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Utilization of Artificial Intelligence (AI) to Enhance Historical Literacy and Learning Interest of Grade 10 Students at Senior High School

Firdayanti[1], Idrus A. Rore[2], Fajar Nugroho[3]
Universitas Tadulako

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Corresponding Author:
Firdayanti
Piddahamsyah@gmail.com
Universitas Tadulako

Abstract

This study investigates the utilization of Artificial Intelligence (AI) to enhance historical literacy and learning interest among Grade 10 students at SMA Negeri 7 Palu. Low student engagement in history learning remains a persistent challenge due to teacher-centered instruction, rote memorization, and limited contextual learning experiences. This research employed a qualitative descriptive approach involving one history teacher and 35 Grade 10 students. Data were collected through classroom observation, interviews, and documentation. The study found that AI platforms such as ChatGPT, Gemini, and Perplexity AI increased students' participation, confidence, curiosity, and motivation in history learning because AI provides interactive, personalized, and accessible learning experiences. Students became more active in classroom discussions and more confident in expressing historical opinions after independently exploring historical information through AI-assisted learning. The findings also indicate that teachers continue to play a crucial role as facilitators who guide students in critically evaluating AI-generated information and ensuring ethical technology use. The study concludes that pedagogically guided AI integration contributes positively to student-centered history learning and promotes stronger learning interest and historical literacy.

1. Introduction

The evolution of digital technology has precipitated significant transformations across various dimensions of human life, particularly within the realm of education. A prominent technological innovation currently undergoing rapid advancement is Artificial Intelligence (AI). Beyond its applications in the industrial and healthcare sectors, AI is increasingly integrated into pedagogical processes, serving both as a medium of instruction and a supplementary learning resource. In an educational context, AI possesses the potential to cultivate learning experiences that are more interactive, adaptive, and meticulously aligned with student requirements (Fatimah & Octaviani, 2023; Prasetya et al., 2024).

The implementation of such technology is congruent with the demands of 21st-century education, which emphasizes technological proficiency, critical thinking, creativity, and learner autonomy. Furthermore, the strategic utilization of AI in the educational sphere offers substantial opportunities to elevate instructional quality. AI facilitates the rapid retrieval of information for both educators and students, enables the diversified presentation of learning materials, and fosters a more personalized educational experience. By leveraging AI systems, the delivery of content can be adjusted based on the individual capabilities and needs of each student, thereby ensuring that the learning process is no longer merely a unidirectional transmission of knowledge (Hakim, 2022; Russell & Norvig, 2016).

History constitutes a strategic discipline that plays a pivotal role in cultivating students' character, national identity, and critical thinking frameworks (Mulders et al., 2025; Rodríguez-Moneo et al., 2026). However, pedagogical practice often encounters a significant challenge in the form of low student engagement, frequently attributed to teacher-centered approaches, the dominance of conventional lecturing, and an overemphasis on the rote memorization of facts and chronologies (Fufa et al., 2024; Wulandari & Kumalasari, 2025). Within the landscape of technological advancement, particularly Artificial Intelligence (AI), history education possesses substantial opportunities to revitalize student interest. The integration of AI facilitates a more interactive, visual, and personalized presentation of historical content—ranging from the analysis of digital primary sources to event simulations and tailored content recommendations. Such innovations are poised to foster active involvement and dismantle the prevailing perception of history as a monotonous subject.

Preliminary observations conducted in Grade X at SMA Negeri 7 Palu indicate that student interest in history remains suboptimal. This disengagement is manifest in classroom dynamics, characterized by minimal participation in discussions, a scarcity of proactive inquiry, and a lack of enthusiasm toward analytical assignments. A majority of students tend to remain passive, prioritizing task completion over deep conceptual understanding. Consequently, this research is directed toward analyzing and describing the utilization of AI in history education as a strategic effort to enhance student interest. Specifically, this study examines how the integration of AI can create learning processes that are more interactive, contextual, and meaningful, aligned with the distinct characteristics and needs of contemporary students.

Furthermore, this research aims to identify improvements in student interest through indicators of attention, engagement, curiosity, and motivation following the implementation of AI-based learning. This approach aligns with the perspective that effective history education must bridge historical content with modern contexts, utilizing technology as a medium to enhance relevance and pedagogical appeal (Manning

et al., 2024; Mayer, 2024). In this framework, AI is positioned as a learning resource that supports constructivist approaches, wherein students actively construct their understanding through the exploration of digital archives, information analysis, and critical reflection (Olusegun, 2015; Taber, 2024).

