

EXPLORING THE USE OF ARTIFICIAL INTELLIGENCE IN LEARNING: A PHENOMENOLOGICAL STUDY OF STUDENTS CRITICAL THINKING EXPERIENCES

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Abstract: The development of Artificial Intelligence (AI) in higher education has transformed the way students' access, understand, and construct academic knowledge. This study aims to explore the experiences of students at the Faculty of Islamic Education and Teacher Training, Universitas Garut, in using AI during the learning process, as well as to understand the meaning of AI usage in relation to students' critical thinking. This research employed a qualitative approach with a transcendental phenomenological design. Data was collected through semi-structured in-depth interviews, observations, and documentation involving students who actively use AI in their academic activities. Data analysis was conducted through the processes of epoche, horizontalization, thematic clustering, and synthesis of meanings and essences. The findings reveal that students perceive AI as a form of cognitive scaffolding that helps them understand learning materials, improve academic efficiency, and accelerate access to information. However, the use of AI also gives rise to dependency anxiety, an instant culture, and concerns regarding the weakening of independent thinking skills. The study further identifies the presence of reflective skepticism, namely students' tendency to validate AI-generated information by cross-checking it with other academic sources. In addition, this research introduces the concept of AI-driven learning consciousness, a new form of learning awareness characterized by dialogical interaction with AI, critical reflection on digital information, and awareness of the risks of technological dependency. This study emphasizes that AI not only transforms the learning process technologically but also influences the epistemological construction and critical thinking experiences of students in the digital era.

Keywords: artificial intelligence; critical thinking; phenomenology; learning consciousness; higher education students.

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INTRODUCTION

The development of Artificial Intelligence (AI) in higher education has fundamentally transformed the ways in which students' access, produce, and interpret knowledge. The emergence of generative AI technologies such as ChatGPT, Gemini, and Copilot no longer functions merely as tools for information retrieval but increasingly assumes a role within students' cognitive processes through the provision of instant answers, argument

construction, literature summarization, and even the automated production of academic texts. This phenomenon reflects an epistemological transformation in the learning process, in which intellectual activities previously carried out through reflection, analysis, and independent exploration are now increasingly mediated by AI-based algorithmic systems. Within the context of higher education, this phenomenon raises important questions regarding how AI influences students' ways of thinking, understanding knowledge, and constructing intellectual awareness (Maphosa & Maphosa, 2023).

Numerous studies have demonstrated that Artificial Intelligence possesses significant potential to support learning through educational personalization, increased learning efficiency, and broader access to academic information (Zawacki-Richter et al., 2019). Generative AI also enables students to obtain academic assistance rapidly and interactively, thereby making the learning process more flexible and adaptive to individual needs (Chan & Tsi, 2023). From an optimistic perspective, AI is viewed as a technology capable of expanding opportunities for knowledge exploration and assisting students in developing academic creativity through more dynamic interactions with digital technologies.

Nevertheless, the increasing use of AI in learning environments has also generated growing academic concerns. The convenience provided by AI may encourage cognitive offloading, namely the tendency to delegate thinking processes and decision-making to digital technologies. Such conditions may reduce students' intellectual engagement in the processes of analysis, evaluation, and critical reflection on acquired information. Kerruish (2025) explains that the development of digital culture and technological automation not only changes the ways individuals obtain information but also affects the structures of reasoning and reflective consciousness in the learning process. In this context, AI no longer serves merely as a technological tool but increasingly functions as an epistemic agent that mediates the ways students understand reality and construct knowledge.

This issue becomes increasingly significant within higher education because critical thinking constitutes one of the essential competencies' students must possess in the digital era. Facione (2015) explains that critical thinking encompasses the abilities of interpretation, analysis, evaluation, inference, explanation, and self-regulation in understanding issues rationally and reflectively. These abilities are not solely related to information mastery but also concern students' intellectual autonomy in independently evaluating the validity of knowledge. However, the excessive dominance of Artificial Intelligence in learning processes has the potential to diminish the cognitive struggle that is fundamentally important in the development of critical thinking skills. Students may become accustomed to receiving instant answers without engaging in processes of meaning-making, source verification, or in-depth argumentative exploration.

