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Integrating Digital Archives and Artificial Intelligence: A Conceptual Model for Inquiry-Based Local History Education

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ABSTRACT

This conceptual study explores the integration of Artificial Intelligence (AI) and digital archives to develop an innovative inquiry-based learning model for local history education within Indonesia's Merdeka Curriculum. Through a systematic literature review, the research examines how AI tools like ChatGPT and Google Lens can mitigate challenges in source access and analysis, thereby fostering students' critical thinking, analytical reasoning, and historical literacy. The proposed model leverages digital archives to provide contextualized primary sources, while AI acts as a cognitive scaffold to support hypothesis formulation, text interpretation, and evidence evaluation. Findings suggest that this synergistic approach can transform students from passive recipients into active historical investigators, enabling meaningful engagement with local narratives. The study contributes to discourse on pedagogical innovation, digital resource utilization, and the development of 21st-century historical competencies in post-colonial educational settings.

KEYWORDS

Artificial Intelligence; Inquiry-Based Learning; Local History; Digital Archives; History Pedagogy

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ABSTRAK

Studi konseptual ini mengeksplorasi integrasi Kecerdasan Buatan (AI) dan arsip digital untuk mengembangkan model pembelajaran berbasis penyelidikan yang inovatif untuk pendidikan sejarah lokal dalam Kurikulum Merdeka Indonesia. Melalui tinjauan pustaka sistematis, penelitian ini mengkaji bagaimana alat AI seperti ChatGPT dan Google Lens dapat mengurangi tantangan dalam akses dan analisis sumber, sehingga mendorong pemikiran kritis, penalaran analitis, dan literasi sejarah siswa. Model yang diusulkan memanfaatkan arsip digital untuk menyediakan sumber primer yang dikontekstualisasikan, sementara AI bertindak sebagai kerangka kognitif untuk mendukung perumusan hipotesis, interpretasi teks, dan evaluasi bukti. Temuan menunjukkan bahwa pendekatan sinergis ini dapat mengubah siswa dari penerima pasif menjadi peneliti sejarah aktif, memungkinkan keterlibatan yang bermakna dengan narasi lokal. Studi ini berkontribusi pada wacana tentang inovasi pedagogis, pemanfaatan sumber daya digital, dan pengembangan kompetensi sejarah abad ke-21 dalam lingkungan pendidikan pasca-kolonial.

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Introduction

The Indonesian national curriculum adopts a forward-looking orientation in response to the practical and outcome-driven demands of globalization. This orientation is reflected in the sociological foundation of the Merdeka Curriculum, which aims to address the challenges of the Fourth Industrial Revolution and Society 5.0 (Permendikbudristek No. 12 Tahun 2024, 2024). Within this framework, education is positioned as a strategic instrument for human resource development, particularly in preparing future generations to compete in a knowledge-based economy. Consequently, history education is no longer limited to the transmission of factual knowledge but is expected to equip students with an understanding of the past, an interpretation of the present, and the capacity to respond to future challenges (Cairns & Garrard, 2024 ; Dimas Anggoro & Sulisty, 2025).

The implementation of the Merdeka Curriculum provides space for pedagogical innovation aligned with contemporary educational needs. One of its primary objectives is the development of 21st-century skills, including critical and analytical thinking, collaboration, and digital literacy, which are essential in responding to global challenges and rapid technological change (Permendikbudristek No. 12 Tahun 2024, 2024). Under these circumstances, history education is encouraged to move beyond mere content mastery, focusing instead on cultivating character, historical awareness, and reflective thinking (Burgos-Videla et al., 2025) .

Inquiry Based Learning (IBL), particularly when supported by artificial intelligence (AI) and digital archives, offers significant potential for local history education (Yeh, 2025; Sam, 2024; Seprie et al., 2025; Davidson & Reid, 2022). This approach enables students to actively engage with historical problems while developing technological competencies relevant to contemporary society. Local history plays a strategic role in helping students understand historical dynamics within their immediate environment, as local events often contribute to broader national narratives (Priyadi, 2014). However, inquiry-based local history learning faces challenges related to limited access to sources, time constraints, and students' lack of experience in conducting historical inquiry. In response, this study conceptualizes an inquiry-based learning model supported by AI and digital archives to enhance student engagement and higher-order thinking skills (Ioanid & Andrei, 2025).

