

Enhancing Historical Literacy through Technology: Exploring Teachers' Perceptions and Implementation Strategies

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Abstract. History teachers' perceptions are critically important as a foundation for developing strategies to strengthen history literacy in schools. This study examines the perceptions and strategies employed by history teachers to enhance history literacy among high school students. The research uses a qualitative method, conducting interviews with eight history teachers affiliated with the Subject Teachers Council (Musyawarah Guru Mata Pelajaran) of Tasikmalaya City. The findings reveal varied perceptions among informants regarding the definition of history literacy, which encompasses activities such as reading history books, engaging in activities that foster critical thinking, and developing the skills of historical analysis. The strategies employed by teachers to improve history literacy include implementing School Literacy Movements, encouraging reflective discussions, assigning history writing tasks related to the school, utilizing technology as a stimulant—such as documentary videos and social media—and incorporating primary sources like archives, photos, documentary videos, and audio recordings into history instruction. Thus, diverse perceptions of history literacy among teachers lead to a variety of strategies aimed at enhancing it. Teachers who perceive history literacy merely as reading and writing history books encounter limitations in innovative teaching practices to promote a more comprehensive strengthening of history literacy. The results of this study can serve as a basis for designing professional development programs for history teachers, as well as providing input for Teacher Training and Education Institutions to develop curricula that foster enhanced history literacy skills.

Keywords: history teacher; historical literacy; teacher's perspective; teachers' strategy; technology

INTRODUCTION

Technological changes in the 21st century have led to fundamental changes in education. The educational system is geared towards achieving 21st-century skills, including critical thinking, creativity, communication, literacy, character, collaboration, leadership, citizenship, initiative, and social skills (Tanjung & Supriatna, 2021; Trilling & Fadel, 2009). In the past, learning only involved reading, writing, and numeracy skills. However, today's modern

world of education has transformed the learning pattern into a digital one. Teachers and schools often report that they struggle to create classrooms with creative learning spaces that enable students to compete and learn both independently and collaboratively. One of them is through the integration of technology in learning (Rifin et al., 2019).

In the 21st century, historical literacy is an essential component that aims to equip learners not only with knowledge of the past but also with analytical skills to interpret historical narratives and their relevance to contemporary life (Lee, 2005; Maposa & Wassermann, 2009; Nippi, 2022). However, history learning, which is often dominated by the memorization of facts and the passive use of textbooks, rarely connects historical material with students' real-life experiences. Teachers need to instill aspects of historical thinking that involve understanding both the past and the underlying reasons for the information or knowledge about the past (Armiyati & Purwanta, 2024). This condition encourages educators to adopt a more dynamic and interactive approach to teaching history, particularly through the use of educational technology.

Technology plays a significant role in expanding the horizons of history learning and strengthening students' historical literacy. With the use of technology, historical events can be visualized, simulated, and even represented in an immersive way through digital media, including video, augmented reality (AR), and interactive maps. This enables students to develop a deeper, more critical understanding of history that is relevant to their lives. During massive digital information flows, historical literacy skills become increasingly important so the students can sort out historical facts, recognize bias, and compare various sources reflectively. Additionally, technology provides access to primary historical sources, including digital archives and visual recordings, which enrich students' understanding of the past. Without the integration of technology, history learning risks feeling stilted and less relevant to the learning styles of the digital generation. Therefore, the integration of technology in history learning is not just a complement but an urgent need in responding to today's educational challenges.

Teachers are the primary agents in shaping classroom practices and designing learning experiences. Their understanding of historical literacy, which includes critical interpretation of sources, bias recognition, and contextual analysis, directly influences the way they select material, formulate historical questions, and develop students' analytical skills (Kurniawati et al., 2022). Similarly, their beliefs, confidence, and pedagogical knowledge of technology use determine whether digital tools are employed solely as a presentation tool or as transformative tools for inquiry-based and immersive learning.