This study is supported by a body of relevant prior research concerning technology- based history education, which asserts that Artificial Intelligence (AI) possesses the potential to significantly transform pedagogical and learning approaches in history. Furthermore, these studies emphasize AI's strategic contribution toward the development of more effective, adaptive, and inclusive educational technologies (Fahruddin, 2025; Prasetya et al., 2024). In addition, research focusing on the utilization of diverse AI platforms—such as ChatGPT, Gemini, and Perplexity AI—within history education has demonstrated success in enhancing students' learning interests, academic outcomes, and critical thinking skills.

By functioning as a supportive tool in the learning process, AI contributes to improved educational quality and serves as a viable solution to the challenges of the digital era (Ahmad & Nasution, 2025; Guo et al., 2026; Putri et al., 2024). While the studies illustrate the efficacy of AI in the history classroom—specifically in increasing student engagement, deepening thematic understanding, and fostering critical analytical skills—certain limitations persist. These constraints represent significant research gaps that necessitate further and more directed analysis. The primary gap identified in previous literature lies in the paucity of studies that specifically and profoundly examine the application of AI within the unique context of history education. Much of the existing research remains generalized, failing to highlight the distinct disciplinary characteristics of history, while studies focused on single AI platforms often neglect the integration or comparative analysis between different AI systems.

Building upon the similarities and limitations identified in previous studies, this research serves as a foundational reference for developing a more nuanced analysis through a distinct approach, while maintaining a consistent focus on the core subject matter. The novelty of this study lies in its integrated examination of Artificial Intelligence (AI) implementation within history education to enhance student engagement. Rather than merely assessing the general effectiveness of AI, this research emphasizes the strategic utilization of AI features to deliver historical content in an interactive and adaptive manner, tailored specifically to student learning needs. Furthermore, by correlating AI integration with the unique characteristics of history pedagogy and student interests, this study proposes an AI-based instructional model or strategy that is highly relevant to the demands of education in the digital era.

2. Method

This study employs a qualitative approach with a descriptive method to gain an in-depth understanding of AI integration in the history learning process and its impact on student learning interests. This approach is utilized to systematically describe the process of AI implementation, the teacher's role as a facilitator, and the responses and learning interests of Grade X students at SMA Negeri 7 Palu within a naturalistic and contextual learning environment. The research was conducted in January 2026 at SMA Negeri 7 Palu, with research subjects consisting of a history teacher and 35 Grade X students.

The research data sources comprise primary and secondary data collected through observation, interviews, and documentation. Primary data were obtained through direct observation of the learning process and interviews with the teacher and students, while secondary data were sourced from school documents and relevant scientific literature. Data analysis was performed using descriptive qualitative analysis through the stages of data reduction, data display, and conclusion drawing/verification. Data validity was maintained through source and technique triangulation to ensure the research results possess credibility and scientific accountability (Abdussamad, 2021; Arikunto, 2019).

3. Result

The Utilization of AI in History Education

The utilization of Artificial Intelligence (AI) in history education at SMA Negeri 7 Palu represents a form of instructional innovation that has evolved alongside advancements in educational technology. AI is employed as a supplementary learning medium for Grade X students to facilitate the information-seeking process, conceptual understanding, and the enrichment of historical insights beyond conventional textbooks. The integration of AI does not supersede the teacher's role in the classroom; rather, it functions as a supportive tool that enhances the teaching-learning process and increases student engagement in history education.

In instructional practice, students utilize AI- based applications such as ChatGPT, Perplexity AI, and Gemini to retrieve additional information regarding the historical topics under study. AI is leveraged to assist students in comprehending the chronology of events, the backgrounds of historical figures, and causal relationships within historical occurrences. The use of these media enables students to obtain detailed and accessible explanations compared to relying solely on textbooks.