IBL emphasizes student-centered learning through questioning, investigation, and independent research (Öztürk et al., 2022). This model prioritizes the development of higher-order thinking skills essential in both academic contexts and everyday life (Kang, 2022). In history education, inquiry-based learning enables students to critically analyze historical events using diverse sources, fostering deeper historical understanding and analytical reasoning.

This research proposes an innovative approach through the integration of AI-based tools in history learning. Technologies such as Google Lens enable students to scan archival documents, while ChatGPT supports the interpretation, translation, and explanation of historical texts to assist hypothesis formulation and testing. By reducing technical barriers in accessing and processing historical sources, AI allows students to focus on analytical inquiry rather than procedural difficulties. This model aims to optimize students' understanding of local history while strengthening their analytical and interpretative skills through the effective use of digital resources.

Recent research highlights the integration of digital technologies in supporting inquiry

based learning (IBL) processes, including guiding inquiry, accessing content, data collection, organizing information, and providing feedback, which align with the use of digital archives and AI tools to facilitate student engagement with primary sources in history education (Hinostroza et al., 2024). Similarly, studies emphasize the role of primary sources in online history learning to enhance engagement and retention, demonstrating how digital access to historical materials can deepen analytical skills without relying solely on teacher-provided printed resources (Fahrudin & Saefudin, 2025).

Other work explores the use of AI in creating adaptive pathways for inquiry-based activities and its application in history classrooms to support student-driven investigations, such as analyzing historical practices like redlining through generative tools, shifting from traditional field-based or printed models to more efficient, technology-mediated engagement (Nocera et al., 2024); Penn & Ramnarain, 2025). These approaches extend prior contributions by leveraging AI to maximize outcomes in diverse contexts, including adaptable models for local history across regions, while addressing logistical barriers like time and access in conventional methods (Issayev & Apendiyev, 2025).

A broader review of related studies indicates a shift from conventional inquiry models toward digitally supported inquiry-based learning. AI has emerged as a key driver of educational transformation by offering innovative solutions to contemporary instructional challenges (Oseremi Onesi-Ozigagun et al., 2024). International research further demonstrates AI's growing role in history education. Sheng (2023) identifies emerging trends in the use of AI in secondary history classrooms in China that suggest changes in how students engage with historical knowledge.

Similarly, Obidovna, (2024) highlights the potential of AI-based chatbots such as ChatGPT in supporting historical training and research. Despite access restrictions in certain countries, alternative platforms using the ChatGPT API allow continued utilization of AI for historical inquiry, underscoring AI's expanding relevance in history education.

Transforming students from passive recipients of historical narratives into active history researchers remains a central challenge. Historical interpretations must be grounded in reliable sources rather than assumptions or personal impressions (Heller, 2023). Conventional textbooks often present generalized narratives that overlook local historical potential, while access to primary sources remains limited.

Primary sources such as archives and artifacts can significantly enhance students' analytical and critical thinking skills, yet access barriers often restrict their use. AI offers a practical solution by simplifying data analysis and supporting historical reconstruction (Cordeiro et al., 2025). However, AI should function as a complementary tool rather than replacing teacher-student interaction (Seo et al., 2025). Its integration must align with adaptive learning models that can be effectively implemented in real-time classroom settings (Oseremi Onesi-Ozigagun et al., 2024).

Drawing on the issues discussed above, this study seeks to examine the current research landscape on inquiry-based learning, emphasizing how its implementation contributes to new perspectives in the development of inquiry-based approaches, including innovative practices, more effective instructional strategies, and the use of AI and digital archives in local history learning.

Method

This study employs a qualitative approach with a literature review design (library research). This approach is selected to obtain an in-depth understanding of the concepts, practices, and research trends related to the implementation of inquiry-based learning models that are supported by artificial intelligence (AI) and the utilization of digital archives in local history education. The research design is conceptual-analytical, aiming to conceptualize an AI-based inquiry learning model that aligns with the principles of the Merdeka Curriculum and the characteristics of history teaching in the Indonesian educational setting. A literature-based design enables a systematic examination of theoretical perspectives, empirical findings, and instructional practices developed in previous studies.