Although the importance of technology in improving historical literacy has been recognized (e.g., through digital archives, interactive maps, AR, and primary source analysis), research exploring how teachers themselves perceive and implement this integration is still limited. Many teachers may value the historical literacy conceptually but have difficulty implementing it in practice due to a lack of technology training, limited resources, or uncertainty in aligning digital tools with historical thinking processes (Lin et al., 2024). Conversely, technologically competent teachers may lack an in-depth understanding of historical literacy, resulting in the use of digital media that is superficial without critical engagement with historical content.

The gap lies in a limited understanding of how teachers view the uses, challenges, and potential of technology in developing historical literacy. Exploring these perceptions is critical to identifying barriers, facilitating targeted training, and developing policies that support innovative technology-enabled history teaching. Addressing these gaps ultimately aims to improve teaching approaches, improve students' historical literacy, and ensure that history education remains relevant and engaging in the digital age. Winahyu et al. (2018) states that technology can provide students with easy access to primary historical sources, such as digital archives and visual recordings, thereby enriching their perspectives. This research aims to answer the following questions:

RQ1: What are the perceptions of teachers towards historical literacy?

RQ2: How can technologies be used to enhance historical literacy?

LITERATURE REVIEW

Historical literacy is a toolkit that can help students understand the present and the future in the context of the past, providing insight from a historical perspective and a practical framework for understanding the past (Lee, 2005). Maposa & Wassermann (2009) conceptualize historical literacy in several indicators, namely content knowledge,

second-order concepts (e.g., change and continuity, cause and consequence), sources of work (e.g., sources, reinforcement, contextualization), and historical awareness and understanding.

Competence in historical literacy does not depend so much on reading skills alone, but on the accurate expression of historical functions, including the ability to identify events, the ability to write historical transformations adequately in comparison to previous situations, and the ability to reflect on alternative scenarios that may have changed the course of history. Through this, students have an individual understanding of how events unfold and can offer their interpretations of stories (Lorenzo, 2017).

Nippi (2022) identify the creative use of historical literacy is related to several things, namely a. building historical knowledge and its relation to historical knowledge, b. understanding historical concepts, and c. differences between similar historical concepts. Thus, the concept of historical literacy refers not only to knowledge but also to its application in the real world, so that students can recall historical events and document their perspectives.

To enhance historical literacy among students, educators can employ a variety of innovative teaching strategies that foster critical thinking and engagement with historical content. Educators can enhance historical literacy by using primary and secondary documents for analysis, incorporating films, and employing the historical inquiry model, which includes provoking curiosity, collecting data, practicing argumentation, and reflective thinking to engage students as historical researchers (Armiyati & Purwanta, 2024). Historical literacy can be improved by exposing students to historians' texts, teaching historians' thinking strategies, requiring students to read and write like historians, and fostering a discourse community that values critical thinking, evidence use, and peer review (Nokes, 2022). Downey & Long (2020) stated that historical literacy can be enhanced by creating conceptual overviews, helping students collect and analyze evidence, and engaging them in various learning types, including factual, procedural, conceptual, and metacognitive approaches, as outlined in "Teaching for Historical Literacy."

Technology significantly enhances student engagement in historical literacy by providing innovative, interactive, and personalized learning experiences that cater to individual needs. The effective use of Information and Communication Technologies (ICT) can enhance the organization and management of historical materials, making access to historical content easier and enabling multiple representations of historical phenomena. Pedagogical interventions that utilize technology, such as audiovisual documentaries and specific software, can improve students' historical literacy skills if implemented correctly (Wilson et al., 2023). The use of technology in historical films can be leveraged to enhance historical literacy. Films are considered to develop critical thinking, interpretation, and analysis skills in the process of constructing history, as well as strengthening memory (Mavrommatis & Repoussi, 2020). The use of films can be combined with the flipped classroom method to improve students' historical knowledge and skills.