Based on direct observations conducted by the researcher in Grade X at SMA Negeri 7 Palu regarding the utilization of AI in history education, students are actively involved by utilizing AI to search for supporting information, formulate queries related to historical content, and synthesize learning summaries. At the commencement of the lesson, the teacher provides an opening greeting, conducts attendance, and instructs students to consult the Indonesian History textbooks. Prior to the core learning activities, the teacher provides an apperception (introductory link) to the students. This apperception activity is conducted to bridge the students' prior knowledge with the material to be studied, thereby ensuring students possess an initial conceptual framework and cognitive readiness to engage in the learning process.

The core learning activities commenced by providing students the opportunity to read and study the Indonesian History textbook, specifically focusing on the period of Indonesian Independence. Following the reading session, the instructor posed a provocative inquiry: 'Was Indonesian independence primarily the result of internal national struggle, or was it more significantly influenced by the global situation post-World War II?'. Subsequently, students were allotted time to identify and formulate answers using both textbooks and AI via their personal mobile devices; notably, all students elected to use their devices to conduct AI-based queries.

The most dominant AI platforms utilized were ChatGPT and Gemini, while two students employed Perplexity AI. This process encouraged students to be more autonomous, critical, and engaged in history learning. Student interaction with AI also fostered a more interactive and dynamic learning environment, resulting in higher levels of enthusiasm compared to conventional instruction.

Upon completion of the inquiry phase, the instructor requested students to present their findings before the class. Five students sequentially presented their results, while the remaining students observed and provided feedback. The instructor then facilitated a classroom discussion by clarifying student responses, correcting misconceptions, and correlating the discussion outcomes with the learning material under review. The learning activity continued by partitioning students into several small groups, each assigned an exploratory task on historical material utilizing AI via personal mobile devices. Students were directed to pose relevant prompts to the AI, encompassing event backgrounds, key figures, chronological sequences, and various evolving perspectives surrounding the independence events. The information retrieved from the AI was subsequently recorded and triangulated with other learning resources—such as textbooks, modules, or teacher-provided instructional materials—to cultivate media literacy and source verification skills.

During the discussion and presentation stage, each group presented their findings to the class. Other students were provided the opportunity to offer feedback, rebuttals, or inquiries. The teacher acted as an active facilitator by guiding the discussion, clarifying inaccuracies, and emphasizing the importance of analyzing historical contexts critically and objectively. In the concluding stage, the teacher and students synthesized the lesson material based on the classroom discussion. The teacher also led a reflection session regarding the integration of AI in history education, focusing on perceived benefits, AI limitations, and the ethical use of technology.

The process of utilizing AI in history education was conducted by integrating AI technology as a supplementary learning resource, wherein students were directed to retrieve information, analyze historical events, and critically compare various historical perspectives. Simultaneously, the researcher conducted in-depth interviews with the teacher regarding the implementation of AI in history pedagogy. The results of the interviews are as follows:

> *"The use of AI in history education is highly beneficial, as it enables students to comprehend the material more rapidly without being confined solely to textbooks. AI provides simplified explanations that are more accessible to students. Typically, I deliver the initial lecture, after which students are directed to use AI to seek supplementary explanations, such as the background of events, historical figures, or the impact of specific historical occurrences. Compared to the period before AI integration, students are now more active in asking questions and engaging in discussions. They have become more interested because the learning process feels more aligned with their technology-driven daily lives.".*

These observations align with the findings recorded during the classroom learning process, where students demonstrated higher levels of active engagement, exhibiting significant enthusiasm and increased confidence in articulating opinions and posing questions when utilizing AI as a supplementary learning resource. Corroborating the teacher's statement, the results of student interviews further indicate that the

integration of AI in history education facilitates a more profound understanding of the material, enhances learning motivation, and fosters active participation within the classroom environment.

> *"I find it easier to understand history lessons when using AI because I can ask questions immediately if I don't understand, and the responses are rapid. When there is a history assignment, I usually use AI to seek additional explanations. Consequently, the task is completed more quickly, and I have a better grasp of the material. Learning history with AI is not tedious because I can obtain concise and clear explanations, which makes me more enthusiastic about participating in the lesson.".*

The interview results indicate that the application of AI in history pedagogy renders the learning process more engaging and less monotonous. Students perceive AI as a significant aid in comprehending complex historical content due to its ability to provide concise, rapid, and accessible explanations. Furthermore, students expressed that AI utilization encourages them to be more proactive in information-seeking, questioning, and engaging in peer-to-peer or teacher-student discussions. Moreover, students assessed that the implementation of AI introduces pedagogical variety into history learning, which previously tended to be unidirectional. Other students also shared their perspectives regarding the utilization of AI in history education:

