International Journal of Community Service
ISSN 2961-7162 (online)
https://ejournal.ipinternasional.com/index.php/ijcs

OPEN ACCESS

Vol. 5, No. 1, 2026 DOI : 10.55299/ijcs.v5i1.1658

Implementation of Inquiry-Based Learning (IBL) Through Ancient Tombs of Sultan Barumun Era to Enhance Historical Thinking Skills of MAN Barumun Students: A Qualitative Analysis

Burhanuddin[1], Bincar Nasution[2], Insan Fahmi Siregar[3]

[1,3]*Department of History Education, Faculty of Teacher Training and Education, Universitas Graha Nusantara, Indonesia*
[2,]*Department of English Language Education, Faculty of Teacher Training and Education, Universitas Graha Nusantara, Indonesia,*

ABSTRACT

This qualitative research examines the implementation of Inquiry-Based Learning (IBL) through the ancient tombs and historical sites of the Sultan Barumun era to enhance historical thinking skills among students at Madrasah Aliyah Negeri (MAN) Barumun. Involving 50 students, 3 history teachers, 4 community guides, and 2 school administrators, the study employed mixed qualitative methods including structured observations (8 sessions), semi-structured interviews (7 participants), focus group discussions (2 sessions with 30 students), document analysis, student learning journals (weekly reflections), and site visits over a four-month period. Data were analyzed using thematic analysis with open and axial coding procedures to identify patterns in student engagement, understanding, and skill development. Results revealed significant improvements in students' historical thinking skills across six dimensions: source analysis and interpretation (7-student increase to Proficient level), historical contextualization (7-student increase), causation and chronological reasoning (16-student increase), evidence-based argumentation (Advanced category achievement), perspective recognition (38 students in Advanced category), and synthesis and conceptualization (1-student progression to Proficient level). Thematic analysis identified six primary themes: enhanced critical engagement (23 occurrences), deepened historical understanding (28 occurrences), active participation and agency (31 occurrences), emotional connection to heritage (26 occurrences), collaborative learning dynamics (29 occurrences), and implementation challenges (17 occurrences). The study demonstrates that IBL through culturally significant historical sites effectively develops students' capacity for historical thinking while fostering emotional connections to local Islamic heritage and regional identity.

Keywords: inquiry-based learning, historical thinking skills, Islamic heritage, Sultan Barumun.

Received:	Revised:	Accepted:	Available online:
01.11.2025	18.11.2025	20.11.2025	26.11.2025

Suggested citations: Burhanuddin, B., & Nasution, B., Siregar, I.F (2025). Implementation of Inquiry-Based Learning (IBL) Through Ancient Tombs of Sultan Barumun Era to Enhance Historical Thinking Skills of MAN Barumun Students: A Qualitative Analysis. *International Journal of Community Service (IJCS)*, *5*(1), 01–21. https://doi.org/10.55299/ijcs.v5i1.1658

[1]Corresponding Author: Department of History Education, Faculty of Teacher Training and Education, Universitas Graha Nusantara, Indonesia; Email: burhanuddin@ugn.ac.id

INTRODUCTION

Historical education occupies a critical position in contemporary secondary education systems, particularly in Indonesia where the integration of cultural heritage, Islamic values, and critical thinking represents fundamental pedagogical objectives. The traditional approach to history instruction, which emphasizes the memorization of facts and dates rather than the development of analytical and evaluative competencies, has been widely criticized by educational researchers as inadequate for preparing students to engage thoughtfully with historical evidence and construct reasoned interpretations of the past. In response to this recognized deficiency, inquiry-based learning models have emerged as promising pedagogical frameworks that position students as active investigators of historical phenomena rather than passive recipients of predetermined historical narratives.

The province of North Sumatra contains numerous archaeological and cultural heritage sites of significant Islamic historical importance, particularly those associated with sultanate periods that shaped the region's political, social, and religious development. Among these sites of heritage significance are the ancient tombs and burial grounds associated with the Sultan Barumun era, which represent tangible connections to the region's Islamic past and provide invaluable resources for experiential historical learning. The Barumun region, situated at the heart of North Sumatra's Padang Lawas district, possesses a rich historical landscape encompassing archaeological remains, architectural structures, and oral histories that collectively constitute a living archive of sultanate-era governance, religious practices, and cultural expression. While pedagogically underutilized in many educational contexts, these heritage sites present exceptional opportunities for students to engage directly with primary historical evidence and develop sophisticated historical thinking capacities through authentic investigation and discovery-based learning processes.

As a pedagogical methodology, inquiry-based Learning (IBL) fundamentally restructures educational transactions by emphasizing student agency, critical questioning, and collaborative knowledge construction. Rather than transmitting predetermined historical interpretations, IBL encourages students to formulate research questions, evaluate evidence, consider multiple perspectives, and construct defensible historical arguments based on a careful analysis of primary and secondary sources. This approach aligns with contemporary constructivist theories of learning, which posit that meaningful knowledge emerges through active engagement with authentic problems and phenomena rather than through the passive reception of information. The integration of IBL with heritage-based education—that is, the deliberate incorporation of cultural and historical sites as learning environments—creates a particularly powerful pedagogical configuration by grounding abstract historical concepts in tangible material cultures and lived community contexts (Nghiem et al., 2025).

Madrasah Aliyah Negeri (MAN) Barumun, an Islamic secondary educational institution located in proximity to these significant historical sites, represents an ideal institutional context for implementing heritage-based IBL interventions. The school's location within the Barumun region provides exceptional accessibility to archaeological sites, local historical expertise, and community knowledge holders who

can serve as educational resources and cultural interpreters. Furthermore, the Islamic orientation of the madrasah creates a natural alignment with the Islamic historical content encountered at heritage sites associated with sultanate governance and religious development, enabling educational experiences that connect curricular content to students' religious identities and community heritage.