METHOD

A qualitative approach was employed to gather data on the perceptions of history teachers regarding historical literacy and strategies for integrating technology. Interviews were conducted with eight history teachers from public schools affiliated with the Subject Teachers Council (Musyawarah Guru Mata Pelajaran) in Tasikmalaya City, with varying lengths of service, specifically those with less than 10 years and more than 10 years of service. All respondents teach history at the upper-secondary level (grades 10-11) and represent a mix of male and female teachers.

The interviews were conducted in person at the schools after working hours. Data analysis was conducted following six interactive and iterative qualitative analysis steps (Cresswell, 2016), starting from data collection to the compilation of final findings. First, organize and prepare data by transcribing interview recordings and field notes. Second, the entire dataset is read to gain an initial understanding, identifying key ideas, general impressions, and early patterns related to teachers' perceptions and strategies for implementing technology in historical literacy. Third, coding involves analyzing the data using open coding, where labels are assigned to relevant units of meaning. These initial codes include aspects such as teachers' perceptions of historical literacy, the types of technology used, and learning strategies. Fourth, developing categories or themes by combining codes with similarities into broader categories. Fifth, presenting the data in narrative form, and sixth, interpreting the findings. This interpretation also considers the practical implications for teacher training and the development of digital teaching materials.

To ensure the trustworthiness of the findings, member checking was employed as key validation strategies. Member checking was conducted to derive the accuracy and authenticity of the data and interpretations (Cresswell, 2016). After the interviews were transcribed and the initial coding was completed, each participant received their interview transcript and a brief summary of the preliminary themes identified by the researcher. Teachers were asked to review these documents and provide feedback on whether their statements had been accurately captured and whether the thematic interpretations reflected their experiences.

RESULTS AND DISCUSSION

This study involved in-depth interviews with eight history teachers from public schools in Tasikmalaya City. As a qualitative inquiry with a small, context-specific sample, the findings are not intended to be statistically generalizable to all history teachers in Indonesia. Instead, the results provide context-rich insights into how teachers in this particular setting perceive historical literacy and integrate technology in their teaching practices. While the themes identified may resonate with similar educational contexts, they should be interpreted with caution and understood as illustrative rather than representative of all history teachers.

Teachers' Perceptions of Historical Literacy

This study employed qualitative analysis, based on thematic coding, to examine teachers' perceptions of historical literacy. Regarding the definition of historical literacy, initial coding was carried out to capture the basic meanings that emerged from the data. The initial codes were regrouped through focused coding to find mode-directed patterns of meaning. The next stage involved deeper thematic coding, a process that explores more abstract and conceptual meanings to reveal the dimensions of teachers' thinking. This approach is to identify key themes that represent the diversity of teachers' perspectives, while linking them to the theoretical framework of historical literacy. The results of the thematic coding are presented in Table 1.

TABLE 1. Teachers' perceptions of historical literacy

Theme	Teachers' perception	Contributing informants
Historical literacy as civic competence	Historical literacy is perceived as a means of developing life skills and preparing students to engage as reflective citizens.	NK
Critical-contextual engagement	Teachers emphasize the ability to think critically about historical issues, appreciate historical contexts, and interpret the past with sensitivity and reflection.	AM, NS
Multimodal historical evidence	Historical literacy is understood as the capacity to utilize diverse sources—such as texts, artifacts, audio, visual, and audiovisual materials—to construct a comprehensive understanding of history.	HS, MA
Methodological literacy	Teachers emphasize the importance of mastering historical research tools, analytical skills, and interpretive methods as the foundation for developing a historical perspective.	TS, NH
Foundational literacy as a gateway	Basic skills in reading and writing are considered essential gateways to developing higher-order historical reasoning and the ability to articulate evidence-based arguments.	DD

These themes reveal that teachers conceptualize historical literacy not merely as the ability to read or recount historical facts but as a complex competence that integrates civic purpose, critical analysis, multimodal engagement, and disciplinary methodology. Such an understanding aligns with theoretical perspectives on historical thinking and disciplinary literacy, suggesting that effective history education requires moving from basic literacy toward critical,

evidence-based interpretation and civic engagement. The emphasis on critical-contextual engagement means historical thinking as the ability to interrogate sources, contextualize evidence, and reason with uncertainty.