On the other hand, several studies have produced contradictory findings regarding the influence of Artificial Intelligence on students' critical thinking. Some studies indicate that AI can assist students in broadening perspectives, exploring ideas, and enhancing the quality of academic discussions (Darwin et al., 2024). However, other studies suggest that excessive use of AI may lead to intellectual dependency, reduced reflective capacity, and weakened independence of thought among students during the learning process (Abdullah et al., 2023). These contradictions indicate that the influence of AI on critical thinking cannot be understood merely in terms of positive or negative impacts but rather must be examined through students' subjective experiences in interpreting the use of such technologies within their academic activities.

Although research on Artificial Intelligence in higher education continues to expand, most studies remain dominated by quantitative approaches focusing on learning effectiveness, technology acceptance, and improvements in student learning outcomes (Zawacki-Richter et al., 2019). Research examining students' lived experiences in using Artificial Intelligence in relation to the development of critical thinking remains relatively limited. Previous studies have tended to view AI primarily as an instructional technology instrument rather than as a phenomenon influencing students' consciousness, reflection, and construction of meaning regarding knowledge. Consequently, there remains a research gap in understanding how students experience, interpret, and negotiate the use of AI within their critical thinking processes.

This gap becomes particularly relevant within the context of students at the Faculty of Islamic Education and Teacher Training, Universitas Garut. Education students are not only expected to master digital technologies, but are also required to possess reflective, ethical, and critical capacities as future educators. Within the tradition of Islamic education, the pursuit of knowledge is not merely understood as the transfer of information, but also as a process of developing intellectual awareness, moral reflection, and deeper understanding of knowledge. The presence of Artificial Intelligence in the learning process may create tensions between technological efficiency and the reflective-humanistic processes involved in shaping students' ways of thinking. Therefore, it is important to understand how students of Islamic education interpret the use of AI within their academic experiences, particularly in relation to the development of critical thinking abilities.

Based on these considerations, this study aims to explore the lived experiences of students at the Faculty of Islamic Education and Teacher Training, Universitas Garut, in using Artificial Intelligence during the learning process and to understand the meaning of AI usage in relation to their critical thinking processes. This study employs a phenomenological approach because such an approach enables researchers to understand students' conscious experiences, subjective reflections, and constructions of meaning regarding the use of Artificial Intelligence in their academic activities. This research is expected to contribute to the global

discourse on Artificial Intelligence and higher education, particularly in understanding how AI technologies influence intellectual autonomy, critical reflection, and students' learning experiences in the digital era.

METHOD

This study employed a qualitative approach with a phenomenological design to explore students lived experiences in using Artificial Intelligence (AI) during the learning process and to understand the meaning of these experiences in relation to students' critical thinking processes. A qualitative approach was selected because this study seeks to understand participants' subjective experiences, reflections, and constructions of meaning regarding the phenomenon of AI usage within the context of digital learning. According to John W. Creswell and Poth (2018), qualitative research is used to explore and understand the meanings individuals or groups assign to social or human phenomena. In the context of this study, the use of Artificial Intelligence is understood not merely as a technological practice, but also as an epistemic experience that influences the ways students think, understand information, and construct academic knowledge.

The research design employed was transcendental phenomenology as developed by Clark Moustakas (1994). This approach was selected because the study aimed to uncover the essence of experience related to the use of Artificial Intelligence in learning. Unlike interpretative phenomenology, which focuses on the social interpretation of experience, transcendental phenomenology seeks to understand participants' conscious experiences directly through the exploration of meaning, reflection, and subjective awareness. This approach was considered relevant because the study not only ought to identify how students use AI, but also how they interpret the influence of AI on their critical thinking processes within academic activities.

The study was conducted among students of the Faculty of Islamic Education and Teacher Training, Universitas Garut. The selection of this research context was based on the consideration that education students occupy a strategic position as future educators who are expected not only to master digital technologies, but also to possess reflective, ethical, and critical thinking abilities within the learning process. Furthermore, the context of Islamic education possesses epistemological characteristics that position the pursuit of knowledge as a reflective activity and a process of intellectual consciousness formation. Therefore, the use of Artificial Intelligence within the context of Islamic education is important to investigate because it has the potential to influence students' relationships with knowledge, reflection, and critical thinking processes.