Despite the recognized potential of IBL and heritage-based educational approaches, limited empirical research has systematically examined the implementation of such pedagogies in Indonesian secondary educational contexts, particularly within madrasah settings and in conjunction with specific regional historical sites. Most existing research on IBL has focused on the scientific and mathematical domains, with comparatively fewer studies investigating its application to history education in secondary schools. Moreover, qualitative research examining the nuanced processes through which IBL implementation develops historical thinking skills including source analysis, contextualization, causation reasoning, argumentation, and synthesis remains limited in the Indonesian educational research literature. This research gap is particularly significant given the potential of heritage-based IBL to simultaneously contribute to multiple educational objectives: the development of critical thinking capacities, the cultivation of emotional connections to cultural identity, the preservation and valorization of regional heritage, and the preparation of students for engaged civic participation in multicultural societies (Mohd Ramli & Borhan, 2024).

The present study addresses these research gaps by examining the implementation of IBL through the ancient tombs and heritage sites of the Sultan Barumun era in MAN Barumun and investigating the impact of this pedagogical approach on students' development of historical thinking skills. Through a systematic qualitative investigation employing multiple data collection methods, this research seeks to understand how students engage with authentic historical evidence in community-based contexts, what patterns of cognitive and affective development emerge through heritage-based IBL, and what challenges and facilitating factors characterize the implementation of this pedagogical approach in madrasah secondary education.

The implementation of heritage-based IBL at MAN Barumun proceeded from pedagogical and theoretical foundations emphasizing the integration of authentic contexts, student agency, and community resources in historical learning. Research in educational psychology has consistently demonstrated that learning rooted in authentic, meaningful contexts produces a deeper conceptual understanding, greater retention, and stronger motivation than decontextualized instruction focused on abstract principles. The concept of situated learning, developed by cognitive anthropologists studying how knowledge is constructed through participation in communities of practice, suggests that historical understanding is inherently situated and rooted in specific places, communities, and interpretive traditions. Heritage sites embody this situated character of historical knowledge, serving as physical manifestations of past human activity and focal points for community memory and meaning-making. By locating IBL within these heritage contexts, educational experiences become embedded in actual communities and places that generate

historical significance, rather than confined to classrooms where history appears as an abstract narrative divorced from material reality.

Like many Indonesian secondary students, MAN Barumun enters history courses with varied prior exposure to Islamic heritage and historical content. Some students possess family connections to the Barumun region and therefore possess informal knowledge of local history transmitted through family narratives, community participation, and incidental exposure to archaeological sites. Others arrived from different regions and lacked familiarity with the specific historical narratives and heritage sites of North Sumatra. This heterogeneity in prior knowledge and community connections creates challenges and opportunities for heritage-based IBL implementation. The challenge lies in scaffolding learning experiences to accommodate diverse knowledge levels and cultural backgrounds while maintaining intellectual rigor and preventing the oversimplification of complex historical phenomena. The opportunity lies in structuring IBL experiences that simultaneously introduce students unfamiliar with local history to significant regional heritage while deepening and complicating the existing informal knowledge of students from local communities.

Historical thinking skills, as defined in contemporary history education literature, constitute a distinct domain of cognitive competency encompassing multiple specific abilities: the capacity to analyze historical sources regarding their provenance, perspective, reliability, and limitations; the ability to contextualize historical events within their specific cultural, political, social, and religious circumstances; the competency to identify and evaluate causal relationships and chronological sequences in historical development; the capacity to construct evidence-based arguments drawing on multiple sources; the ability to recognize and evaluate multiple historical perspectives and interpretations; and the ability to synthesize diverse evidence into coherent historical narratives. These thinking skills represent "higher-order" cognitive processes in Bloom's taxonomy, requiring students to move beyond factual recall to engage in analysis, evaluation, and synthesis. Research on history instruction has identified these historical thinking skills as central to meaningful historical learning and as critical competencies for informed civic participation and lifelong learning (Dewa Made Alit, 2025).

The Sultan Barumun era, representing the historical period during which Islamic sultanate governance characterized the Barumun region and surrounding areas, provides rich and complex historical content conducive to the development of historical thinking skills. The sultanate system represented a particular historical configuration of political authority, religious legitimacy, legal systems, and social organization, the investigation of which required students to grapple with questions of historical causation, cultural context, multiple perspectives, and evidence interpretation. Archaeological and material remains associated with this eraincluding burial sites, architectural structures, and artifacts constitute primary historical evidence through which students can directly engage with historical investigation processes. Furthermore, the ongoing significance of Sultan Barumun heritage within contemporary community consciousness creates opportunities for students to recognize how historical understanding is continually constructed and reconstructed through engagement with community memory and interpretation.

The research questions guiding this investigation were as follows: (1) How do students engage in inquiry processes when learning is located within the heritage sites of the Sultan Barumun era? (2) What patterns of development of historical thinking skills emerge through participation in heritage-based IBL? (3) How do students experience emotional and identity connections through engagement with the local Islamic heritage? (4) What facilitating factors and challenges characterize the implementation of heritage-based IBL in Madrasah secondary education? (5) How does participation in IBL at heritage sites influence students' motivation, agency, and conceptualization of historical learning? These research questions reflect an interest in understanding both the cognitive outcomes of heritage-based IBL (particularly the development of historical thinking skills) and experiential, affective, and social dimensions of learning in such contexts.

METHOD

This investigation employed a qualitative research design grounded in interpretivist and social constructivist epistemologies. The qualitative orientation reflects the recognition that the implementation of heritage-based IBL involves complex social interactions, subjective meaning-making processes, and contextually embedded phenomena that cannot be adequately understood through quantitative measurement alone. While quantitative approaches systematically measure predetermined variables according to established metrics, qualitative approaches prioritize the holistic understanding of phenomena, exploration of how participants interpret and make meaning from experiences, and generation of rich descriptive data that capture the complexity and nuance of educational processes. The interpretivist epistemological stance emphasizes that meaningful understanding emerges through careful attention to the interpretations, perspectives, and lived experiences of research participants, recognizing that educational realities are socially constructed through ongoing interaction rather than existing as objective facts independent of human interpretation.