The use of primary sources begins with selecting sources relevant to the topic, analyzing them, discussing their findings, and then reflecting on them collectively. The use of primary sources combined with discussion activities is a way to strengthen historical literacy. During the discussion process, students search for sources, verify information, and interpret it. Discussions about sources and interpretation are crucial components of historical literacy (Downey & Long, 2020; Kurniawati et al., 2022; Nippi, 2022). Similarly, the theme of methodological literacy aligns with Da Rocha Seixas et al. (2016) and (Nippi, 2022) historical thinking concepts, particularly the disciplinary use of evidence and the construction of historical interpretations. Nippi defines historical literacy as the ability to understand, analyze, and use historical knowledge in real-life contexts. He emphasizes three dimensions: historical cognitive (understanding historical facts, concepts, and narratives), historical metacognitive (awareness of how historical knowledge is constructed), and historical application (using history to solve contemporary problems).

The recognition of multimodal historical evidence reinforces the call by Lee (2005) for students to engage with diverse forms of primary sources beyond written texts. Lee (2005) states that historical literacy is an activity of historical investigation involving four key concepts: historical cause and effect, evidence and interpretation, historical significance, and historical perspective and empathy. Based on this, most teachers already understand historical literacy because they have defined it as encompassing historical methodology, critical thinking, and the use of evidence (including multimodality) from historical sources. Some teachers incorporated primary sources into their learning activities, such as photographs, documentary films, audio recordings, newspapers, archives, and visits to historical sites. The main purpose of using primary sources is to reinforce the material and show historical facts. However, there are still teachers who merely "know history" because they focus on reading, writing, and basic knowledge. Therefore, the teacher responded to the question about the strategy used to improve historical literacy by involving students in the School Literacy Movement. The school literacy movement is more about reading books for about 10 minutes.

The framing of historical literacy as a tool for civic competence echoes Rusen's theory of historical consciousness, which views historical understanding as integral to informed citizenship and democratic participation (Rusen, 2004). By integrating these dimensions, the teachers move beyond a narrow focus on factual recall, instead envisioning historical literacy as a holistic competence that cultivates critical inquiry, methodological rigor, and civic responsibility.

Historical literacy is not merely the ability to memorize facts, but rather the skill of critical thinking, analyzing sources, and constructing meaningful historical interpretations. Teachers' understanding of this concept is crucial to the success of historical literacy learning in schools. Teachers' knowledge of historical literacy will have an impact on students' success in achieving historical literacy skills, which are content knowledge, second-order concepts (e.g., change and continuity, cause and consequences), sources of work (e.g., sources, reinforcement, contextualization), and historical awareness and understanding (Maposa & Wassermann, 2009). Students taught by teachers with a good knowledge of historical literacy demonstrate higher skills in source analysis, stronger historical argumentation, and a greater interest in social issues related to history.

The Use of Technology to Enhance Historical Literacy

In this ever-evolving digital age, technology has become a transformative tool in various fields, including the field of history education. Historical literacy now requires critical thinking skills, the ability to analyze sources, and the ability to construct a multidimensional understanding of the past. In this context, technology plays a vital role as a catalyst that expands access, enriches learning methods, and deepens historical understanding. MA and DD stated that he used documentary films available on YouTube and his collection obtained from film provider websites. Additionally, MA utilizes social media platforms like Instagram and TikTok to search for photos and videos related to learning. NS does the same, stating that the use of documentary videos and social media-based assignments is his effort to integrate technology into the learning of history. HS, NH, AM, and TS prefer to use digital archives or photos available on the Internet and request students to analyze them. The following are some of the technologies mentioned by teachers as efforts to improve historical literacy.