Research participants were recruited using purposive sampling based on the relevance of participants' experiences to the focus of the study (Patton, 2015). The participant criteria

included: (1) active students of the Faculty of Islamic Education and Teacher Training, Universitas Garut; (2) active users of Artificial Intelligence platforms such as ChatGPT, Gemini, or other AI platforms in academic activities; and (3) individuals with experience using AI for assignment preparation, reference searching, academic discussions, or understanding learning materials. The number of participants was not determined statistically, but rather based on the principle of thematic saturation, namely the condition in which interviews no longer generated new themes related to the phenomenon under investigation. This study was expected to involve approximately 10–15 participants until data saturation was achieved.

In qualitative research, the researcher serves as the primary research instrument (Creswell & Poth, 2018). Therefore, the researcher was directly involved in the processes of data collection, interpretation, and analysis. To minimize subjective bias, the researcher conducted reflexive journaling periodically throughout the research process. This reflective process involved documenting assumptions, personal experiences, and the researcher's perspectives regarding the use of Artificial Intelligence in order to ensure that data interpretation remained focused on the authentic experiences of participants.

Data was collected through semi-structured in-depth interviews as the primary research technique. Interviews were conducted both face-to-face and online, with each session lasting approximately 45–60 minutes. All interviews were audio-recorded with participants' consent and transcribed verbatim to preserve the integrity of participants' experiences and meanings. The interview protocol was designed to explore students' experiences in using Artificial Intelligence and their reflections on critical thinking processes during learning activities. Examples of interview questions included: "Can you describe your experience using Artificial Intelligence during academic activities?" and "How does Artificial Intelligence influence the way you analyze or evaluate information during learning activities?" In addition to interviews, observations were conducted to understand the context of AI usage in students' academic activities, while documentation such as academic assignments, digital learning notes, and forms of student interaction with AI platforms were utilized as supporting research data.

Data analysis was conducted using the transcendental phenomenological analysis procedures proposed by Moustakas (1994). The first stage involved epoche or bracketing, namely the researcher's reflective process of suspending personal assumptions regarding Artificial Intelligence in order to understand participants' experiences more openly. This was followed by horizontalization through the identification of significant statements related to students' experiences in using AI during learning activities. These statements were subsequently developed into units of meaning through inductive coding and thematic clustering.

The subsequent stage involved the development of textural descriptions to illustrate what participants experienced while using Artificial Intelligence, as well as structural descriptions to understand how these experiences were formed within the context of their learning processes. The final stage involved the synthesis of meanings and essences to identify the essential nature of students' experiences regarding the influence of AI on their critical thinking processes. The analysis process was conducted iteratively through repeated data reading, memoing, and reflective interpretation to generate rich and thick descriptions of participants' experiences (Creswell & Poth, 2018).

To ensure the trustworthiness of the study, this research employed the criteria of credibility, transferability, dependability, and confirmability developed by Yvonna S. Lincoln and Egon G. Guba (1985). Credibility was established through member checking by asking participants to verify the interpretations of interview results. Transferability was achieved through the presentation of detailed contextual descriptions to enable readers to assess the relevance of the findings to other contexts. Dependability was ensured through an audit trail documenting the entire research process, while confirmability was maintained through data triangulation involving interviews, observations, documentation, and the researcher's reflexive journaling.

This study adhered to ethical research principles through the provision of informed consent, protection of participants' confidentiality, and the use of pseudonyms throughout the reporting of research data. Participant involvement was entirely voluntary, and participants retained the right to withdraw from the study at any stage of the research process. This study received academic approval from the Faculty of Islamic Education and Teacher Training, Universitas Garut, as the research site.

RESULT AND DISCUSSION

This study aims to explore the experiences of students at the Faculty of Islamic Education and Teacher Training, Universitas Garut, in using Artificial Intelligence (AI) during learning processes and academic activities. A phenomenological approach was employed to understand how students interpret these experiences within their everyday learning consciousness. Based on the results of in-depth interviews, the findings indicate that the use of AI is not merely understood as a technical tool for completing academic tasks, but has also transformed the ways students understand knowledge, develop learning strategies, validate information, and reflect upon their critical thinking processes.