The research proceeded through an eight-month timeline encompassing preparatory phases, implementation phases, and intensive data collection and analysis periods. The preparatory phases included the recruitment of research participants, development of data collection instruments, training of field researchers, and coordination with school administration and heritage site managers. The implementation phase involved conductin eight IBL learning sessions distributed across a four-month period, with each session encompassing classroom preparation, site-based investigation, and reflective analysis. Data collection continued throughout and beyond the implementation period, capturing both real-time documentation of learning activities and retrospective reflections on experiences. The qualitative analysis proceeded through systematic coding and thematic analysis procedures, with continuous iterative refinement of analytical frameworks as patterns that emerged from the examination of the data.

Research Participants and Sampling

The study participants comprised five distinct groups: (1) student participants (n=50) enrolled in Grade XI at MAN Barumun, ranging in age from 16 to 17 years; (2) history teachers (n=3) employed at MAN Barumun who served as facilitators and instructional designers for IBL sessions; (3) community guides and historical informants (n=4) selected based on demonstrated knowledge of local history, fluency in community interpretive traditions, and the capability to serve as educational resources; (4) school administrative personnel (n=2) responsible for coordinating facilities, scheduling, and overall implementation support; and (5) family members of selected student participants (n=12) who participated in optional extended interviews exploring family connections to local history and students' home engagement with historical learning.

Student participants were purposively selected from the Grade XI cohort at MAN Barumun through recruitment conducted in collaboration with the school administration. The purposive sampling strategy sought to ensure representation across gender categories (24 male and 26 female students) and to include students with varied levels of prior engagement with history coursework and differing levels of familiarity with the local Barumun region. Approximately 58% of the student participants reported having lived in the Barumun region for five or more years, while 42% had moved to the region more recently or had lived in multiple locations. History teachers were recruited from the full complement of history instructors at MAN Barumun All three history teachers employed at the school participated in the research. Community guides were identified through consultation with local government cultural heritage officials, school administrators, and snowball sampling procedures; selected guides demonstrated verified expertise in Barumun history, strong community reputation, and willingness to participate in educational activities.

Data Collection Methods

The research employed multiple qualitative data collection methods, deliberately triangulating across distinct methodological approaches to achieve a comprehensive understanding and reduce the possibility of bias inherent in any single method

Structured Observation: Trained field researchers conducted systematic structured observations during each of the eight IBL sessions, utilizing a pre-established observation protocol that documented student engagement patterns, instructional interactions, student questions and inquiry processes, collaborative dynamics, and behavioral evidence of historical thinking activities. Each observation session lasted approximately 120 min and was conducted at both classroom and heritage site locations. The observation protocol recorded field notes in narrative form while simultaneously coding behaviors according to predetermined categories encompassing engagement level, inquiry processes, collaborative interaction, and historical thinking demonstrations.

Semi-structured Interviews: Interviews were conducted with history teachers (n=3, one interview each) and community guides (n=4, one interview each) to capture their perspectives on heritage-based IBL, their understanding of student learning processes, the challenges they encountered, and their recommendations for pedagogical refinement. Interviews lasted 45-60 minutes each and were conducted at the locations

of participant preference. Interviews were audio-recorded with participants consent and subsequently transcribed verbatim for analysis. The interview protocols included 12-15 open-ended questions focused on pedagogical experiences, student engagement observations, and perceived student learning outcomes.

Focus Group Discussions: Two focus group discussions were conducted with student participants (n=30 total students across both sessions, purposively selected to ensure representation across achievement levels, gender, and prior knowledge categories). Each focus group lasted approximately 90 min. The discussions employed semi-structured protocols with 8-10 guiding questions exploring students' experiences of inquiry-based learning, their engagement with heritage sites, their understanding of historical thinking processes, challenges they encountered, and their recommendations for future implementation. The focus group discussions were audio-recorded and transcribed verbatim.

Learning Journals: All 50 student participants maintained weekly reflective learning journals throughout the four-month study period. Journal prompts encouraged students to document their learning experiences, questions they formulated during investigations, evidence they encountered, interpretations they constructed, challenges they experienced, and connections they perceived between historical learning and their personal identity or community context. Students completed approximately 16 journal entries during the implementation period. Journal entries ranged from to 250-500 words per entry and were collected, photocopied for analysis while originals remained with students, and subsequently analyzed for thematic content.

Site Visits and Field Notes: Research team members conducted four site visit expeditions to the Sultan Barumun era heritage sites (monthly frequency across the four-month implementation period). During site visits, detailed field notes were recorded documenting the physical environment, visible archaeological features, community engagement at the sites, and interactions between student learners and physical heritage. Field notes were recorded in narrative form and subsequently analyzed for descriptions of student engagement patterns, inquiry processes, and emotional responses to heritage sites.

Document Analysis: Secondary documents including school historical records, curriculum guidelines, administrative communications regarding the research project, and community heritage documentation were analyzed to provide a contextual understanding of educational structures, institutional constraints, and community heritage preservation efforts. Historical sources consulted during student inquiry processes were also documented and analyzed to understand what primary evidence students engaged with and how sources were utilized in learning activities.

Historical Thinking Skills Assessment Framework

Historical thinking skills were assessed through analysis of student products (written essays, visual representations, and oral presentations) generated during IBL sessions and documented in learning journals. The assessment proceeded according to a framework of six historical thinking skill dimensions derived from contemporary history education literature and adapted to the Sultan Barumun context:

Source Analysis and Interpretation: The capacity to analyze primary historical sources (including archaeological artifacts, historical documents, oral histories, and material culture from Sultan Barumun era sites) regarding provenance, perspective, reliability, limitations, and usefulness of specific historical questions. Students were assessed for their ability to identify source characteristics, evaluate source credibility, recognize authorial perspective and potential bias, and articulate the limitations of particular sources.

Historical Contextualization: The ability to situate Sultan Barumun era events and developments within their specific cultural, social, political, and religious contexts. The assessment focused on students' capacity to explain how religious systems, political structures, trade relationships, and social hierarchies influenced historical developments and to avoid presentist interpretations that impose contemporary values and assumptions on historical actors.

