

Integration of Digital Storytelling in Project-Based Learning: A Systematic Literature Review

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Abstract: Limited student engagement, passive teaching patterns, and underdeveloped historical thinking skills pose challenges to history learning. Therefore, in the context of rapid digital transformation, innovative, student-centered pedagogies are essential to create meaningful learning experiences. However, technology integration often remains confined to technical implementation and lacks a robust pedagogical framework. This study aims to identify, examine, and synthesize the usage patterns, impacts, challenges, and opportunities associated with integrating digital storytelling into project-based history learning. Employing a Systematic Literature Review (SLR) methodology, this research synthesizes findings from 14 articles sourced from Scopus and Web of Science, with Google Scholar utilized as a supplementary database, covering publications from 2019 to 2025. The reviewed literature indicates that digital storytelling functions as an integrated meaning-making tool, spanning from source exploration to historical reflection. The findings show that integrating digital storytelling into project-based history learning supports students' historical understanding, engagement, digital literacy, and historical empathy through contextual and reflective learning processes. However, successful implementation depends not only on technological infrastructure but also on teachers' pedagogical readiness and instructional scaffolding. The implications of this study emphasize that integrating project-based learning and digital storytelling requires a shift from technical mastery to structured pedagogical support to facilitate meaningful learning of history in the digital era.

Keywords: digital storytelling; history education; project-based learning; systematic literature review

Abstrak: Keterlibatan siswa yang terbatas, pola pengajaran yang pasif, dan keterampilan berpikir sejarah yang belum berkembang menjadi tantangan dalam pembelajaran sejarah. Oleh karena itu, di tengah transformasi digital yang pesat, pendekatan pedagogis yang inovatif dan berpusat pada siswa sangatlah penting untuk menciptakan pengalaman belajar yang bermakna. Namun, integrasi teknologi sering kali hanya terbatas pada aspek teknis dan kurang didukung oleh kerangka kerja pedagogis yang kokoh. Penelitian ini bertujuan untuk mengidentifikasi, mengkaji, dan menyintesis pola penggunaan, dampak, tantangan, serta peluang terkait integrasi *digital storytelling* (bercerita secara digital) ke dalam pembelajaran sejarah berbasis proyek. Dengan menggunakan metodologi *Systematic Literature Review* (SLR), penelitian ini menyintesis temuan dari 14 artikel yang bersumber dari Scopus dan Web of Science—serta Google Scholar sebagai basis data tambahan—yang mencakup publikasi dari tahun 2019 hingga 2025. Literatur yang dikaji menunjukkan bahwa *digital storytelling* berfungsi sebagai sarana terintegrasi untuk membangun pemahaman dan makna, mulai dari tahap eksplorasi sumber hingga refleksi sejarah. Temuan penelitian mengungkapkan bahwa integrasi *digital storytelling* dalam pembelajaran sejarah berbasis proyek dapat mendukung pemahaman sejarah, keterlibatan, literasi digital, dan empati sejarah siswa melalui proses pembelajaran yang kontekstual dan reflektif. Akan tetapi, keberhasilan penerapannya tidak hanya bergantung pada

infrastruktur teknologi, melainkan juga pada kesiapan pedagogis guru dan dukungan instruksional yang memadai (*scaffolding*). Implikasi dari penelitian ini menegaskan bahwa penggabungan pembelajaran berbasis proyek dan *digital storytelling* menuntut adanya pergeseran fokus dari sekadar penguasaan teknis menuju dukungan pedagogis yang terstruktur, demi memfasilitasi pembelajaran sejarah yang bermakna di era digital.

Kata Kunci: digital storytelling; pembelajaran sejarah; pembelajaran berbasis proyek; systematic literature review



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Introduction

History education, as an essential component of social studies education, demands pedagogical approaches capable of developing students' critical and reflective thinking skills as well as their understanding of past human experiences and social life dynamics. In this context, history learning can no longer rely on traditional, memorization-centered approaches, as such methods are considered inadequate in helping students deeply comprehend the meaning of historical events Burgos-Videla et al. (2025). Instead, history learning is expected to be oriented toward the development of historical thinking, which emphasizes the ability to analyze, interpret, and reconstruct past events contextually. This aligns with the paradigm of the Merdeka Curriculum, which mandates a learning transformation that is more relevant, flexible, and learner-centered (Kemendikbudristek, 2022). Indeed, 21st-century competency demands underscore that the learning process should focus not only on content mastery but also on creating meaningful learning experiences (Lee, 2023). Therefore, history education requires instructional approaches that encourage students to actively construct historical knowledge rather than merely receive information about the past.

Dewi and Muhibbin (2024) identify that the transformation of social studies learning in practice still faces significant challenges, particularly in actualizing abstract historical content. Similarly, classroom implementation remains dominated by conventional, teacher-centered approaches, resulting in students tending to become passive recipients of information (Dewi & Muhibbin, 2024; Mujiyati & Sumiyatun, 2016). This condition causes history learning to be frequently perceived as an unengaging subject, ultimately diminishing its relevance to students' lives. This condition causes history learning to be frequently perceived as less engaging and disconnected from students' everyday experiences, ultimately diminishing its relevance to their lives (Pangestu & Kurniawati, 2019). This highlights the need for instructional media and approaches that can present historical content in a more contextual, visual, and meaningful manner. Katifori et al. (2020), demonstrate that visually-rich media can create more immersive and engaging history learning experiences. In fact, history learning requires the development of historical thinking skills, including understanding context, interpreting sources, and reconstructing past events through historical imagination (Sjamsuddin, 2007; Supriatna & Maulidah, 2020). This condition highlights the urgent need for instructional innovations that can facilitate more active, reflective, and engaging learning experiences for students. The gap between national curriculum expectations and learning practices that remain predominantly conventional underscores the need for more adaptive pedagogical innovations capable of fostering active student participation. In this context, the utilization of digital technology, specifically digital storytelling, emerges as a relevant alternative to bridge complex historical content with the learning preferences of the digital generation.

Several studies examining digital storytelling have demonstrated its positive impact on learning. Petousi et al. (2022) found that digital storytelling is effective in supporting student learning engagement. Meanwhile, Saripudin et al. (2021) emphasized that the implementation of this medium also contributes to strengthening digital literacy, which has become an essential competency in today's information era. Furthermore, in the context of history and social studies education, the implementation of project based learning has been shown to be effective in enhancing students' collaborative skills and learning engagement, making it a relevant instructional model for 21st-century competencies (Kinasih & Ratnawati, 2024). However, studies that systematically integrate digital storytelling within a project-based learning framework remain relatively limited. Most studies tend to position digital storytelling merely as a medium or final product, without examining its role as an integral part of students' overall cognitive process. In contrast, Kim et al. (2021) demonstrate that digital storytelling can function effectively as a tool for reflection, allowing students to process their understanding more deeply during the project. The same limitation applies to research on project-based learning in history education. place greater emphasis on how the PjBL model enhances students' collaborative skills, while Lim et al. (2023) focus more on leveraging technology to support the effectiveness of group work during project implementation. This condition indicates the absence of a comprehensive synthesis regarding how these two approaches can be strategically integrated as cognitive instruments in history education. Thus, the synergy between project-based learning and digital storytelling offers a more comprehensive approach, in which technology no longer functions merely as a presentation tool, but rather as an instrument for authentically reconstructing historical knowledge through systematic project stages. Within history education, this integration provides opportunities for students to engage in processes of inquiry, interpretation, reflection, and representation of historical knowledge through meaningful learning activities.

This review is grounded in a constructivist perspective, which views learning as an active process in which learners construct knowledge through experience, inquiry, reflection, and social interaction rather than passively receiving information (Piaget, 1970; Vygotsky, 1978). In history education, constructivism emphasizes that students develop historical understanding by interpreting historical evidence, reconstructing historical narratives, and connecting new knowledge with prior experiences. Accordingly, the integration of project-based learning and digital storytelling aligns with this perspective by engaging students in collaborative inquiry, authentic problem-solving, and the creation of meaningful digital narratives. Therefore, constructivism serves as the theoretical perspective guiding the synthesis and interpretation of the studies included in this systematic literature review.

Addressing this gap, this study aims to identify, examine, and synthesize prior research findings on the integration of digital storytelling within project-based learning models in history education. Specifically, this research is directed at answering three research questions: (1) What are the patterns of utilization and forms of integration of digital storytelling in project-based history learning? (2) How does this integration impact the quality of history learning? and (3) What challenges and opportunities arise in its implementation within the context of history and social studies education?. This study is expected to provide both theoretical and practical contributions. Theoretically, it enriches history education literature by presenting a systematic synthesis of technology integration within a project-based learning framework. More specifically, this study contributes by mapping the patterns of integration, learning impacts, and implementation challenges of digital storytelling in project-based history learning, thereby providing a broader understanding of how digital technology can support meaningful historical learning experiences. Practically, the findings can serve as a reference for educators in

designing more innovative history learning activities that integrate digital technology with appropriate pedagogical frameworks and provide considerations for future research and educational practices related to technology-enhanced history education.

Research Methods

This study employs a Systematic Literature Review (SLR) method to identify, examine, and synthesize previous research findings related to the integration of digital storytelling within project-based learning in history education and related social studies context. The SLR approach was selected because it enables a systematic analysis of existing studies to identify patterns of implementation, learning impacts, and challenges related to digital storytelling integration in historical learning contexts. The SLR process was conducted in a structured and transparent manner by adapting the main stages of the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework, which include identification, screening, eligibility assessment, and literature synthesis. In the identification stage, literature search was conducted systematically using Publish or Perish through the Scopus, Web of Science, and Google Scholar databases, employing a search strategy with Boolean operators to enhance result precision. The keywords used were: (“digital storytelling”) AND (“project-based learning” OR “PjBL”) AND (“history learning” OR “social studies”). With this combination, the initial search yielded 40 documents published between 2019 and 2025.

Screening

At this stage, the 40 identified documents were examined to remove duplicate records and assess the relevance of titles and abstracts. A total of 15 documents were excluded due to irrelevance or duplication, leaving 25 articles for more in-depth evaluation. To minimize selection bias, the screening process was conducted through independent cross-checking and discussion to reach consensus on the articles to be retained.

Eligibility

The 25 previously selected articles were read in full to ensure their substantive alignment with the research objectives. At this stage, inclusion and exclusion criteria were applied, resulting in the elimination of 11 articles that did not explicitly discuss project-based digital storytelling in history education. Consequently, 14 articles were considered eligible and included in the synthesis process. The eligibility assessment focused on the relevance of the articles to the research objectives, particularly their discussion of the implementation, impacts, challenges, or opportunities of project-based digital storytelling in history or social studies education.

Table 1. Inclusion and exclusion criteria

Criterion	Inclusion	Exclusion
Document Type	Journal articles and conference proceedings	Non-research articles
Language	English and Indonesian	Other languages
Year	2019-2025	Before 2019 and after 2025
Topic	Digital storytelling, project-based learning, history/social studies	Not relevant to the study

Source: Research Data, 2026

Based on the application of these criteria, 11 articles were excluded, leaving 14 studies that fulfilled the eligibility criteria and were included in the synthesis process. The study selection process is illustrated in Figure 1.

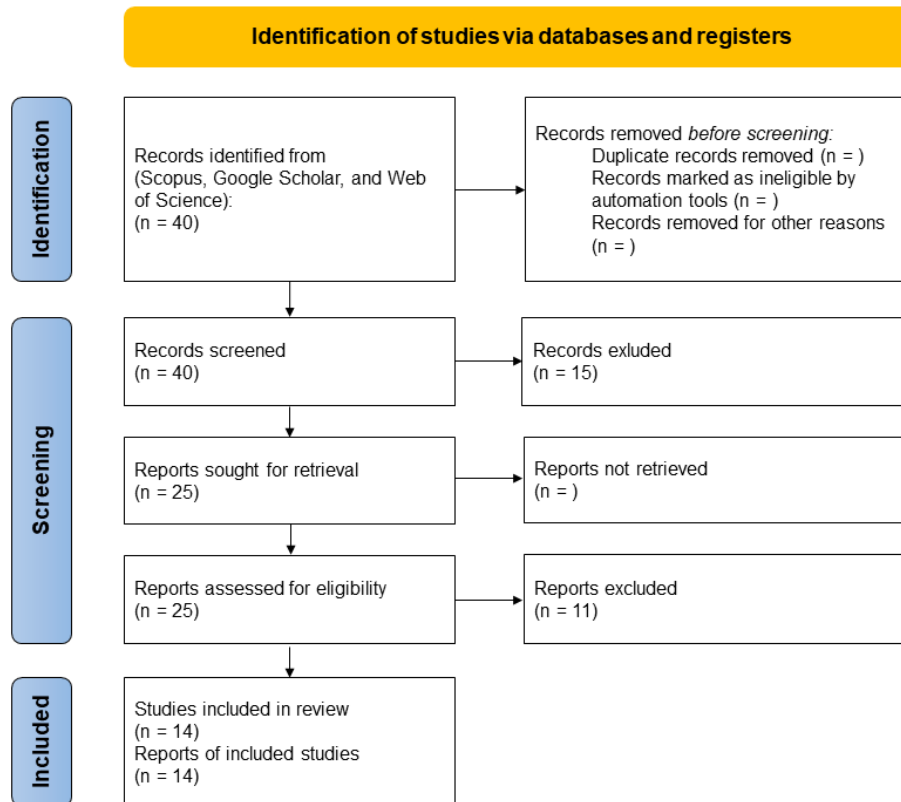


Figure 1. PRISMA flow diagram of the study selection process

Source: Research Data, 2026

Synthesis

Following the eligibility assessment, the synthesis stage was conducted through a thematic analysis of the 14 selected articles. A systematic coding framework was applied to group the findings into three main themes: (1) patterns of implementation of project-based digital storytelling, (2) impacts on history and social studies learning, and (3) challenges and opportunities in its implementation. The coding process was carried out iteratively to identify how digital storytelling functions within project-based learning processes.

Table 2. Summary of Reviewed Literature

Paper ID	Year	Author(s)	Journal	Relevance to Research Questions
P1	2023	Lim, et al.	Journal of Education and Learning (EduLearn)	Examines the implementation of project based learning in history education and the challenges of its application.
P2	2022	Petousi et al.	Frontiers in Education	Demonstrates that collaborative interactive digital storytelling enhances student engagement, reflection, and historical empathy in history learning.

P3	2019	Rahim et al.	The 2nd International Conference on Sustainable Development and Multi-Ethnic Society	Discusses the potential of project-based learning in improving historical thinking skills and empathy values in 21st-century history learning
P4	2020	Saripudin et al.	International Journal of Instruction	Shows that digital storytelling in social studies learning strengthens digital literacy, reflection, and character development.
P5	2020	Susilo, A. & Sofiarini, A.	Jurnal Komunikasi Pendidikan	Emphasizes the role of history teachers in developing technology-based innovative learning to improve student understanding and engagement.
P6	2025	Sabillah, A. A. & Suprijono, A.	Avatara : Jurnal Pendidikan Sejarah	Provides empirical evidence that integrating digital technology into project-based learning improves students' historical concept understanding and learning engagement.
P7	2025	Purwoto, S. & Kurniawan, G. F.	Jurnal Pendidikan IPS	Indicates that integrating digital storytelling into project based learning effectively strengthens students' historical literacy through contextual and participatory learning.
P8	2025	Puspitasari et al.	Pedagogia : Jurnal Pendidikan	Examines the role of visual and narrative-based digital storytelling in enhancing engagement, conceptual understanding, and 21st-century skills.
P9	2025	Syawalina, N. N. & Subandi, S.	Karimah Tauhid	Confirms that combining storytelling, digital media, and project-based learning improves students' understanding and learning motivation in social studies.
P10	2024	Rohimah et al.	Jiic : Jurnal Intelek Insan Cendekia	Highlights the importance of digital technology as a supporting tool for social studies learning in understanding complex concepts in the 21st century.
P11	2024	Tazkia et al.	JICN : Jurnal Intelek dan Cendekiawan Nusantara	Discusses digital technology integration in social studies learning as a strategy to create interactive, collaborative, and relevant learning experiences.
P12	2020	Kim, D. & Li, M.	J. Comput. Educ	Examines patterns of integrating digital storytelling as a project-based learning product that promotes reflection and historical meaning-making.
P13	2021	Kim et al.	Journal of Curriculum Studies Research	Explores digital storytelling as part of project-based learning that supports multimodal reflection, digital literacy, and student engagement.
P14	2019	Tomczyk et al.	In Veteška, Jaroslav (Eds.), Adult Education 2018 -	Identifies challenges and opportunities in implementing project based digital storytelling in social studies education.

Transformation in
the Era of
Digitization and
Artificial
Intelligence

Source: Research Data, 2026

Research Result

Pattern of Utilization and Forms of Digital Storytelling Integration in Project-Based History Learning

Based on the synthesis of the 14 selected articles, several patterns were identified regarding the integration of digital storytelling within project-based history learning. The use of digital technology in history and social studies education provides opportunities to create contextual learning experiences that connect historical content with students' experiences and environments (Rohimah & Rahmawati, 2024). In the same way, Tazkia and Safitri (2024) state that digital and multimedia platforms can support various forms of learning engagement by providing alternative ways for students to access and represent learning materials. These findings are consistent with Robin (2016) perspective that digital storytelling functions as a pedagogical approach that integrates digital literacy and curriculum content through student-centered learning activities. However, the implementation of digital storytelling is influenced by contextual factors, including technological infrastructure and students' digital competencies (Susilo & Sofiarini, 2020).

The synthesis indicates that digital storytelling in project-based history learning is implemented through several interconnected roles rather than a single function. The use of technology can generally be categorized into three main forms: (1) digital storytelling as a medium for representing historical narratives, (2) as a collaborative and reflective learning tool, and (3) as a project-based learning product that represents students' understanding. The classification is presented in table.

Table 3. Mapping of Integration Forms

Integration Form	Main Focus	Supporting References	Notes
Narrative Representation	Transforming historical texts into video scenarios	Saripudin et al. (2021); Tazkia and Safitri (2024)	Requires guidance to maintain historical accuracy while developing creative representation.
Collaboration Tool	Group discussions in constructing historical narratives	Petousi et al. (2022); Kim and Li (2021)	Implementation requires sufficient time and teacher facilitation during group activities (Lim et al., 2023).
Project Product	Digital storytelling as final evidence of student understanding	Purwoto and Kurniawan (2025); Puspitasari et al. (2025)	Assessment needs to consider both technical aspects and historical understanding.

Source: Research Data, 2026

The identified forms of integration are implemented within a structured project-based learning framework. The reviewed studies indicate that digital storytelling activities are generally conducted through sequential project stages, including problem identification, planning, source exploration, narrative development, product creation, presentation, and

reflection (Purwoto & Kurniawan, 2025). Within this approach, students are positioned as active participants who explore historical sources, interpret information, and construct digital narratives based on their understanding of historical events (Saripudin et al., 2021). Furthermore, the utilization of technological features, such as data visualization and digital mapping, provides alternative ways to represent social studies concepts that are often considered abstract (Tazkia & Safitri, 2024). However, Lim et al. (2023) highlight that technical difficulties and limited digital competencies may become challenges during implementation. Therefore, teacher guidance and instructional scaffolding remain important to ensure that students focus not only on media production but also on the accuracy and depth of historical understanding.

The synthesis further shows that digital storytelling within project-based learning functions beyond a technical medium for presenting information. It provides a learning space where students process historical information, interpret sources, and communicate their understanding through reflective and multimodal representations. Technology supports this process by facilitating opportunities for students to engage in critical and creative thinking activities (Puspitasari et al., 2025). Several studies also indicate that digital storytelling can encourage student engagement and deeper interaction with historical content (Petousi et al., 2022). Through this process, students are involved in constructing historical meaning rather than merely reproducing information, although the quality of learning experiences remains dependent on the design of learning activities and teacher facilitation.

The findings of this synthesis are consistent with previous studies emphasizing the importance of active student involvement in history learning. The shift from passive information reception toward more exploratory learning activities corresponds with the constructivist perspective highlighted by Susilo and Sofiarini (2020), which emphasizes that students construct knowledge through meaningful learning experiences. Similarly, previous studies by Rohimah and Rahmawati (2024) and Tazkia and Safitri (2024) demonstrate that digital platforms and multimedia environments can support contextual learning experiences and accommodate diverse ways of learning.

The reviewed studies also show that digital storytelling provides opportunities for students to move beyond information reproduction toward interpretation and representation of historical knowledge (Puspitasari et al., 2025; Saripudin et al., 2021). This finding is in line with Petousi et al. (2022), who explain that digital storytelling can support knowledge construction through interaction, collaboration, and reflection. Nevertheless, the integration of technology requires appropriate pedagogical support. Rahim et al. (2019) emphasize that insufficient guidance from teachers may increase students' cognitive demands when using technology-based learning activities. Therefore, the effectiveness of digital storytelling depends not only on technological availability but also on the quality of instructional design and teacher facilitation throughout the learning process.

Based on the synthesis, this study contributes by classifying the role of digital storytelling in project-based history learning into three interconnected forms: narrative representation, collaboration and reflection, and project product. This classification provides a more structured understanding of how digital storytelling is positioned within project-based learning activities. From a theoretical perspective, these findings reinforce the understanding that technology integration in history education involves the interaction between technological, pedagogical, and content dimensions. Digital storytelling is not merely positioned as an additional instructional medium, but as a learning approach that supports the construction and representation of historical knowledge. The integration of narrative, collaboration, and digital

production illustrates the multidimensional role of technology in supporting reflective, creative, and contextual history learning.

The Impact of Integrating Project-Based Learning and Digital Storytelling on Historical Understanding and Thinking Skills

A synthesis of the literature shows that the integration of project-based learning and digital storytelling generally support student' understanding of history across various aspects. According to Lim et al. (2023), the use of a project framework enables students to understand history not as a collection of facts to be memorized, but as a process of constructing meaning through the interpretation of historical sources. This is consistent with the view of Levstik and Barton (2022), who assert that the essence of history learning lies in actively engaging students in investigating questions, using historical evidence, and developing historical empathy to understand the perspectives and experiences of people in the past.

Empirical findings from Sabillah and Suprijono (2025), also indicates positive outcomes associated with the integration of project-based learning and digital technology. Their study reported a statistically significant relationship (< 0.05) between project-based learning and students' understanding of historical concepts, with a correlation coefficient of 0.476, indicating a moderate positive association. However, the authors also noted that learning outcomes were influenced by other factors, including technological infrastructure and students' digital literacy. These findings suggest that while the integration of project-based learning and digital storytelling can support students' historical understanding, its effectiveness also depends on contextual and instructional factors.

This improvement is also associated with the development of higher-order thinking skills (HOTS). In this regard, Rahim et al. (2019) emphasize that project-based activities encourage students to develop chronological reasoning, source analysis, and the evaluation of historical evidence from multiple perspectives. On the other hand, Saripudin et al. (2021) argue that students' involvement as designers of digital artifacts allows them to take in moral values and the emotional dimensions of historical events. This is supported by Purwoto and Kurniawan (2025), who found that students not only improved their historical knowledge and conceptual understanding but also develop source analysis skill, historical awareness, and the contextual use of historical language. Moreover, Puspitasari et al. (2025) reported that digital narrative media enhanced students' active participation and promoted a deeper understanding of history. Meanwhile, Syawalina and Subandi (2025) found that this integration also directly contributes to higher learning motivation and student understanding in social studies education.

The positive impact of integrating digital storytelling and project-based learning mainly comes from the shift in students' roles. Rather than simply receiving information, students are positioned as active constructors of knowledge. When they compose their own historical narratives, the learning process is no longer one-directional but involves active interpretation and reconstruction of historical evidence. Beyond the cognitive aspect, Moradi and Chen (2019) state that digital storytelling not only allows students to manage diverse sources but also supports collaboration and communication skills, especially during group work. This is consistent with Sabillah and Suprijono (2025), who found that active engagement in knowledge construction contributed to more meaningful conceptual understanding.

Digital storytelling also function as a medium that allows students to process historical information and express their understanding through personalized historical narrative (Petousi et al., 2022). As noted by Purwoto and Kurniawan (2025), students demonstrated improvements in historical knowledge, conceptual understanding, source analysis skills, and historical awareness through digital storytelling activities. Consequently, history learning shifts from a

predominantly passive process to a more constructive learning experience, in which students actively build meaning from past events. This integration therefore creates a learning experience that combines cognitive, visual, and emotional dimensions (Kim & Li, 2021). Similarly, Puspitasari et al. (2025) reported that digital storytelling increased student engagement and supported deeper historical understanding. These findings suggest that digital storytelling serves not only as a presentation medium but also as a pedagogical approach that facilitates meaningful historical learning.

The findings of this review are consistent with previous research underscoring how important the students' active role in history learning. The change from passive to exploratory learning patterns identified in this synthesis supports the constructivist perspective proposed by Susilo and Sofiarini (2020) which argues that meaningful understanding develops when students actively construct knowledge through authentic learning experiences. These results are in line with the statement of Lim et al. (2023) who suggest that project-based learning models help students view history as an interpretive process rather than only a collection of facts to be memorized. However, a deeper examination of the reviewed studies suggests that integrating digital storytelling into project-based learning offers distinct advantages for supporting students' historical meaning-making. Research by Saripudin et al. (2021) and Kim and Li (2021) shows that digital narrative media provides space for students to explore historical sources and organize them into personal representations. This distinguishes digital storytelling from more conventional instructional approaches, which often emphasize information acquisition rather than knowledge construction.

These findings also reinforce the position of research by Puspitasari et al. (2025) and Syawalin and Subandi (2025) which highlight the positive contribution of digital technology to students' cognitive development and learning motivation. However, the synthesis also indicates that these benefits do not arise automatically. Rather, they depend on the effective integration of digital storytelling within well-structured project-based learning activities. In addition, the reviewed studies suggest that students' creative expression through digital narratives should be balanced with the accurate use of historical evidence. Accordingly, teachers play an essential role in guiding students to maintain historical accuracy while encouraging creativity throughout the learning process. The synthesis of the reviewed studies strengthens the constructivist perspective in digital history education. The findings indicate that digital storytelling functions not merely as a technological medium but also as a cognitive tool that facilitates historical meaning-making. This is consistent with Woolfolk (2016), who argues that meaningful learning occurs when students actively construct understanding and develop personal interpretations based on the information they encounter. Within this perspective, digital storytelling supports students in reconstructing historical narratives in more independent, reflective, and contextual ways.

Additionally, integrating project-based learning and digital storytelling demonstrates how authentic and contextual learning can be implemented in history education. The combination of cognitive and emotional dimensions within project-based activities provides opportunities for students to develop both digital literacy and historical awareness. The reviewed studies also indicate a shift in the teacher's role, from being the primary source of knowledge to acting as a facilitator who guides students throughout the inquiry and knowledge-construction process. These findings have important implications for history educators by highlighting the need to integrate technology with inquiry-based history learning while ensuring that students' creativity is supported by accurate historical evidence.

Challenges and Opportunities in the Integration of Project-Based Learning and Digital Storytelling

The main challenges identified in the reviewed studies regarding the integration of project-based learning and digital storytelling include students' difficulties in transitioning from conventional learning patterns to independent learning and collaborative responsibility (Lim et al., 2023). At the teacher level, challenges include limited technological competence, insufficient technological infrastructure, and the persistence of traditional teaching practices within schools (Rahim et al., 2019; Susilo & Sofiarini, 2020). These findings are consistent with broader literature on educational technology integration. In this regard, Tondeur et al. (2017) argue that continuous pedagogical training and institutional support play an important role in overcoming barriers to technology integration. Furthermore, the reviewed studies indicate that technological autonomy without adequate digital and information literacy may increase students' cognitive load. This observation is consistent with Tomczyk et al. (2019), who argue that students' level of digital literacy is a determining factor in whether technology serves as a learning aid or becomes an obstacle due to insufficient skills in managing digital information.

However, despite all these challenges, the reviewed studies consistently indicate that integrating project-based learning and digital storytelling creates opportunities for more participatory and reflective history learning (Petousi et al., 2022). The flexibility of digital storytelling also enables students to engage with historical content through multiple forms of representation while supporting the development of 21st-century competencies, including creativity, collaboration, and critical thinking (Puspitasari et al., 2025). Nevertheless the effectiveness of these opportunities depends on how technology is integrated into instructional design. Rather than functioning solely as a presentation medium, digital storytelling should support students' historical inquiry, reflection, and knowledge construction. The synthesis suggests that the challenges associated with integrating project-based learning and digital storytelling extend beyond technical issues and are closely related to pedagogical readiness. Students' difficulties in managing independent learning indicate that adopting a constructivist learning model requires ongoing guidance and gradual adaptation. At the same time, digital storytelling provides opportunities for students to develop more personal and meaningful interpretations of historical events. Accordingly, successful implementation depends on teachers' ability to balance students' autonomy with appropriate instructional guidance while ensuring that historical understanding remains the primary focus of learning activities.

The findings are consistent with Lim et al. (2023) who emphasize the challenges of developing learning autonomy within project-based learning without continuous support. Similarly, the findings regarding teachers' technological competence are consistent with Rahim et al. (2019) and Susilo and Sofiarini (2020), who identify traditional teaching practices as persistent barriers to technology integration. Unlike several previous studies that primarily emphasize technical constraints, the present synthesis highlights the importance of maintaining historical depth and disciplinary content throughout digital learning activities. This interpretation is supported by Petousi et al. (2022) and Puspitasari et al. (2025), who suggest that the educational value of digital storytelling depends less on technological sophistication than on the quality of students' historical narratives and reflective learning processes.

From a theoretical perspective, these findings support the relevance of the Technological Pedagogical Content Knowledge (TPACK) framework by demonstrating that successful technology integration requires a balanced interaction between technological knowledge, pedagogical knowledge, and historical content knowledge. The findings also reinforce the importance of pedagogical scaffolding within constructivist learning, as students require

structured guidance before they can engage independently in inquiry-based historical learning. Taken together, the reviewed studies suggest that technology can effectively support history learning when it is accompanied by appropriate pedagogical design, sufficient technological readiness, and meaningful engagement with historical evidence.

Conclusion

Based on a systematic review of 14 selected studies, this study suggests that the integration of digital storytelling within project-based learning represents a promising pedagogical approach for history education. The reviewed studies indicate that digital storytelling is commonly integrated throughout project-based learning activities, including exploring historical sources, constructing historical narratives, producing digital media, and reflecting on the learning process. Rather than functioning solely as a technological medium, digital storytelling has the potential to serve as a cognitive tool that supports students in interpreting historical evidence, organizing historical narratives, and communicating their understanding in meaningful ways. The synthesis also indicates that integrating project-based learning and digital storytelling is associated with improvements in several aspects of history learning, including historical understanding, historical thinking skills, digital literacy, learning engagement, and historical empathy. Through project-based digital narratives, students are encouraged to analyze historical sources critically, examine multiple perspectives, and relate historical events to contemporary contexts.

These findings suggest that the integration of these two approaches has the potential to support more holistic history learning by addressing cognitive, affective, and twenty-first-century competencies simultaneously. Despite these positive findings, the reviewed studies also identify several implementation challenges, including students' readiness for independent and collaborative learning, teachers' pedagogical and technological competencies, limited instructional time, and unequal access to digital resources. These findings indicate that the successful implementation of project-based digital storytelling depends not only on the instructional model itself but also on thoughtful instructional design, adequate technological infrastructure, and sustained institutional support. Furthermore, because this review synthesizes evidence from only 14 studies published between 2019 and 2025, the findings should be interpreted within the scope and characteristics of the reviewed literature.

Overall, this review suggests that project-based digital storytelling has considerable potential to support more meaningful, reflective, and contextual history learning. Future studies are encouraged to examine its implementation across different educational levels and learning contexts to strengthen the existing evidence base. In addition, continuous professional development for history teachers and educational policies that facilitate the pedagogically meaningful integration of digital technology are recommended to support the sustainable implementation of this instructional approach.

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