One of the most commonly used tools is video. Teachers use short videos containing historical information, such as videos of the reading of the proclamation text, videos about temples, videos of the 1998 Reformation demonstrations, and other videos obtained from YouTube and online mass media. There are several ways in which informants use videos. Informant NS uses short videos of less than 10 minutes to reinforce information from the teacher, allowing students to gain a broader perspective. Thus, the use of videos is integrated into core activities when the teacher explains. Informant NK uses the video as a material trigger; therefore, it is presented at the beginning of the learning activity. In this context, the video is used to provide students with initial knowledge. After watching the video, the teacher guides students in answering questions related to the material presented in the video.

Video serves as a tool in shaping historical literacy, although its effectiveness and application vary. Videos can be used to generate interest, represent historical events, and develop critical thinking skills, but they also present challenges related to accuracy and interpretation (Wilson et al., 2023). The use of video in education requires careful pedagogical strategies to ensure that it enhances rather than detracts from historical understanding.

Teachers also draw on films, particularly documentary or semi-documentary films that are relevant to the material in the classroom. However, the duration of the film is often a consideration, as not all films can be used in teaching. In the case of documentary films, teachers must ensure that the film is relevant to the material being taught and that the information presented is accurate and factual. A study on social studies preservice teachers found that the frequency of watching historical movies had a positive influence on their perceptions of historical literacy. Students who watched historical films at least once a month had higher total scores in historical literacy and objectivity compared to those who never watched them (Akhan & Çiçek, 2021). Historical films have certain criteria, including the inclusion of historical facts and a balance between the filmmaker's perspective and the historical context. Therefore, teachers who have a good understanding of history can select the right films (Kurniawati et al., 2021).

Another significant technological avenue is social media, particularly platforms like Instagram and TikTok. MA and NS stated that they use social media such as Instagram and TikTok to access primary sources that are usually included in educational history content and digital archives. In addition to using it to search for sources, social media is also used to upload students' project results on historical content. The inherent nature of social media platforms is that they provide equal access opportunities for every individual, regardless of demographic characteristics. Despite certain limitations, these digital forums facilitate the exercise of significant democratic values, including the capacity of individuals to articulate their perspectives, engage in discourse, organize, and navigate everyday life and formal procedures. An essential benefit of social media is its ability to facilitate the revision and reinforcement of information acquired in an academic setting. This beneficial aspect of social media enables students to engage with educational content and activities beyond the school classroom, thereby enhancing their learning experience. The Internet has been shown to have several significant advantages, namely enriching the learning environment with multimedia elements, allowing for control over the learning process, and providing students with appropriate learning opportunities at their own pace (Okumuş, 2018). Additionally, it provides easy access to content. Through social media, students can easily find information. A notable weakness of social media use is that it is often uncontrolled. Therefore, teachers must be cautious when guiding students to find information on social media. Since social media serves as a communication tool, students sometimes struggle to maintain their concentration while using it. Therefore, it is crucial to allocate sufficient attention and foster motivation toward learning. Teachers need to establish clear rules when utilizing social media in history lessons.

Technology offers various tools and resources that can significantly enhance students' historical literacy. The effective use of Information and Communication Technologies (ICT) can improve the organization and management of historical materials, making access to historical content easier and enabling multiple representations of historical phenomena (Nippi, 2022). Pedagogical interventions that utilize technology, such as audiovisual documentaries and specialized software, can enhance students' historical literacy skills when implemented effectively (Wilson et al., 2023). Teachers can use audiovisual aids, such as videos, movies, slides, and maps, to complement school textbooks, which helps foster an understanding and experiential approach to history. A study found that watching historical movies positively contributed to the historical literacy of preservice teachers (Akhan & Çiçek, 2021). The use of audiovisual documentaries, such as those on YouTube, has been shown to have a positive effect on student interest and achievement in history (Wilson et al., 2023).

There are several aspects that teachers need to consider when using technology for history literacy. One aspect concerns determining the learning model. One pedagogical approach is the flipped classroom, where technology is used for student-centered activities. This model can cultivate historical thinking skills through collaborative activities and debates, although the gains are more related to the additional time for these tasks rather than the technology itself (Wilson et al., 2023).

Another aspect relates to internet research skills. Activities can be designed to help students develop internet research skills. For example, using the fragmentary nature of hypertext can help students understand that history itself is often fragmentary and non-linear. This involves students using hypertext links to search the web, select documents, and assess the validity of the evidence they find.

A further aspect is the shifting roles of teachers and students. In a virtual world, the teacher's role shifts from a primary resource provider to a guide and mentor, training students in source evaluation techniques to critically assess internet sources. For example, in the use of social media. Social media is a double-edged sword: it can be a powerful learning tool, but it can also be a source of misinformation. With the right approach, teachers can use it to enrich historical learning resources, encourage active student participation, and train digital literacy and critical thinking skills (Geng et al., 2019; Magro et al., 2014).

The integration of technology in history education closely aligns with the themes identified in teachers' perceptions of historical literacy, reinforcing and operationalizing each dimension in practice. Teachers who emphasize history-based life skills (NK) use videos and social media to connect historical reasoning to contemporary issues and civic participation. The theme of historical awareness and critical thinking (AM) is strengthened by digital tools such as documentary films and interactive videos, which provide opportunities for students to question narratives, compare multiple perspectives, and develop analytical skills. The multimodality of historical sources directly resonates with the use of diverse digital platforms such as YouTube, Instagram, and TikTok, which allow students to engage with artifacts, images, and audiovisual materials beyond traditional textbooks. Teachers who emphasize the critical analysis of historical information (MA) utilize technology to stimulate discussion and promote evidence-based interpretation, encouraging students to assess the accuracy and bias in online content. Similarly, the theme of basic literacy and historical reasoning (NS) is supported through carefully selected short videos and social media tasks that reinforce fundamental reading and writing skills while introducing students to primary digital sources. Finally, the theme of historical research methodology (TS and NH) finds expression in the use of digital archives and online historical data, where students learn to collect, analyze, and interpret sources using research-based approaches. These connections show that technology is not merely an instructional aid but a transformative medium that amplifies each theme of historical literacy, particularly facilitating critical engagement, broadening access to authentic sources, and fostering a more participatory and inquiry-driven historical learning process.

CONCLUSION

This study reveals that teachers' perceptions of historical literacy vary, ranging from a basic understanding of reading and writing skills to critical and contextual engagement, the use of multimodal evidence, and methodological rigor. It is deeply intertwined with the use of technology in teaching. Technology serves not only as a supporting tool but as a catalyst that operationalizes the themes of historical literacy by expanding access to diverse historical sources, encouraging critical thinking, and fostering inquiry-based learning. Videos, films, and social media platforms provide authentic materials that enable students to question narratives, analyze evidence, and construct a multidimensional understanding of the past. Teachers who adopt a more advanced and critical perspective on historical literacy tend to utilize technology in more sophisticated ways, guiding students toward higher-order reasoning and civic awareness. Meanwhile, even those with more basic literacy perspectives benefit from technology to reinforce foundational skills. Theoretically, this research contributes to the development of historical literacy by demonstrating how digital tools enhance critical thinking and multimodal source analysis, thus extending existing frameworks of historical reasoning. Practically, it provides evidence that integrating technology into history teaching can bridge gaps between traditional instruction and 21st-century learning needs, offering concrete strategies for applying videos, films, and social media to promote historical literacy. These findings underscore the importance of professional development for teachers in mastering educational technology, as well as the need for academic institutions to integrate digital media into the

curriculum to strengthen historical literacy. Teacher training programs should include structured modules on technology-driven historical inquiry, ensuring that teachers gain both theoretical grounding and hands-on experience with digital tools. Curriculum design should embed explicit historical literacy outcomes and provide inquiry-based projects that require students to analyze multimodal evidence using technology. At the policy level, education authorities should develop national standards for historical literacy that incorporate digital competencies, allocate funding for schools to access high-quality digital resources, and establish assessment frameworks to ensure that history education remains relevant, rigorous, and transformative in the digital age.

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