Causation and Chronological Reasoning: The competency to identify long-term and short-term causes of historical developments, distinguish between correlation and causation, understand historical sequences and turning points, and recognize complexity in causal relationships. Students were assessed on their ability to articulate multiple contributing causes, trace temporal relationships between events, and avoid monocausal explanations.

Evidence-based Argumentation: The capacity to construct historical arguments supported by specific evidence from multiple sources, integrate diverse evidence types, anticipate counterarguments, and articulate the basis of historical interpretations. The assessment focused on the quality and diversity of evidence marshaled, logical coherence of argumentative structures, and explicitness of connections between claims and supporting evidence.

Perspective Recognition and Analysis: The ability to recognize that multiple valid historical interpretations may exist, to articulate perspectives distinct from one's own, to analyze how different community groups might have experienced or understood Sultan Barumun era history differently, and to evaluate how contemporary perspectives shape historical interpretations. Students were assessed on their recognition of multiple viewpoints, their capacity to articulate perspectives distinct from their own, and their understanding of how power relationships and social positions influence historical interpretation.

Synthesis and Conceptualization: The facility to integrate diverse sources of evidence, multiple perspectives, and complex causal relationships into coherent historical narratives move from specific evidence to broader historical understanding and construct original historical interpretations. The assessment focused on the comprehensiveness of synthesis, the sophistication of historical conceptualization, and the originality and defensibility of the interpretations constructed.

Data Analysis Procedures

Qualitative data analysis proceeded through thematic analysis methodology, specifically the six-phase approach developed by Braun and Clarke and adapted for educational research contexts. The analytical process encompassed the following phases

Phase 1: Familiarization with Data. The research team members engaged in repeated reading and re-reading of transcripts, field notes, and journal entries, creating initial lists of ideas and patterns observed. This immersion in the data served to develop a comprehensive familiarity with the breadth and depth of the data collected.

Phase 2: Open Coding. Initial coding involved line-by-line examination of data, with research team members identifying and labeling meaningful units of meaning regardless of predetermined categories. Open codes were generated from the actual language and concepts present in the data, maintaining fidelity to the participants interpretations and meanings. Approximately 340 initial codes are generated across the data corpus.

Phase 3: Axial Coding. In the second coding phase, the initial codes were examined for relationships and connections with codes grouped into preliminary categories. This axial coding procedure explored how different codes are related to one another and to core research questions. Related codes addressing similar phenomena were consolidated, and the relationships between the categories were identified. This process yielded 28 intermediate categories.

Phase 4: Theme Development. Intermediate categories were examined for overarching patterns and meanings, and thematic clusters were identified that captured significant aspects of the research phenomenon. Six primary themes emerged that encompassed the diversity of codes and intermediate categories while representing distinct meaningful patterns in the data.

Phase 5: Theme Refinement. Primary themes were examined for internal coherence and distinctness from one another, with careful attention pid to ensure that all themes were clearly defined, sufficiently grounded in the data, and conceptually distinct. Thematic definitions were refined, theme boundaries were clarified, and any overlapping or redundant themes were consolidated or repositioned.

Phase 6: Analytical Narrative Construction. Finally, refined themes were integrated into an analytical narrative articulating how the themes relate to one another, how they address the research questions, and what they reveal regarding heritage-based IBL implementation and historical thinking skill development. This narrative synthesis connects thematic findings to theoretical frameworks and research literature.

RESULTS AND DISCUSSION

Research Participant Characteristics

The research involved 55 participants across five categories. Student participants (n=50) ranged in age from 16 to 17 years, with gender representation of 48% male (n=24) and 52% female (n=26). History teachers (n=3) ranged in age from 35 to 50 years and had 8 22 years of teaching experience in history education. Community guides and historical informants (n=4) ranged in age from 40 to 60 years, with a deep knowledge of local history and established community roles related to heritage preservation and cultural transmission. School administrative personnel (n=2) included the school and vice principals responsible for educational management and institutional coordination. The demographic diversity of the research team ensured

the representation of multiple perspectives on heritage-based learning and enabled the examination of how IBL implementation functioned across different participant roles and experiences.

Table 1. Research Participant Demographics and Roles

Participant Category	Number	Age Range (years)	Role in Research
Male Students	24	16-17	Learning subjects in IBL intervention
Female Students	26	16-17	Learning subjects in IBL intervention
History Teachers	3	35-50	Facilitators and instructional designers
Community Guides	4	40-60	Site resource persons and historical informants
School Administration	2	40-55	Administrative support and learning environment coordination

Data Collection Timeline and Methods Summary

Data collection proceeded systematically across the study period using six distinct methodological approaches. The integration of multiple methods enabled the capture of the different dimensions of heritage-based IBL implementation and provided multiple perspectives on student learning processes and outcomes.

Table 2. Data Collection Methods, Participants, and Schedule

Data Collection Method	Participants	Frequency	Duration
Structured Observation	All students (50)	Twice weekly (8 sessions)	120 minutes each
Semi-structured Interviews	Teachers (3), Community guides (4)	One session each	45-60 minutes each
Focus Group Discussions	Students (30 selected)	Two sessions	90 minutes each
Document Analysis	School records, historical documents	Ongoing	N/A

Data Collection Method	Participants	Frequency	Duration
Student Learning Journals	Students (50)	Weekly reflections	15-20 minutes
Site Visits & Field Notes	All participants (55)	Monthly (4 visits)	180 minutes each

Historical Thinking Skills Assessment Framework and Indicators

The assessment of the development of historical thinking skills proceeded through the analysis of student work products and documented engagement, utilizing a framework encompassing six major skill dimensions. Each dimension was operationalized through specific observable indicators demonstrating student mastery at various levels.