Phenomenological analysis revealed that students' experiences with AI are inherently ambivalent. On the one hand, AI is perceived as a technology capable of improving learning efficiency, simplifying complex materials, accelerating information retrieval, and assisting academic problem-solving processes. On the other hand, students also recognize the risks of dependency, instant learning culture, and the decline of deep reflective processes when AI is

used excessively without critical control. These experiences indicate that students' relationships with AI are not merely instrumental but have evolved into epistemological relationships that influence how students understand, validate, and construct knowledge.

Based on data reduction, coding, categorization of meanings, and phenomenological interpretation, this study identified six major themes: (1) AI as cognitive scaffolding in learning, (2) AI as an accelerator of academic efficiency, (3) reflective skepticism in information validation, (4) dependency anxiety and instant culture, (5) the transformation of students' critical thinking, and (6) AI as a dialogical partner in students' new learning consciousness.

AI as Cognitive Scaffolding in Learning

The interview findings demonstrate that students perceive AI as a cognitive support tool that helps them understand materials previously considered complex, abstract, and difficult to comprehend. Most participants explained that AI is capable of simplifying academic concepts into language that is easier to understand according to students' individual needs and learning characteristics. One participant stated:

“AI helps simplify materials that are difficult to understand, especially mathematical and logical language. AI assists problem-solving by simplifying abstract procedures into more structured forms.”

These experiences indicate that AI does not merely function as an information search engine, but has become a pedagogical medium that assists students in constructing conceptual understanding in more personalized ways. Students experience a more flexible learning process because AI allows adjustments in language, levels of difficulty, and forms of explanation according to individual needs. Within students' experiences, AI provides a more adaptive form of learning compared to conventional instructional models that are often uniform in nature.

Phenomenologically, these experiences suggest that students no longer depend entirely on lecturers as the sole source of knowledge. The presence of AI creates a new learning experience in which students can directly interact with algorithmic systems to obtain explanations that are simpler, faster, and more personalized. Thus, AI has begun to assume the role of a “cognitive mediator” in students' learning experiences.

These findings may be understood through Jerome Bruner's (1985) scaffolding theory, which explains that learning occurs when individuals receive temporary assistance in understanding tasks or concepts that they cannot yet master independently. In the context of this study, AI functions as digital scaffolding that helps students bridge the gap between their actual and potential abilities. Furthermore, students' experiences also align with Vygotsky's (1978) concept of the Zone of Proximal Development, in which AI acts as a “more capable other”

assisting students in achieving levels of understanding that would otherwise be difficult to attain independently.

However, this study extends classical scaffolding theory because the learning assistance experienced by students no longer originates from humans, but from AI-based algorithmic systems. This indicates a transformation in modern pedagogical relationships. Whereas traditional scaffolding occurs through interpersonal interaction between teachers and students, AI-based scaffolding occurs through dialogical interactions between students and machines.

These findings are consistent with the study by Kasneci et al. (2023), which demonstrated that generative AI can enhance personalized learning support through adaptive and interactive responses. However, the present study reveals a deeper dimension, namely that students use AI not only to obtain answers, but also to develop academic confidence when confronting difficult materials.

AI as an Accelerator of Academic Efficiency

The second theme demonstrates that students perceive AI as a technology that accelerates academic activities and improves learning efficiency. Students use AI to search for references, summarize readings, construct writing outlines, improve grammar, and assist in completing coursework. One participant explained:

“AI helps create summaries, generate ideas, and provide examples so that assignments can be completed more easily and quickly.”

Students experience AI as a technology capable of reducing cognitive burdens in academic processes. Tasks that previously required substantial amounts of time can now be completed more rapidly with AI assistance. Within students’ experiences, AI is not merely a tool for obtaining answers, but has become an accelerator of academic productivity.

This phenomenon indicates the occurrence of cognitive offloading, namely the process by which individuals transfer portions of their cognitive workload to external technological devices (Risko & Gilbert, 2016). