009; Redecker, 2017).

The use of digital technology in history education offers a wide range of alternative media and learning resources—such as digital archives, virtual museums, digital maps, interactive documentary videos, Learning Management Systems (LMS), history podcasts, virtual reality (VR), augmented reality (AR), and even

Artificial Intelligence (AI)-based applications. These technologies enable learners to access primary and secondary historical sources more extensively, analyze diverse historical perspectives, and develop critical thinking skills when interpreting past events. Consequently, digital technology serves not merely as a medium for information delivery but also as a means to foster more comprehensive historical literacy (Lee, 2005; UNESCO, 2021).

Historical literacy is an individual's ability to critically understand, analyze, evaluate, and interpret various historical sources, thereby enabling them to construct an understanding of an event based on credible historical evidence (Maposa & Wassermann, 2009).

Historical literacy goes beyond merely recalling facts or significant dates; it encompasses the ability to evaluate the validity of sources, understand historical contexts, recognize diverse perspectives, and construct arguments based on available evidence. In this regard, the concept of historical thinking developed by Seixas and Morton (2013) identifies the ability to determine historical significance, utilize historical evidence, recognize continuity and change, analyze cause and effect, adopt historical perspectives, and understand ethical dimensions as key indicators of historical literacy in the 21st century.

In the context of higher education specifically within History Education study programs strengthening historical literacy is a crucial necessity for students preparing to become history teachers. Prospective history teachers are required not only to grasp the substance of historical content but also to possess the ability to manage digital technology-based instruction that fosters students' historical thinking skills. This competence is increasingly vital, given that 21st-century history teachers act as facilitators, instructional designers, and guides who help students navigate the vast amount of historical information available in the digital realm (Koehler & Mishra, 2009; Redecker, 2017).

Various prior studies indicate that the use of digital media can enhance learning motivation, student engagement, and history learning outcomes. Research on interactive multimedia, virtual museums, digital storytelling, and Learning Management System-based instruction demonstrates improvements in students' learning activities and critical thinking skills. However, most of these studies focus primarily on the effectiveness of specific media or the impact of technology on learning outcomes. Comprehensive studies addressing digital history learning as a strategy to strengthen historical literacy—particularly in preparing prospective history teachers to face 21st-century

challenges remain relatively limited. Consequently, there is a research gap that needs to be addressed through studies integrating the concepts of digital history learning, historical literacy, and 21st-century competencies within a single analytical framework.

Furthermore, the development of artificial intelligence (AI) technology in recent years has presented both opportunities and challenges for history education. AI can be utilized to assist in locating historical sources, developing learning materials, visualizing historical events, and personalizing instruction to meet students' needs. However, the use of AI also carries the risk of spreading inaccurate historical information if not balanced with adequate historical and digital literacy skills. Therefore, history education in the digital era must focus on fostering critical thinking regarding the historical information circulating online, enabling students to distinguish between historical facts, scholarly interpretations, opinions, and disinformation.

Based on the foregoing, it is evident that digital history education holds a strategic position in strengthening historical literacy in the 21st century. The integration of digital technology not only enhances the quality of the learning process but also encourages students including prospective history teachers to develop historical thinking skills, information literacy, digital literacy, and

the ability to critically analyze diverse historical sources. Therefore, this study aims to comprehensively examine how digital history education can serve as a strategy to strengthen 21st-century historical literacy through a literature review of relevant research findings and scholarly works.

METHODS

This study employs a library research method with a qualitative approach. Library research is a method that utilizes various literature sources as the primary objects of study to gain a comprehensive understanding of a phenomenon through the analysis of research findings, scholarly books, academic documents, and other scientific publications (Zed, 2018). This approach was selected because it aligns with the research objective: to conduct an in-depth examination of the concept of digital history learning as a strategy for strengthening 21st-century historical literacy, based on various published research findings.

The data sources for this study consist of secondary data obtained from reputable national and international journal articles, scholarly books, seminar proceedings, reports from international organizations, and education policy documents related to digital history learning, historical literacy, historical thinking, digital literacy, 21st-century competencies, and the use of digital

technology in history education. Priority was given to literature published between 2020 and 2026 to capture the latest research developments; however, seminal works serving as conceptual foundations such as those by Wineburg (2001), Barton and Levstik (2004), Seixas and Morton (2013), Koehler and Mishra (2009), and Zed (2018) were also utilized to underpin the development of the theoretical framework. Data collection was conducted through a systematic literature search utilizing various scholarly databases, such as Google Scholar, Scopus, ERIC, Crossref, Dimensions, DOAJ, and Garuda. The search process employed a combination of keywords, including digital history learning, history education, historical literacy, historical thinking, digital literacy, history teacher education, artificial intelligence in education, virtual museums, and digital archives. The retrieved literature was then selected based on relevance to the research focus, publication quality, currency of references, and alignment with research objectives (Snyder, 2019).

The literature selection process involved several stages: identification, screening, eligibility assessment, and inclusion of relevant sources. During the identification stage, all publications related to the research theme were gathered. Subsequently, screening was conducted based on titles, abstracts, keywords, and article content to ensure

alignment with the study's focus. Literature meeting the criteria underwent in-depth analysis, whereas publications that were irrelevant, contained limited information, or failed to meet academic standards were excluded from the analysis process (Snyder, 2019).

Data analysis employed content analysis, aiming to identify patterns, themes, concepts, and inter-conceptual relationships emerging from various literature sources (Krippendorff, 2018). The analysis was conducted in three stages: data reduction, data presentation, and conclusion drawing as outlined by Miles, Huberman, and Saldaña (2014). During the data reduction stage, information relevant to digital history learning and historical literacy was selected, categorized, and grouped according to specific themes. The data presentation stage involved organizing the synthesized results into a narrative description that systematically illustrates the relationships between concepts. The final stage, conclusion drawing, was carried out by interpreting the findings to gain a comprehensive understanding of the role of digital history learning as a strategy for strengthening 21st-century historical literacy.

To enhance the validity of the study's findings, the research employed a source triangulation technique, comparing information from various types of literature including journal articles,

scholarly books, research reports, and education policy documents. Additionally, the credibility of sources was evaluated based on publisher reputation, journal quality, indexing status, citation counts, and the substantive relevance of the material to the research focus.

This step aimed to minimize interpretation bias and strengthen the validity of the synthesized research findings (Creswell & Creswell, 2023). The analysis results were subsequently synthesized using a descriptive-analytical approach to explain how digital history instruction contributes to strengthening historical literacy, developing historical thinking skills, enhancing digital literacy, and bolstering the competencies of pre-service history teachers in meeting the challenges of 21st-century education.

This synthesis serves as the basis for formulating conceptual implications regarding implementation strategies for digital history instruction that are adaptive to technological advancements and future learning needs.

RESULTS AND DISCUSSION

A. Digital History Learning as a Means to Strengthen 21st-Century Historical Literacy

A review of the literature indicates that the advancement of digital technology has shifted the paradigm of history education from one centered on the transmission of information to one emphasizing the

process of knowledge construction. Various studies reveal that the use of digital technology fosters learning experiences that are more interactive, collaborative, and contextual; consequently, students do not merely receive historical information passively but actively explore, analyze, and interpret diverse historical sources (Seixas & Morton, 2013; Wineburg, 2001; UNESCO, 2021). These findings demonstrate that digital technology serves as a tool for developing historical thinking skills while simultaneously strengthening students' historical literacy.

A synthesis of various research findings indicates that the implementation of digital history learning utilizes a diverse range of media, such as Learning Management Systems (LMS), virtual museums, digital archives, digital storytelling, interactive videos, history podcasts, and even applications based on Artificial Intelligence (AI). These media enable learners to access primary and secondary historical sources more extensively than in conventional learning settings. This increased access to various historical documents encourages learners to analyze sources, compare different perspectives, and construct arguments based on the historical evidence obtained (Lee, 2005; Barton & Levstik, 2004).

The study results also indicate that digital history learning enhances not only cognitive aspects but also affective

aspects and 21st-century skills. The use of interactive multimedia boosts learning motivation, as students gain more engaging learning experiences through a combination of text, images, videos, animations, digital maps, and historical simulations. These factors contribute to increased student engagement during the learning process, enabling students to more actively explore various historical issues independently (Redecker, 2017; OECD, 2021).

In addition to boosting learning motivation, digital history instruction also positively impacts critical thinking skills. Research indicates that students who learn using digital historical sources are better able to evaluate source authenticity, identify author bias, compare various historical interpretations, and formulate conclusions based on available evidence. These abilities are key indicators of historical literacy, as students do not merely memorize historical facts but also grasp the scientific process by which historical knowledge is constructed (Wineburg, 2001; Maposa & Wassermann, 2009).

Other findings indicate that digital history learning offers teachers the opportunity to implement student-centered learning. In this model, the teacher acts as a facilitator, guiding students as they discover information, formulate simple research questions, analyze historical sources, and present

their interpretations. This shift in the teacher's role aligns with the 21st-century learning paradigm, which positions students as active agents in constructing knowledge (Partnership for 21st Century Learning, 2019).

Historical Literacy as an Essential Competency for the 21st Century

Based on a synthesis of the literature, historical literacy is understood as an individual's ability to use historical knowledge to comprehend various contemporary issues through the analysis of historical evidence. Historical literacy is not limited to the ability to recall the chronology of events; rather, it encompasses the ability to evaluate sources, understand context, recognize change and continuity, and construct interpretations based on logical argumentation (Seixas & Morton, 2013).

Various studies confirm a strong link between historical literacy and historical thinking. Seixas and Morton (2013) explain that historical thinking comprises six key concepts: historical significance, evidence, continuity and change, cause and consequence, historical perspectives, and the ethical dimension. These six concepts serve as the foundation for developing students' ability to understand history critically. Consequently, digital history instruction that provides diverse, authentic historical

sources can strengthen each of these dimensions of historical thinking.

Other research findings indicate that students with strong historical literacy are better able to connect past events with contemporary social phenomena. They not only understand the cause-and-effect relationships of historical events but are also capable of drawing relevant lessons to address various contemporary issues, such as democracy, diversity, human rights, and national identity. Thus, historical literacy plays a strategic role in shaping democratic and responsible citizens (Barton & Levstik, 2004).

In the Indonesian context, strengthening historical literacy plays a vital role in reinforcing national identity amidst the rapid pace of globalization and the evolution of digital media. Not all historical information circulating online possesses academic validity; therefore, learners need the ability to verify the sources of the information they encounter. Consequently, digital history education should focus on developing the skills to evaluate source credibility, compare diverse historical interpretations, and avoid the spread of historical misinformation and disinformation (UNESCO, 2021).

Research findings indicate that the successful strengthening of historical literacy is influenced not only by the use of digital technology but also by the

instructional design implemented by teachers. Technology serves merely as a tool, whereas the enhancement of historical thinking skills is largely determined by teaching strategies that encourage students to engage in inquiry, discussion, reflection, and the analysis of various historical sources. Consequently, the integration of digital technology must be accompanied by an instructional approach oriented toward developing Higher-Order Thinking Skills (HOTS), ensuring that the use of technology effectively supports the achievement of history learning objectives.

CONCLUSION

A review of the literature indicates that digital history learning is an effective strategy for strengthening 21st-century historical literacy. Integrating digital technology into history instruction not only alters the medium of content delivery but also transforms the learning process, making it more interactive, collaborative, inquiry-based, and focused on developing historical thinking skills. The use of various technologies such as Learning Management Systems (LMS), digital archives, virtual museums, interactive multimedia, digital storytelling, and artificial intelligence enables learners to access, analyze, evaluate, and interpret historical sources more critically, grounded in credible historical evidence.

This study also demonstrates that historical literacy is not merely about the ability to understand facts or the chronology of past events; rather, it encompasses the ability to evaluate source credibility, comprehend historical contexts, compare diverse perspectives, construct evidence-based arguments, and connect past events with contemporary life dynamics. Consequently, strengthening historical literacy plays a vital role in shaping learners who possess critical thinking skills, digital literacy, and problem-solving abilities, as well as the character of responsible, democratic citizens.

For History Education students preparing to become history teachers, digital history instruction holds broader implications, as it supports the integrated development of pedagogical, professional, and technological competencies. Proficiency in various digital learning platforms, the ability to utilize digital historical sources, and skills in integrating technology into instruction are essential competencies for prospective teachers to meet the demands of 21st-century education. Consequently, history teacher education programs need to strengthen digital literacy, the Technological Pedagogical Content Knowledge (TPACK) framework, and the ethical and responsible use of artificial intelligence-based technologies.

Nevertheless, the implementation of digital history education still faces various challenges, including the technological infrastructure gap, educators' limited digital competencies, students' low digital literacy skills, and the rising risk of historical misinformation and disinformation spreading via digital media. Therefore, the success of digital history education depends not only on the availability of technology but also on teachers' ability to design instruction that encourages students to analyze sources, engage in reflective thinking, and construct historical knowledge critically.

Based on a synthesis of the literature, this study recommends that educational institutions particularly History Education programs develop policies supporting the integration of digital technology into the curriculum, enhance the digital competence of lecturers and teachers through continuous training, expand the use of credible digital historical resources, and develop innovative learning models aimed at strengthening historical literacy and historical thinking. Furthermore, it is suggested that future research employ empirical approaches—such as experimental studies, case studies, or mixed-methods research—to evaluate the effectiveness of various digital history learning models in improving the historical literacy of learners and pre-service history

teachers across different educational levels.

REFERENCES

- Adam, A. (2018). The vernacular press and the emergence of modern Indonesian consciousness. Cornell University Press.
- Ahyani, H., & Marlina, E. (2022). Digital learning innovation in history education in the era of Society 5.0. *Jurnal Pendidikan Indonesia*, 11(3), 455-468.
- Anis, M. Z. A., Putro, H. P. N., & Susanto, H. (2023). Digital transformation in history education: Challenges and opportunities in Indonesian higher education. *Historia: Jurnal Program Studi Pendidikan Sejarah*, 11(2), 215-230.
- Barton, K. C., & Levstik, L. S. (2004). Teaching history for the common good. Lawrence Erlbaum Associates.
- Creswell, J. W., & Creswell, J. D. (2023). Research design: Qualitative, quantitative, and mixed methods approaches (6th ed.). Sage Publications.
- Hasan, S. H. (2019). Pendidikan sejarah untuk membangun karakter bangsa pada abad ke-21. *Historia: Jurnal Pendidik dan Peneliti Sejarah*, 2(2), 61-72.
- Koehler, M. J., & Mishra, P. (2009). What is technological pedagogical content knowledge (TPACK)? *Contemporary Issues in Technology and Teacher Education*, 9(1), 60-70.
- Krippendorff, K. (2018). *Content analysis: An introduction to its methodology* (4th ed.). Sage Publications.
- Kurniawan, E., & Setiawan, J. (2022). Historical literacy through digital archives in history learning. *International Journal of Instruction*, 15(4), 875-892.
- Lee, P. (2005). Putting principles into practice: Understanding history. In M. S. Donovan & J. D. Bransford (Eds.), *How students learn: History in the classroom* (pp. 31-77). National Academies Press.
- Maposa, M. T., & Wassermann, J. (2009). Conceptualising historical literacy: A review of the literature. *Yesterday and Today*, 4, 41-57.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Sage Publications.
- OECD. (2021). *21st-century readers: Developing literacy skills in a digital world*. OECD Publishing.
- Partnership for 21st Century Learning. (2019). *Framework for 21st century learning*. Battelle for Kids.
- Putro, H. P. N., Anis, M. Z. A., & Susanto, H. (2021). The implementation of digital media in Indonesian history learning. *Journal of Social Studies Education Research*, 12(3), 124-145.
- Redecker, C. (2017). *European framework for the digital competence of educators: DigCompEdu*. Publications Office of the European Union.
- Rizal, M., & Sari, D. P. (2024). Artificial intelligence integration in history education: Opportunities and ethical challenges. *Journal of Education and Learning Technology*, 6(1), 15-29.
- Seixas, P., & Morton, T. (2013). *The big six historical thinking concepts*. Nelson Education.
- Setiawan, J. (2026). The role of interactive digital media in enhancing conceptual understanding of history in secondary schools. *Historia Jurnal Program Studi Pendidikan Sejarah*, 14(1), 467-476.
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333-339.
- Susanto, H. (2020). 21st-century history education: Challenges for history teachers in the digital era. *Jurnal Pendidikan Sejarah Indonesia*, 3(2), 95-108.

- UNESCO. (2021). *Reimagining our futures together: A new social contract for education*. UNESCO Publishing.
- Wineburg, S. (2001). *Historical thinking and other unnatural acts: Charting the future of teaching the past*. Temple University Press.
- Yusuf, M., & Fadilah, N. (2023). Virtual museum as an innovative learning resource to improve students' historical literacy. *International Journal of Learning, Teaching and Educational Research*, 22(8), 284-301.
- Zed, M. (2018). *Metode penelitian kepustakaan*. Yayasan Obor Indonesia.