Table 3. Historical Thinking Skills Indicators and Assessment Criteria

Historical Thinking Skill	Definition	Assessment Indicator
Source Analysis & Interpretation	Ability to analyze primary sources from Sultan Barumun era regarding authenticity, reliability, and purpose	Student identifies and critically evaluates 3+ historical sources; explains source biases and limitations
Historical Contextualization	Understanding historical events within their specific cultural, social, and political contexts of sultanate period	Student connects sultanate history to broader regional Islamic and political developments
Causation & Chronological Reasoning	Identifying long-term and short-term causes of historical developments; understanding chronological sequences	Student identifies 2+ causes for historical events; creates accurate chronological timelines
Evidence-Based Argumentation	Constructing historical arguments supported by diverse primary and secondary evidence from archaeological sites	Student constructs multi-paragraph historical arguments with citation of 4+ diverse sources
Perspective Recognition & Analysis	Recognizing multiple viewpoints and interpretations of Sultan	Student identifies and articulates 2+ distinct historical perspectives with

Historical Thinking Skill	Definition	Assessment Indicator
	Barumun's reign and Islamic heritage	respectful analysis
Synthesis & Conceptualization	Combining multiple sources of evidence to create coherent historical narratives and interpretations	Student develops comprehensive historical narrative integrating multiple evidence types and viewpoints

The first primary theme emerging from the analysis of qualitative data captured the marked enhancement in student engagement with critical inquiry processes following the implementation of heritage-based IBL. This theme encompasses patterns of student questioning, evidence evaluation, and source critique that emerged during learning activities and was documented through multiple data collection methods. The analysis identified 23 distinct instances across interviews, focus groups, and classroom observations in which students explicitly demonstrated critical engagement with historical evidence and inquiry processes.

Student questioning patterns changed notably during the course of IBL implementation. During early learning sessions, student questions tended to be factual or procedural in nature, asking for information about specific historical details or seeking clarification about task requirements. As students became increasingly familiar with heritage sites and IBL processes, questioning became progressively more sophisticated, shifting toward analytical questions about causation ("Why did the Sultan choose to position his tomb in this location?") interpretation ("What does the style of this tomb decoration tell us about Islamic practice in this era?"), and evidence evaluation ("How reliable is this source given the time period in which it was written?").

One student articulated this shift in an interview, noting: "At first I just wondered what things meant, like what is that stone structure? Later I started asking why things were done in certain ways and comparing what different sources told us about the same events." This progression suggests the development of sophistication in historical thinking as students move from descriptive to analytical questioning.

Evidence evaluation demonstrated significant development through engagement with primary source materials. Students showed an increasing capacity to identify the characteristics of sources, distinguish between primary and secondary evidence, and evaluate source reliability. When examining archaeological artifacts and historical documents at heritage sites, students became increasingly skilled at asking about provenance, when objects were created and by whom. A field note from an observation session documented: "Student group examining tomb inscriptions spent 15 minutes discussing how we could know whether a particular inscription was original or added later, and what that distinction would mean for our interpretation."

Source critique processes demonstrate the development of sophistication. Early critiques focused on identifying superficial characteristics ("This is a really old document"). Later critiques addressed more nuanced dimensions of source analysis, including recognizing the authorial perspective, identifying what perspectives might be absent or marginalized in available sources, and considering how particular sources might reflect power relationships or political interests of the era. A teacher noted in an interview: "Students started asking not just what the sources say, but whose voices are missing—who would have had different perspectives that weren't written down in official documents?"

The second major theme encompassed the deepening of students historical understanding of the Sultan Barumun era, Islamic governance systems, and the cultural significance of heritage preservation. This theme was identified across 28 distinct instances in the qualitative data where students demonstrated a more sophisticated, contextualized, and nuanced understanding of historical phenomena. The deepened understanding extended beyond factual knowledge to encompass contextual understanding—appreciation for how the political, social, religious, and economic conditions of a particular era shaped the possibilities for human action and cultural expression.

Students developed an increasingly nuanced understanding of sulfate governance structures through engagement with heritage sites and historical documents. Early understanding tended to treat sultans as individual historical actors whose personalities explained historical outcomes. As students engaged in IBL processes, they developed an understanding of sultanate governance as a system reflecting a particular political philosophy, religious concepts of legitimate authority, economic organization around trade relationships, and complex negotiations between sultanate rulers and colonial powers in the early modern period. A student essay from late in the implementation period articulated this sophisticated understanding: "The sultanate wasn't just one person's rule—it was a system that brought together Islamic religious authority, Malay cultural traditions, and relationships with merchant networks across Southeast Asia."

Understanding Islamic influence on sultanate-era development has become progressively more differentiated and complex. Early student discussions sometimes treated "Islam" as a monolithic historical force that caused particular outcomes. Later understanding recognized diversity in Islamic practice and interpretation, understood Islam as shaping but not determining political structures, and recognized the ways in which particular sultanates negotiated between Islamic principles and pre-Islamic local traditions in constructing governance systems. A focus group discussion documented students recognizing that "the sultans were Islamic but they also kept some local customs and ways of doing things—it was not just replacing everything Islamic."

The recognition of the significance of cultural heritage deepened substantially throughout the implementation period. Students understood that archaeological sites and material remains were not merely old objects or tourist attractions but represented tangible connections to past communities and preserved evidence of how ancestors understood the world and organized their lives. A student's journal entry reflected this deepened understanding: "When we first went to the site, I saw it as just

ruins, kind of boring. But learning about what it meant to the sultanate and to the Islamic community then, I started to see it as showing how important Islam was to these people's identity, like it is to our identity too."

Student Learning Outcomes: Historical Thinking Skills Development

Student learning outcomes regarding historical thinking skills development were assessed through an analysis of student work products, documented engagement patterns, and explicit assessment of skills across the six identified dimensions. The analysis compared observed skill levels during initial learning sessions with observed levels during the final sessions, and document ed patterns of development across the implementation period.

Table 4. Student Learning Outcomes - Historical Thinking Skills Development

Historical Thinking Skill	Pre-Intervention Level (Frequency)	Post-Intervention Level (Frequency)	Growth Pattern
Source Analysis & Interpretation	Basic (32 students)	Proficient (39 students)	Significant improvement (7-student increase in Proficient category)
Historical Contextualization	Basic (35 students)	Proficient (42 students)	Substantial improvement (7-student increase in Proficient category)
Causation & Chronological Reasoning	Basic (28 students)	Proficient (44 students)	Marked improvement (16-student increase from Basic to Proficient/Advanced)
Evidence-Based Argumentation	Limited (40 students)	Advanced (36 students)	Moderate improvement (Advanced category representation)
Perspective Recognition & Analysis	Limited (38 students)	Advanced (38 students)	Consistent advancement (Advanced category achievement)
Synthesis & Conceptualization	Beginning (45 students)	Proficient (46 students)	Strong progression (1-student increase in Proficient category)

The data presented in Table 5 reflect the assessment of students historical thinking skills through multiple forms of evidence: essays written in response to historical questions, oral presentations presenting historical interpretations, classroom discussions demonstrating particular thinking skills, student work products such as visual representations or timelines, and journal reflections demonstrating the development of historical understanding. The assessment process identified a clear developmental progression in five of the six historical thinking skill dimensions.

Students demonstrated the most substantial development in causation and chronological reasoning, with 16 students moving from basic to Proficient or Advanced levels, representing a 32% increase in students demonstrating proficient or advanced capability in this skill domain. This development suggests that engagement with complex historical evidence in heritage contexts effectively supported students' development of sophisticated causal reasoning and the temporal organization of historical events.

Source analysis and interpretation showed significant improvement, with seven students advancing from the Basic to Proficient level. This development reflects increasing sophistication in how students approach primary historical evidence, developing the capacity to consider source characteristics, reliability, and perspectives. The improvement, while substantial, was more modest than that in causation reasoning, suggesting that source analysis develops more gradually or that the specific source materials available at heritage sites may not have provided optimal opportunities for developing all dimensions of source analysis skills.

Historical contextualization demonstrated improvements comparable to source analysis, with seven students advancing to the proficiency level. This improvement reflects the students understanding of how to situate particular historical events within broader contexts encompassing political systems, religious influences, trade relationships, and social organization.

Evidence-based argumentation showed distinctive development with 36 students assessed as demonstrating advanced level performance in constructing historical arguments supported by diverse evidence. This notably high representation in the advanced category likely reflects the concrete, material nature of evidence available at heritage sites, which may facilitate students' capacity to marshal specific evidence in support of arguments.

Perspective recognition and analysis represented the largest group assessed at the advanced level, with all 38 students who began implementation at the limited level advancing to the advanced level. This universally strong development suggests that engagement with multiple community members at heritage sites including guides, teachers, administrators, and peers naturally fosters the recognition of diverse perspectives on historical events and cultural practices.

Synthesis and conceptualization represented the least developed of the six skill dimensions, with only one additional student advancing to roficien level. This modest development may reflect the complexity of synthesis and conceptualization as higher-order cognitive processes that require sustained, sophisticated engagement. The relatively limited development in this skill dimension suggests that heritage-based IBL, while supporting the development of multiple thinking skills, may require

specific instructional scaffolding or extended time to foster the development of complex synthesis and conceptualization capacities.

Discussion

The findings of this study provide substantial evidence that heritage-based inquiry-based learning represents an effective pedagogical approach for fostering the development of historical thinking skills in secondary students. The data demonstrate that when students engage in structured inquiry processes located within authentic historical contexts—specifically, heritage sites associated with the Sultan Barumun era—they develop demonstrable capacities in multiple dimensions of historical thinking. This finding aligns with the theoretical literature that emphasizes the importance of authentic contexts and situated learning in supporting meaningful cognitive development. The concrete and material nature of heritage sites appears to ground abstract historical concepts, making them more accessible and meaningful to student learners while simultaneously providing tangible evidence through which students can practice authentic historical investigation processes.

The development of students historical thinking skills through heritage-based IBL proceeded through progressive engagement with increasingly complex inquiry tasks. Initial learning sessions involved guided investigations in which teachers and community guides provided substantial structure and scaffolding to support student inquiry. As students became more familiar with historical content, heritage sites, and inquiry processes, the level of teacher scaffolding decreased and students assumed greater responsibility for formulating questions, selecting investigation strategies, and interpreting evidence. This progression from guided inquiry to more independent investigation reflects developmental trajectories well-established in educational research, where learners gradually assume greater responsibility and autonomy as their competence develops. The success of this scaffolded progression at MAN Barumun suggests that heritage-based learning environments can effectively support the differentiated scaffolding necessary to move students from concreteand guided engagement to more abstract, independent thinking (Musah & Wangila, 2024).

The effectiveness of heritage-based IBL in developing historical thinking skills might reflect multiple complementary factors. First, heritage sites provide multiple types of evidence—material artifacts, spatial arrangements, visible decay and preservation patterns, and architectural features—that students can investigate directly rather than encountering evidence solely through textual sources or teacher presentations. This multimodal access to evidence appears to support students' development of source analysis skills, as they practice these skills across diverse evidence types. Second, the social dimension of heritage site learning—the presence of community guides, teachers, and peers—naturally creates opportunities for students to encounter multiple perspectives on historical events and cultural practices, thereby supporting the development of perspective recognition skills. Third, the emotional and identity connections many students develop through learning in heritage contexts appear to sustain motivation and engagement, creating conditions for deeper cognitive engagement and more elaborate information processing.

Beyond the development of cognitive historical thinking skills, the research findings revealed significant emotional and identity dimensions of heritage-based IBL that

merit substantial discussion. Many students articulated that learning through heritage sites created a sense of connection to local Islamic history and regional identity that was not typically generated through classroom-based history instruction. This emotional connection appears to involve multiple sources and consequences. At one level, the physical presence at heritage sites creates a sense of historical immediacy students are at actual locations where historical actors lived, worked, worshipped, and were buried. This physical presence appears to render history vivid and real in ways that classroom narratives cannot replicate. One student's observation that "when you're at the actual site where they lived and where they're buried, it feels like they were real people with real lives" captures this shift from abstract historical narrative to recognition of historical actors as embodied human beings (Bykowa & Dyachkova, 2021).

For students whose religious and cultural identities are connected to Islam and the broader Malay-Islamic heritage of North Sumatra, engagement with Islamic heritage sites appears to create connections between personal identity and historical content. Rather than experiencing history as something external and distant, students experienced it as connected to who they are and to the values and traditions that their community maintains. This identity connection may reflect Bronfenbrenner's ecological systems theory, which posits that learning is most meaningful when it connects to multiple levels of the learner's social context family, community, and broader cultural traditions. Heritage-based learning, by engaging students within their own community contexts and with cultural narratives important to their communities, appears to activate these multiple ecological levels, creating more integrated and meaningful learning experiences.

The pride students expressed regarding their region's Islamic heritage suggests that heritage-based education may contribute not only to individual student learning but also to community pride and cultural preservation. Students articulated an interest in sharing their learning with family members, learning family stories about local history, and supporting heritage preservation efforts. These expressed interests suggest that heritage-based education may catalyze broader community engagement with heritage preservation and cultural transmission. The research did not systematically investigate whether this expressed interest translated into actual engagement in heritage preservation activities however the expressed motivations suggest the potential for heritage-based education to contribute to community-level cultural work alongside individual student learning (Azwar et al., 2025).

Findings regarding collaborative learning dynamics provide substantive evidence that historical understanding is constructed through social interaction as well as individual cognitive processes. Students engaged in peer discussion, collaborative problemsolving, and collective interpretation processes that enabled knowledge construction that appeared to exceed what individual students might have accomplished in isolation. This social constructivist understanding of learning aligns with the theoretical work of Vygotsky and contemporary educational researchers emphasizing that learning is fundamentally social and that communities of practice are critical sites for knowledge development.

The observation that students assumed teaching roles with peers, explaining concepts and sharing information suggests that peer learning may be particularly

effective in supporting historical thinking development. When students explain their thinking to their peers, they must articulate their reasoning explicitly, anticipate questions or misunderstandings, and defend their interpretations—cognitive processes that deepen and refine understanding. A teacher's observation that "peer explanation was often more meaningful than when I explained it" suggests that peers may have particular credibility or accessibility for learners that enhances the effectiveness of peer teaching. Additionally, peer learners may more readily articulate concepts in an accessible language, lacking professional terminology that sometimes distances expert explanations from novice understanding (Vuorenmaa et al., 2025).

The collaborative dynamics documented in MAN Barumun created inclusive learning environments in which diverse students contributed to collective understanding. The observation that quiet students develop confidence and voice through collaborative processes suggests that collaboration may be particularly valuable for students who are reticent in more teacher-centered learning environments. This finding is particularl relevant to educational equity, suggesting that collaborative approaches may create more inclusive learning environments than traditional lecture-based or individual work-based approaches.

The research findings highlight the significant challenges in assessing the development of complex historical thinking skills in heritage-based learning contexts. Teachers at MAN Barumun struggled to develop assessment approaches that could systematically document student development in skills, such as perspective recognition and synthesis while remaining grounded in authentic student work products. This assessment challenge reflects broader tensions in educational assessment between the desire for systematic, comparable measurement and the recognition that meaningful learning often produces diverse evidence that may resist standardized assessment approaches (Isjoni & Sumarno, 2025).

Heritage-based learning environments naturally produce diverse types of evidence for student learning: essays, oral presentations, visual representations, discussions documented in field notes, and journal reflections. This diversity of evidence is pedagogically valuable as it enables students with different communicative strengths to demonstrate their understanding. However, this diversity complicates systematic assessment, as different students may produce incommensurable types of evidence that cannot be directly compared. Teachers working in heritage-based contexts may need to develop assessment approaches that can encompass diverse evidence types while maintaining systematic documentation of skill development. This might involve developing rubrics flexible enough to accommodate diverse evidence types while maintaining consistent skill-level definitions or developing portfolio assessment approaches that document growth across multiple types of evidence (Chulan et al., 2025).

The identification of implementation challenges including limited prior historical knowledge, field site accessibility constraints, time limitations, and assessment difficulties provides an important context for understanding heritage-based IBL as a realistic pedagogical approach that requires substantive institutional and logistical support. While heritage-based IBL demonstrates significant promise in developing historical thinking skills, the findings suggest that successful implementation requires addressing multiple practical challenges (Ditingki et al., 2025).

The challenge of limited prior historical knowledge among some students suggests that heritage-based IBL may not be optimally implemented as an introductory approach to historical content but rather as a deepening or consolidation approach after students have developed basic historical knowledge and context. Alternatively, heritage-based IBL implementation might incorporate more extensive scaffolding of foundational concepts for students with limited prior knowledge. This suggests the potential value of hybrid approaches that combine heritage-based learning with other instructional strategies that build foundational knowledge before intensive heritage-based investigation.

Field site accessibility constraints appear particularly significant in contexts where heritage sites are distant from schools or lack a developed educational infrastructure. The findings suggest that heritage-based IBL may be most feasible in educational contexts where schools are proximate to significant heritage sites and sites have some level of accessibility and support for educational visits. Schools in regions distant from major heritage sites might explore whether local archaeological surveys have identified heritage resources nearer to schools or whether virtual or photographic documentation of distant sites might enable some benefits of heritage-based learning even when physical visitation is constrained.

Time constraints suggest that heritage-based IBL, to be implemented effectively, requires reasonable periods of timethe four-month period utilized in this research appears to have been minimally sufficient, with students expressing interest in more extended engagement. This implies that heritage-based IBL may be optimally implemented as a unit spanning significant portions of academic years or as extended intensive experiences rather than as occasional heritage-based activities scattered throughout the year. Alternatively, heritage-based IBL might be integrated into community-based or service-learning experiences where students engage with heritage sites across extended periods outside of formal school schedules.

The findings of this research support and extend several theoretical frameworks relevant to history education and science learning. The situated learning perspective, which emphasizes that learning is inherently situated within particular social and material contexts, is substantively supported by data. Students' engagement with authentic historical contexts—the actual sites where historical events occurred—appears to create learning that is deeply embedded in meaningful contexts, supporting the development of thinking skills that may transfer more effectively to future historical investigations than learning occurring in decontextual classroom settings alone.

These findings also resonate with the pedagogical theory of authenticity, which suggests that learning is more meaningful and effective when it engages students with authentic tasks and real-world problems rather than artificial classroom tasks. By locating learning within actual communities and real historical contexts, heritage-based IBL appears to create more authentic learning experiences than typical history classroom instruction. The enthusiasm students expressed and their motivation for continued engagement likely reflected the authentic nature of their learning experience.

The emotional and identity connections documented in this study align with the contemporary understanding of motivation and engagement in learning. Self-

determination theory, which emphasizes that human motivation is enhanced when experiences support autonomy, competence, and relatedness, appears to be relevant to understanding the effectiveness of heritage-based IBL. The opportunities for student agency in directing investigations (autonomy), the success many students experienced in developing historical thinking skills (competence), and collaborative social experiences (relatedness) all appear to support student motivation and engagement. This research suggests that heritage-based IBL may create learning conditions conducive to intrinsic motivation—the desire to engage in learning for its own sake—rather than relying primarily on external incentives or sanctions.

CONCLUSION

This qualitative research examined the implementation of inquiry-based learning through ancient tombs and heritage sites of the Sultan Barumun era in Madrasah Aliyah Negeri Barumun and its effects on the development of historical thinking skills among secondary students. Through systematic qualitative investigation employing structured observations, semi-structured interviews, focus group discussions, student learning journals, document analysis, and field site visits, this research documented six dimensions of historical thinking skill development and identified six primary themes characterizing students' engagement with heritage-based inquiry-based learning. The research findings provide substantial evidence that heritage-based IBL is an effective pedagogical approach for developing students' historical thinking skills. Students demonstrated significant developments in source analysis and interpretation, historical contextualization, causation and chronological reasoning, evidence-based argumentation, and perspective recognition and analysis. The development of these skills proceeded through students' authentic engagement with historical evidence located within community heritage contexts, supported by collaborative learning experiences and guided inquiry processes that progressively transferred responsibility to them as their competence developed. Beyond cognitive skill development, this research documented significant affective and identity dimensions of heritage-based learning. Students developed emotional connections to Sultan Barumun era heritage, expressed pride in regional Islamic heritage, and reported increased motivation for continued historical learning. These affective connections appear to arise from the authentic, locally grounded nature of heritage-based learning and from the opportunity to understand local history as being connected to personal and community identity. The research also identified substantial implementation challenges including limited prior historical knowledge among some students, field site accessibility constraints, time limitations, and assessment difficulties. These challenges suggest that heritage-based IBL, while pedagogically valuable, requires substantive institutional and logistical support for its successful implementation.

Thank-you note

The author thanks all people and institutions in most cases for their help and funding of this research

REFERENCES

Azwar, M., Purnomo, P., Farida, I., & Fadhillah, A. (2025). Museums University as Catalysts for Islamic Cultural Heritage Preservation and Learning Laboratories. *Insaniyat: Journal of Islam and Humanities*, *9*(2), 151–163. https://doi.org/10.15408/jngmxy10

Bykowa, E., & Dyachkova, I. (2021). Modeling the Size of Protection Zones of Cultural Heritage Sites Based on Factors of the Historical and Cultural Assessment of Lands. *Land*, *10*(11), 1201. https://doi.org/10.3390/land10111201

Chulan, M., Yahaya, M. F., & Shafie, L. A. (2025). ENHANCING STUDENTS' SELF-EFFICACY IN ORAL PRESENTATIONS: A PROPOSED CONCEPTUAL FRAMEWORK FOR SEAMLESS LEARNING ENVIRONMENTS (SLEs). *International Journal of Education, Psychology and Counseling*, *10*(59), 729–738. https://doi.org/10.35631/IJEPC.1059053

Dewa Made Alit. (2025). History Education in the Age of Disinformation: The Role of Historical Literacy in Social Studies Learning. *Jurnal Iqra' : Kajian Ilmu Pendidikan*, *10*(2), 452–467. https://doi.org/10.25217/ji.v10i2.6524

Ditingki, A. M., Cimene, F. T. A., & Cimene, D. R. A. (2025). Inquiry-Based Learning Strategies and Critical Thinking Skills of College Students. *Cognizance Journal of Multidisciplinary Studies*, *5*(8), 637–650. https://doi.org/10.47760/cognizance.2025.v05i08.028

Isjoni, I., & Sumarno, S. (2025). Development of a research-based learning model to enhance historical thinking skills. *Perspectives of Science and Education*, *75*(3), 201–217. https://doi.org/10.32744/pse.2025.3.13

Mohd Ramli, A. A.-R., & Borhan, M. T. (2024). BRIDGING DIGITAL TOOLS AND SCIENTIFIC LITERACY: A SYSTEMATIC REVIEW ON INQUIRY-BASED LEARNING APPROACHES. *International Journal of Modern Education*, *6*(23), 687–707. https://doi.org/10.35631/IJMOE.623047

Musah, E., & Wangila, C. (2024). Inquiry-based Ethnoecological Conservation Approach to Improve Students' Critical Thinking Skills. *International Journal of Ethnoscience and Technology in Education*, *1*(2), 97. https://doi.org/10.33394/ijete.v1i2.11240

Nghiem, X.-H., Yadav, R., Yadav, M., Dewasiri, N. J., & Ranasinghe, A. (2025). Project-Based Learning and Inquiry-Based Learning. In *Exploration of K-12 Teaching and Learning for Teacher Educators* (pp. 231–260). IGI Global. https://doi.org/10.4018/979-8-3693-9370-3.ch009

Vuorenmaa, E., Järvelä, S., & Järvenoja, H. (2025). Investigating social interaction processes in challenging collaborative learning situations—the role of emotions. *European Journal of Psychology of Education*, *40*(4), 129. https://doi.org/10.1007/s10212-025-01036-3

Copyright and License

This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 International License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

© 2026 Burhanuddin[2], Bincar Nasution[2], Insan Fahmi Siregar[3]

Published by IPI Global Press in collaboration with the Inovasi Pratama Internasional Ltd

[2]Corresponding Author: Department of History Education, Faculty of Teacher Training and Education, Universitas Graha Nusantara, Indonesia; Email: burhanuddin@ugn.ac.id