Data collection was conducted through a comprehensive review of secondary sources, including reputable national and international journal articles, academic books, and relevant educational policy documents. The literature reviewed encompasses studies on inquiry-based learning, AI in education, history education, local history, and the use of digital archives as instructional resources. The data collection process followed the stages of library research proposed by Zed, (2008), beginning with the formulation of a general research idea, followed by the identification, selection, and organization of relevant literature, and culminating in a focused examination of studies addressing the integration of inquiry-based learning models that are supported by AI and digital archives in local history education within the Indonesian educational setting.

Data validity was ensured through rigorous source selection and literature triangulation. Priority was given to sources published in reputable academic journals, established scholarly publishers, and official government documents. Furthermore, cross-source comparisons were conducted to assess the consistency of key concepts, the convergence of research findings, and the relevance of the studies to the educational setting under investigation. Conceptual source criticism was also applied by examining the theoretical foundations, methodological approaches, and implementation contexts of each publication, ensuring that the synthesized arguments are academically sound and methodologically credible.

Data analysis was carried out using content analysis and thematic analysis techniques. Each selected source was systematically analyzed to identify key concepts related to inquiry-based learning, the role of AI in history education, and the potential opportunities and challenges associated with the use of digital archives. The identified findings were then synthesized to reveal recurring patterns, dominant research trends, and existing research gaps. The results of this analysis served as the basis for conceptualizing the instructional syntax and the overall framework of inquiry-based learning models that are supported by AI for local history education relevant to the Indonesian educational setting.

Results and Discussions

Application of the Inquiry Based Learning Model

Inquiry Based learning (IBL) is grounded in the philosophy of pragmatism which emphasizes active student engagement through research and exploration. This approach encourages students to ask questions, critique, think creatively, solve problems, and develop scientific skills through hands on experiences (Sam, 2024; Arifin et al., 2025). IBL also aims to cultivate higher order thinking skills such as decision making, evaluation, and analysis which are applicable in real world contexts. This learning model prioritizes students' personal experiences in acquiring scientific knowledge through hypotheses, experimentation, and reflection (Öztürk et al., 2022).

IBL has been recognized as an instructional approach that not only enhances students' interest in learning and academic achievement but also offers them the opportunity to understand how scientific knowledge is generated and developed through the authentic work of scientists (Muhamad Dah et al., 2024). Through IBL, students gain higher order cognitive skills such as problem solving, analysis, prediction, generalization, and creativity, resulting in strong science literacy and a comprehensive understanding of the processes and outcomes of scientific inquiry itself (Kang, 2022).

Students engaged in IBL are expected to identify cause and effect relationships and formulate hypotheses that can be tested through experiments or observations mirroring the practices of scientists. This method not only fosters scientific thinking but also nurtures other essential skills such as problem solving, collaboration, and research abilities which are highly relevant to contemporary educational challenges (Hinostroza et al., 2024). In practice, students apply two types of reasoning: inductive (from facts to theory) and deductive (from theory to facts) to investigate the relationships between variables. Therefore, the application of this model provides students with the opportunity to test and substantiate their hypotheses through data collection and direct experience (Pedaste et al., 2015).

To achieve optimal outcomes, the implementation of Inquiry Based learning must focus on student centered learning activities with the teacher assuming the role of a facilitator who encourages students to take greater responsibility for their learning process. Students should be afforded the autonomy to manage both what they learn and how they learn it. The objective is to integrate inquiry into daily learning making it a continuous part of the educational process rather than a sporadic activity. In this context, teachers grant students more freedom to make decisions in problem solving, exploration, and the organization and identification of patterns in information (M. W. Aulls & Shore, 2007).

Chinn & Duncan (2021 in de Jong et al., 2023) identify six core components that define Inquiry Based learning. The first component is that students generate new knowledge for themselves through investigation. Second, in an inquiry setting students must engage actively to acquire this new knowledge meaning they do not rely solely on preexisting materials but engage in activities that lead to the generation of novel insights. Third, students must use evidence to draw conclusions. This evidence can be sourced from a variety of materials such as news articles or scientific reports. Fourth, students must take responsibility for their own learning process and share their insights with the learning group. Fifth, complex issues are always present in reasoning requiring students to

consider multiple sources of evidence and continually contemplate alternative explanations for their findings. Sixth, thorough inquiry invariably involves collaborative learning groups meaning students share knowledge with peers and must accept critical questioning from others.

Khalaf & Zin (2018) highlight several challenges that need to be addressed in the implementation of IBL. One of the primary challenges is the lack of student motivation. High levels of motivation are crucial to increase students' engagement in the learning process. In addition, practical constraints such as limited resources and rigid scheduling commonly found in schools can hinder the effective application of IBL. Furthermore, the lack of foundational knowledge among students regarding Inquiry Based learning including their ability to formulate research questions, collect and evaluate data, and document findings, presents a significant obstacle (Yuliarti et al., 2023). Lastly, IBL requires students to manage open discussions, actively participate, and provide evidence and evaluations, all of which necessitate more complex process management skills compared to traditional learning methods.

The Use of AI in Education

AI is a technology designed to build systems that can think and act like humans with the ability to achieve specific goals. The two main components of AI most connected to education are algorithms and machine learning (Chiu et al., 2023). An algorithm is a series of instructions that enables computers to solve problems and perform tasks typically carried out by humans such as speech recognition, decision making, and facial recognition (Wang et al., 2024). On the other hand, machine learning is a system that utilizes big data to build models that can predict outcomes and perform tasks without human intervention (Akgun & Greenhow, 2022).

In this era of Industry 4.0, nearly every human activity is inseparable from the use of Information Technology (IT). For modern society, IT has become a fundamental necessity. Thanks to advancements in technology the benefits of IT can be felt in every aspect of human life including education. Nowadays, the active student generation is made up of millennials and Gen Z who are already tech savvy. Therefore, technology must be integrated into the curriculum (Kutsyuruba et al., 2025). In response to this, teachers' duties are not only to educate but also to upgrade their skills including enriching their knowledge of artificial intelligence (AI) to meet the challenges of teaching a tech savvy generation. In addition to teaching fundamental skills such as reading, writing, arithmetic, and digital literacy, educators must equip students with an understanding of AI for 21st-century technology literacy because in the future students will not only be users of this technology but also problem solvers using AI (Ng et al., 2021).

The application of AI in education brings various changes such as increased efficiency in the learning process. One example of an AI tool that is frequently used is ChatGPT, an AI-powered chatbot designed to generate sophisticated text and interact with users naturally. ChatGPT can answer various questions. This chatbot works by responding to different topics found within a dataset it has been trained on (Chellappa & Luximon, 2024).

As time passes and interaction with users continues ChatGPT's capabilities keep improving. ChatGPT is designed to interact with users in a conversational format, involving a series of questions and answers (Pütz & Esposito, 2024). This approach offers a more

interactive learning experience where users can continuously ask additional questions and explore further information. This distinguishes ChatGPT from traditional search engines which only display lists of links based on entered keywords. Instead, ChatGPT provides contextual explanations and connects ongoing dialogue to more detailed and relevant answers (Rospigliosi, 2023).

ChatGPT has the potential to change how the public receives information. Unlike traditional search engines like Google which rely on algorithms to match keywords with search results, ChatGPT can communicate with users and generate easily understandable text in a human like style. Remarkably, this tool can track previous interactions with users and use that information to make conversations feel more natural. However, there are concerns regarding its use such as the tendency for the answers it generates to be biased and inconsistent. This can occur because ChatGPT processes data from all over the world, so the answers may not align with users' expectations, and responses may vary when the same question is asked in two different countries. This happens because the answers are more influenced by the language used than the user's location (García-Porta et al., 2024).

Just like ChatGPT which utilizes its ability to interact and generate text based answers, Google Lens also leverages advanced AI technology to assist users in obtaining information. Google Lens is a mobile software that helps users search for and recognize objects using image recognition technology based on neural networks developed by Google. This smart tool can be used in various educational fields such as biology, mineralogy, architecture, and history (Shapovalov et al., 2019).

In its use, Google Lens can copy text from physical sources such as books, whiteboards, and banners into the phone's clipboard as well as to desktop or laptop systems. It can also convert selected text into speech and extract text embedded in photos. This technology can translate foreign languages, facilitating access to multilingual historical documents and primary sources in educational settings (Christou et al., 2025). To optimize the app's functionality, users need to consider the quality of the photo being detected as the quality of the photo directly affects the analysis results provided by Google Lens. The higher the photo quality, the better the analysis results. High resolution and well composed photos offer a higher chance of accurate identification by Google Lens (Shapovalov et al., 2019).