> *"Previously, learning history felt monotonous, but now it is more engaging because we can use AI instead of just reading books. By using AI, I can comprehend historical material more quickly. If there are parts I do not understand, I can immediately seek supplementary explanations. After using AI, I have become more confident in asking questions and participating in classroom discussions because I already possess a conceptual overview of the historical material".*

The integration of Artificial Intelligence (AI) within the instructional process at SMA Negeri 7 Palu receives full institutional support; the Principal of SMA Negeri 7 Palu emphasized that the utilization of AI is expected to foster a more interactive and varied learning environment. This institutional stance is reflected in the principal's statement during the interview process as follows:

> *"I anticipate that the use of AI media will create a more interactive and varied atmosphere. With the assistance of AI, students are not solely dependent on textbooks but can explore material more extensively through relevant digital sources. This is evident in the students' ability to enhance their curiosity and interest in learning.".*

Based on the interview results, the school administration supports the utilization of AI in the learning process by granting teachers and students the flexibility to leverage digital technology as supplementary learning resources, provided that such usage remains supervised and aligned with educational objectives. The implementation of AI in history education represents an instructional innovation relevant to technological advancements in the digital era. AI functions as a supplementary learning resource that assists students in information retrieval, addressing queries, and deepening their understanding of complex materials. This integration has resulted in increased student engagement, characterized by a greater confidence in expressing opinions, posing questions, and more intensive involvement in classroom discussions.

4. Discussion

Student Responses and Learning Interests Toward AI Integration

The implementation of Artificial Intelligence (AI) in history education exerts a significant influence on student responses and learning interests. The presence of AI as an alternative instructional medium and learning resource facilitates a more interactive and innovative learning experience, aligned with the characteristics of digital natives. Based on empirical findings, students no longer function as passive recipients of information; instead, they are actively engaged in the inquiry, processing, and interpretation of historical data through AI technology. This condition fosters higher levels of curiosity and enhances student engagement throughout the pedagogical process. This trend is reflected in student interviews, as stated below:

> *"When learning history using AI, the process becomes more exciting and less tedious. If I don't understand something, I can immediately ask and seek explanations independently. After using AI, history lessons become easier to comprehend. Consequently, I am more motivated to learn and complete assignments. Learning history with AI is more accessible because the explanations are concise and direct, unlike textbooks which can sometimes be overly verbose."*

Another student expressed that history learning feels more engaging because they can receive immediate feedback when they encounter difficult material. This was highlighted in the following statement:

> "If I don't understand, I can ask the AI directly. The response is rapid and can be re-explained in simpler language. Usually, I feel shy or afraid of making mistakes when speaking in class. However, after researching through AI first, I feel more confident to participate in discussions."

Nonetheless, several students also recognized that the utilization of AI still necessitates teacher guidance. The participants reported that without such supervision, AI usage could lead to over-reliance or confusion in discerning accurate information. One student stated:

> "AI is indeed helpful, but it still needs to be explained by the teacher so that we do not misunderstand and [can] identify what is essential for the lesson."

Based on these interview results, most students responded positively to the implementation of AI in history education, as reflected by increased engagement, active participation, and ease of comprehension regarding the learning material. The students perceived that AI facilitated the presentation of historical content in a more concise, clear, and accessible manner; consequently, learning was no longer focused solely on rote memorization but encouraged deeper conceptual understanding. The use of AI also contributed to an increase in student self-confidence in posing questions and expressing opinions during the learning process, although instructor guidance remained essential to ensure that AI utilization aligned appropriately with pedagogical objectives.

Regarding learning interest, the application of AI successfully enhanced student attraction toward history, a subject previously perceived as monotonous and less relevant. Based on the interview data, students disclosed that the presence of AI rendered history learning more varied and engaging, as the material was presented in simpler, more comprehensible language. Students felt that AI helped bridge their difficulties in grasping historical concepts and events that had previously been understood only through textbooks.