Local History Learning in the Merdeka Curriculum

The implementation of the Merdeka Curriculum is the government's effort to change the education paradigm in Indonesia to prepare the nation for the challenges of the 21st century. The importance of 21st-century skills such as critical thinking, creativity, collaboration, and digital literacy, forms the social foundation designed to prepare students to face the challenges of the 4.0 industrial revolution and society 5.0 (Permendikbudristek No. 12 Tahun 2024, 2024). Moreover, this curriculum emphasizes meaningful learning which focuses not only on academic achievement but also on character development based on Pancasila in every learning activity.

Learning can be understood as the result of interactive teaching and learning processes facilitated by effective communication and feedback (Dai et al., 2025). The learning process is a communication process that occurs through interactions between teachers

and students, involving the delivery and construction of knowledge, skills, progress, and expectations. This information is typically packaged and clarified through relational feedback or educational content to support student development.

The subject of history in the Merdeka Curriculum taught in senior high school (Grade X or Phase E) is aligned with other social sciences in the Social Science (IPS) subject cluster and is taught in parallel with other social science subjects such as Sociology, Economics, and Geography. In Phase F or Grade XI and XII, history is part of the general subject group while Advanced History is included in the elective subject group (Permendikbudristek No. 12 Tahun 2024, 2024). The material taught in schools is general covering the scope of Indonesian National History (SNI). The writing of SNI itself begins with the writing of local history as its foundational element (Priyadi, 2014).

Local history according to (van Eeden (2024), refers to the study of histories of peoples and places, often focusing on past events and experiences of communities or groups within specific geographical regions or localities. It is highly dependent on a particular spatial scale or location, the boundaries of which are often defined retrospectively or contextually by the researcher/author to provide structure and clarity. This can encompass settlements of ethnic or cultural groups, or extend across small to medium administrative units such as districts, sub-regions, villages, or neighborhoods, while allowing for trans-local or trans-regional connections. SNI as a macro unit covers historical knowledge discussing complex issues with themes or topics placed in a specific time setting. According to Kartodirdjo (2014), the relationship between local history and national history is based on similar patterns and structures in both, as parts of micro and macro units in history. This similarity in patterns and structures shows that even though there are differences in space and time both are interconnected and complementary (Priyadi, 2014).

Although there is a strong connection, local history and SNI differ in terms of temporal and spatial aspects. This is because each region has its own historical period whereas SNI covers a broader area namely the entire archipelago which is very different from the more limited scope of local history (Priyadi, 2014). In principle, every event in SNI is a local event and by integrating local history into SNI, teachers can fill the gaps in the SNI framework used as teaching materials. Therefore, the implementation of local history learning within the Merdeka Curriculum can help students understand the historical roots of their region which has shaped their regional identity today. Through this method, teachers can explain the connection between local events and important national events allowing students to see the cause and effect relationships that form the journey of Indonesia as a nation.

Using Digital Archives to Develop History Teaching Materials

Archives are collections of documents or materials stored systematically whether related to history or current events. The purpose is for academic, scientific, heritage, and legacy purposes. Archives have existed for thousands of years, long before the advent of digital documents. However, modern archives now often include digital components. In general, the purpose of archives is to collect human information that can be viewed and used in the future (Jo & Gebru, 2020).

In the mid-20th century along with advances in computing and the emergence of the internet in the 1990s, digital archives began to develop rapidly. In the late 1990s to early 2000s, the digitization of archival collections and the development of search guides

accelerated access to archives by the public. As a result, archives that were previously limited by physical space can now be accessed online allowing everyone to obtain information, conduct research, and explore historical knowledge without the constraints of time and space (Peace & Allen, 2019)

The use of digital archives provides several advantages in utilizing historical sources. One advantage is the ease of accessing physical archives that were previously difficult to reach either due to physical constraints or geographical distance. Digital assets allow users to view and study documents, images, or recordings without having to visit the archive center, gallery, or museum in person. Additionally, the ease of creating and distributing digital assets quickly and without cost makes this tool efficient for disseminating knowledge, thus encouraging public participation in managing and utilizing data through open access initiatives. Another benefit is the ability to reprocess and repurpose data leading to the creation of new knowledge and innovations. Thus, digital archives not only function as a tool for preservation but also as a resource that can be further developed for various creative and educational purposes (Tzouganatou, 2022).