Furthermore, AI facilitated the delivery of historical content through more compelling approaches, such as providing explanations tailored to student needs and comprehension levels, offering examples relevant to daily life, and presenting a more coherent and systematic chronology of events. This aligns with student testimonials indicating that AI allowed them to more rapidly comprehend the flow of historical events and the causal relationships between them. Additionally, the interview results demonstrated that the increase in student learning interest was also influenced by the opportunity for direct interaction with AI. Students felt more autonomous in querying and exploring the material without the fear of making errors. This condition stimulated greater curiosity and fostered intrinsic motivation for independent learning, leading students to become more proactive in seeking supplementary information and deepening their understanding beyond the teacher's primary explanation.

"These conditions indicate that Artificial Intelligence (AI) functions not merely as a supplementary information source, but as a learning support medium capable of fostering more participatory and student-centered learning experiences. Through AI integration, students perceive a greater sense of agency over their learning process, both in determining materials for further inquiry and in self-regulating their learning pace according to individual competencies. This correlates with an increase in student self-efficacy in historical studies, as learners are no longer entirely dependent on teacher explanations or conventional textbooks. Ultimately, the utilization of AI in history education contributes to a shift in student attitudes toward the subject—transforming from passive and disengaged to becoming more interested, active, and motivated toward sustained learning.

The Role of Educators and Challenges of AI Implementation in History Education

The advancement of digital technology, specifically AI, has introduced significant shifts in the educational landscape, necessitating teachers to adapt through more innovative pedagogical approaches. The implementation of AI in instruction requires educators to possess adaptive pedagogical, professional, social, and personal competencies in response to technological developments. Teachers are required not only to demonstrate technical proficiency in AI usage but also to exhibit mastery in integrating these tools into instructional planning, strategic selection, and student learning outcomes assessment. In this capacity, the educator serves as the determinant of AI utilization to ensure it remains oriented toward meaningful learning, critical thinking, and learner-centeredness, rather than mere instrumental technology use.

Furthermore, educators bear the moral and ethical responsibility of supervising AI usage within the educational environment. AI must be utilized prudently to mitigate risks of over-dependence, information misuse, or the erosion of students' critical thinking skills. The teacher functions as a facilitator who instills values of responsibility, academic integrity, and digital literacy in students. Through this pivotal role, AI implementation in learning can align with national educational objectives while reinforcing the position of

the teacher as the primary agent in creating instruction relevant to contemporary demands (Republic of Indonesia, 2003).

The role of the teacher in the implementation of AI within history education can be understood more comprehensively as a strategic effort to integrate technology with pedagogical approaches. Teachers function not merely as AI users but as instructional designers capable of selecting, modifying, and directing the utilization of AI to align with history learning objectives. Learning activities are viewed as an active process in which students construct their own knowledge through interactions with the environment, experiences, and learning resources (Olusegun, 2015; Taber, 2024). The implementation of AI in history education provides a space for students to explore material, pose questions, and discover meaning independently.

The teacher serves as a facilitator who guides the knowledge construction process, directing the use of AI so that students do not merely receive information passively but are able to correlate the acquired information with prior knowledge, social contexts, and the historical realities being studied. AI can be utilized as a supporting tool for knowledge construction rather than a sole source of truth (Chassignol et al., 2018; Enslin & Kaul, 2025). Within the framework of cognitivism, learning emphasizes mental processes such as comprehension, information processing, and the organization of knowledge (Bada & Olusegun, t.t.; Waite-Stupiansky, 2022).

AI can assist in presenting historical information more systematically, coherently, and in accordance with students' cognitive levels. However, the teacher maintains a central role in helping students manage cognitive load—for instance, by guiding students in filtering essential information, developing concept maps, and linking cause-and-effect relationships between historical events. Without the teacher's role, the use of AI has the potential to cause information overload, which may conversely hinder student comprehension.

Fundamentally, the classroom learning process aims to develop the students' full potential, including aspects of motivation, interest, and self-confidence (Firmansyah & Saepuloh, 2022; Rumjaun & Narod, 2025). The implementation of AI in history education provides opportunities for students to learn according to their respective interests, pace, and needs. In this regard, the teacher plays a role in creating a safe and supportive learning climate where students feel free to inquire, experiment, and make mistakes. The teacher ensures that the use of AI can enhance students' intrinsic motivation and their self-confidence in studying history, rather than inducing dependency or learning anxiety.

Furthermore, AI supports the shift in the teacher's role from the primary source of information to a learning facilitator and mentor. Teachers design learning activities that allow students to actively search for, analyze, and reflect upon historical information with the assistance of AI. Nevertheless, the teacher remains responsible for maintaining the direction of learning to ensure alignment with curricular goals and historical education values, such as the instilling of nationalism, historical consciousness, and a critical attitude toward the past (Bhardwaj et al., 2025; Singhal, 2017).

Instructional effectiveness is achieved when students are assisted in reaching higher levels of comprehension through support mechanisms or scaffolding (Lasmawan & Budiarta, 2020). While AI can provide initial assistance in the form of simplified explanations, examples, and material summaries, the teacher retains the pivotal role in determining the extent of such assistance and identifying when students should be challenged to engage in deeper cognitive processing. Teachers adjust task difficulty levels,

pose follow-up questions, and encourage critical analysis of historical information retrieved via AI.

Nevertheless, although AI offers significant potential to enhance instructional quality through interactive content delivery, personalized learning, and rapid, broad access to information, its classroom implementation is inextricably linked to various structural, pedagogical, technological, and ethical constraints. A primary challenge lies in human resource readiness, specifically regarding educators. History teachers are required not only to possess substantive content knowledge but also to demonstrate digital literacy and pedagogical competence in utilizing AI effectively. The transformation of the teacher's role from a mere information provider to a facilitator, curator, and director of AI usage necessitates continuous professional development. Without adequate understanding, AI implementation risks becoming a mere tool for instantaneous answer-seeking, which conversely diminishes students' critical thinking processes in analyzing historical events.

Technological infrastructure limitations also constitute a significant barrier to AI utilization in learning; not all schools possess stable internet access, adequate digital devices, or sustained technical support. This digital divide has the potential to create disparities in instructional quality between well-equipped institutions and those with limited resources. In the context of ideal history education, which encourages source exploration, document analysis, and data interpretation (Nugroho et al., 2024), limited technological access may hinder the optimization of AI utilization. A subsequent challenge pertains to information validity and accuracy; generative AI is capable of rapid text production but does not consistently guarantee the precision of historical data. There are inherent risks of factual distortion, oversimplification, or bias in the presentation of historical narratives. This is crucial because history involves interpretation, perspective, and sensitivity toward socio-political contexts (Nugroho, 2019). If students accept information without source verification and critique, the objectives of history education—namely fostering historical consciousness and critical thinking skills—may be compromised.

History education possesses dimensions of values and character that cannot be entirely replaced by technology; history is not merely about chronological data, but also about instilling national values, empathy toward the past, and the formation of collective identity (Barreiro & Perez-Manjarrez, 2025; Kartodirdjo, 2020). The implementation of AI in history education must maintain consideration for these humanistic dimensions to ensure technology does not obscure the essence of history education as a medium for character building and social awareness. The challenges of AI implementation in history education are not solely technical but also encompass pedagogical, ethical, and philosophical aspects. Efforts to integrate AI effectively require synergy between enhancing teacher competence, providing adequate infrastructure, establishing clear regulations, and designing instruction that remains oriented toward developing students' historical thinking abilities. A critical and directed approach will ensure that AI functions as a catalyst for instructional innovation rather than a replacement for the human role in the educational process.

5. Conclusion

The utilization of Artificial Intelligence (AI) in history education within Grade X at SMA Negeri 7 Palu demonstrates that systematic technological integration enhances student learning interest through the delivery of more interactive, adaptive, and accessible instructional materials. AI not only assists students in accessing diverse information rapidly but also fosters active engagement, curiosity, and confidence in academic discussion and expression. The success of its implementation remains contingent upon the teacher's role as a facilitator, infrastructural readiness, and the application of clear technological ethics. Pedagogically designed AI integration is proven to shift the instructional paradigm from traditional teacher-centered learning to a student-centered approach.

Students no longer function as passive recipients of information; instead, they engage in the exploration, analysis, and interpretation of historical events supported by technology. This shift results in increased intrinsic motivation, heightened inquiry-based activity, and an enhanced ability to comprehend the interconnectedness between historical events and contemporary contexts. Furthermore, AI integration facilitates more contextual and relevant learning opportunities, effectively repositioning history from a perceived monotonous, rote-memorization subject into a dynamic field of study.

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