Digital archiving offers easy access for everyone involved in efforts to preserve collective memory. However, the abundance of data in digital archives often causes confusion among users. Meanwhile, the use of digital archives is actually beneficial for small communities, minority groups, and non state actors to document their often overlooked history. However, with the increasing volume and complexity of data, new challenges arise. Over time as more archives are collected, users find it more difficult to filter and interpret the information clearly and systematically. Ironically, in efforts to disseminate information contained in archives, users face the reality that the sheer volume of data makes it increasingly difficult to gain a complete understanding, creating a paradox where the abundance of information goes hand in hand with an inability to master and narrate history synchronously (Bareikytė & Skop, 2022).

Historians also need to develop an understanding of how digital media systems function. Historical sources as data framing are significant for historians because they help align historical studies with contemporary theory and practice where data becomes the primary focus, not secondary. The use of historical sources in digital archives needs careful attention. Just as a historian studies 18th century documents, they must learn to read various types of handwritten scripts to develop the ability to read and interpret these texts (Owens & Padilla, 2021).

The digitization of historical sources has opened new opportunities for accessibility and understanding of history making it more easily accessible to students and the public. Digitized primary sources not only simplify the process of searching for information but also encourage student interest in learning history. This process involves not only reading texts but also provides opportunities for direct engagement with original documents or their transcripts offering a meaningful learning experience. Students are encouraged to interact with more authentic and direct sources, even though language difficulties may be a barrier. This demonstrates that digitization paves the way for students to develop critical thinking skills which are essential in history learning (Widiadi et al., 2022).

Transforming Local History Learning

The Inquiry Based Learning (IBL) model can be made more effective in local history teaching through the use of digital archives and AI technology. IBL emphasizes the development of critical and creative thinking skills through active student engagement in the investigation and exploration process (Öztürk et al., 2022; Kang, 2022; Hinostroza et al., 2024; M. W. , Aulls & Shore, 2007). In local history teaching, this method can help students find meaningful learning by analyzing historical documents relevant to the material they are studying. Through this process, students not only access historical facts but also explore how local events are connected to national history.

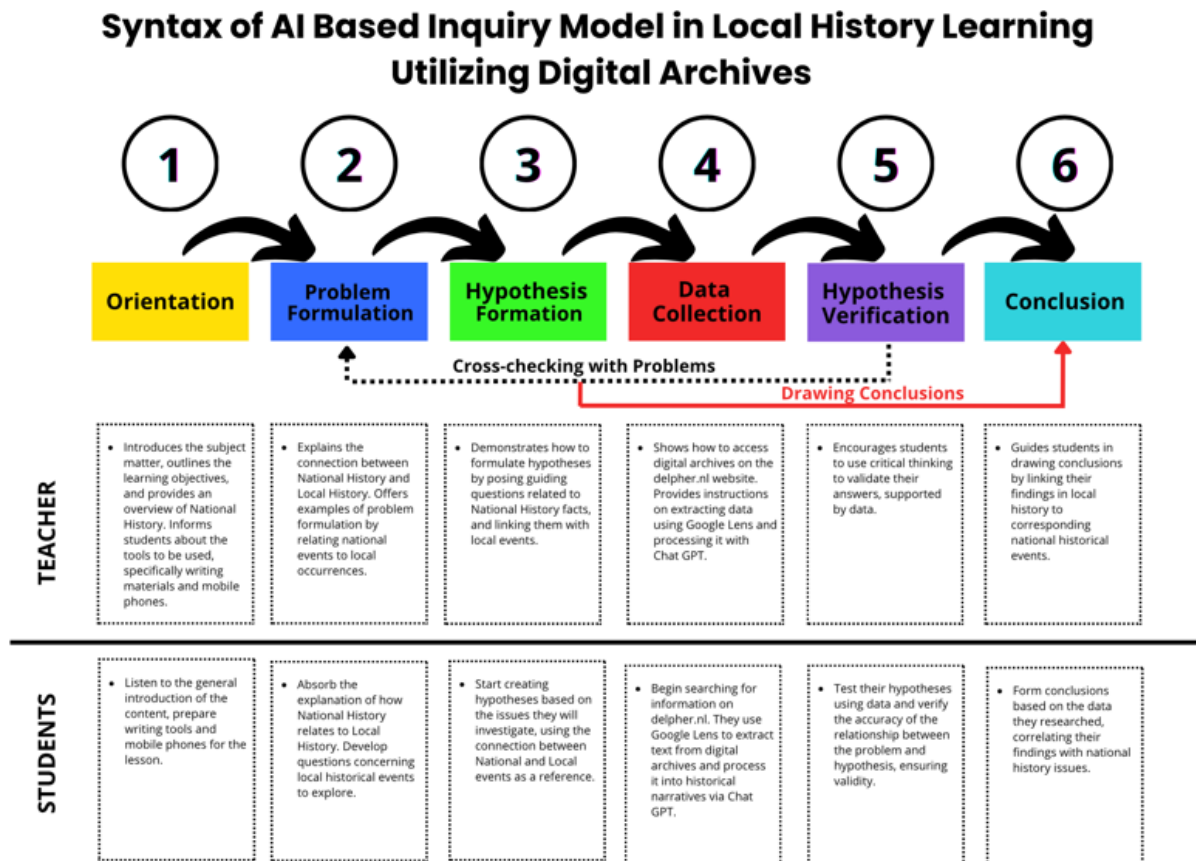


Figure 1. Syntax of AI Based Inquiry Model in Local History Learning Utilizing Digital Archives

The image above explains the syntax of the AI based inquiry model in local history learning by utilizing digital archives. In the orientation stage, the teacher plays a role in providing an overview of the material to be learned and the learning objectives to be achieved. The teacher explains the importance of understanding national history and how it relates to local events occurring around the students. Meanwhile, students listen to the explanation and prepare the necessary tools such as writing materials and electronic devices to support their learning process. This stage serves as an essential starting point for students to have a basic understanding before moving on to the next stage.

In the formulating problems stage, the teacher explains how national history can be connected to local events through relevant examples. The teacher teaches students how to identify historical events that can be researched in greater depth within local events.

Students then formulate questions or problems they will investigate based on their understanding with limitations of space, time, and perspective. This stage is crucial for developing students' critical thinking skills so that they do not just memorize history but can relate significant facts to smaller, localized events. This process provides students with the opportunity to explore topics that they had not encountered in national history.

In the Hypothesis stage, the teacher demonstrates how to make hypotheses based on the data and questions already posed. The teacher provides examples of how to formulate hypotheses related to national and local events by considering various factors that influenced those events. Students, with the teacher's guidance begin to develop their own hypotheses that will be tested for validity in their research. They are taught to think analytically by connecting national historical events with the local events they are studying. This step encourages students to think creatively and develop deeper insights before moving on to the next stage.

During the information collection stage, the teacher guides students in searching for and accessing relevant data sources such as digital archives on delpher.nl and teaches how to use technology like Google Lens to extract information from historical texts. The teacher also introduces the use of ChatGPT to assist in processing data and turning it into more understandable historical narratives. On the other hand, students are actively involved in gathering information from various digital sources and organizing the collected data to develop a more comprehensive understanding of the topic they are researching. This stage introduces students to essential research skills in history learning.

In the Hypothesis Testing stage, the teacher provides students with the opportunity to test the validity of the hypotheses they have formulated using the data they have collected. The teacher facilitates discussions on how to compare the found data with the previously proposed hypotheses. Students are then assessed on their ability to verify the relationship between the data found and the hypothesis they formulated, determining whether it aligns with what was predicted and is consistent with the problem formulation defined at the beginning. They learn how to critique their findings and verify whether the data supports or contradicts the hypothesis they developed. This process helps students sharpen their critical and analytical thinking skills.

Finally in the Conclusion stage, the teacher provides guidance for students to summarize their findings and relate them to broader historical events, both in local and national contexts. The teacher facilitates a class discussion on what can be learned from the research conducted and how the conclusions drawn can strengthen their understanding of history. Students then compile their conclusions based on their findings by interpreting the results of their research. With the teacher's guidance, students can explore the meaning and impact of the local history they studied and connect it to the broader narrative of national history.

In local history learning, digital archives provide access to historical sources that were previously difficult for students to access. Unlike physical archives that are hard to reach due to geographical distance, digital archives can be accessed by students anywhere (Tzouganatou, 2022). They can access historical documents stored in various places around the world. This opens up opportunities for students to explore various historical sources such as old newspapers, historical photos, audio recordings, and reports documenting important events that occurred in their region, such as those available on the

website <https://www.delpher.nl> which has digitized many documents related to Indonesia's history.

AI technology helps support and ease the learning process by providing students with tools to work with digital documents efficiently. AI based translation tools such as Google Translate can help students translate texts written in foreign languages. Thus, historical documents from all over the world including those containing information about local events can be understood without language barriers. Furthermore, tools like Google Lens assist students in copying text from digital archives and converting it into a digital format that can be further analyzed to ease their research process (Jeong et al., 2025).

ChatGPT is another example of AI applications that can be used in local history learning. With its ability to understand narratives and provide explanations for complex historical texts, ChatGPT can be a highly useful digital assistant for students (Rospigliosi, 2023; García-Porta et al., 2024). For example, after finding documents in digital archives, students can use ChatGPT to explain unfamiliar terms or concepts and delve deeper into specific historical events recorded in those documents. Through this tool, students will have a better understanding of what they read and engage in further discussions on the relevance of those documents to local historical events.

In the Inquiry Based learning model, students are encouraged to formulate research questions that will guide their exploration (Pedaste et al., 2015; de Jong et al., 2023). By using digital archives and AI based tools, students can gather evidence supporting their hypotheses. Through this process, they are trained to think critically, evaluate existing sources, and develop deep analytical skills. For instance, students begin by asking questions about local events in Indonesian history. They then search for related documents, analyze the content of those documents, and draw conclusions based on the available evidence. This process helps students understand historical facts and connect local history with national history (Kartodirdjo, 2014; Priyadi, 2014).

AI and digital archives will continue to shape local history teaching by providing students with essential tools to study historical materials and develop the skills necessary for the 21st century. By incorporating these technologies into the curriculum, we can foster an innovative, dynamic, and meaningful learning experience for students, allowing them to better understand their local history and its relationship with the broader context of Indonesian national history.

Conclusion

This article reveals the prospects of applying an inquiry based learning model utilizing artificial intelligence (AI) in local history learning which has the potential to revolutionize the way students learn. The Merdeka Curriculum in Indonesia focuses on the development of 21st century skills and equips students to face global challenges and the fourth industrial revolution. In line with this vision, history education aims not only to teach facts but also to prepare students for the future through understanding history, developing critical thinking skills, and leveraging technology. The AI based inquiry learning model which utilizes digital archives is proposed to enhance students' active learning and higher order thinking skills in local history education.

Inquiry based learning (IBL) emphasizes active student learning through exploration and research. Referring to the philosophy of pragmatism, IBL encourages students to ask

questions, solve problems, and develop scientific skills. This approach aims to improve higher order thinking skills such as evaluation, analysis, and decision-making. IBL also emphasizes hands on experience through hypotheses and experiments using inductive and deductive approaches to explore relationships between variables. Teachers play a role as facilitators, guiding students in a more independent learning process.

AI with its key components of algorithms and machine learning is rapidly advancing in the field of education. The millennial and Gen-Z generations who are tech savvy require education that includes digital literacy and an understanding of AI. AI based tools such as ChatGPT enhance the efficiency of the learning process by providing in depth conversational interactions. Despite its benefits, AI tools like ChatGPT also raise concerns regarding bias and answer consistency. Additionally, tools like Google Lens help obtain visual information for various disciplines supporting more interactive and relevant learning.

The digitization of archives provides easy access to historical documents that were previously limited by distance and physical constraints. Digital archives accelerate the process of information retrieval and enable the reuse of data to develop new knowledge. The use of digital archives in history education helps students interact with authentic sources improving critical thinking skills. However, the abundance of data may make it challenging for users to filter relevant information. On the other hand, digitization offers an opportunity for minority groups to document their often overlooked histories.

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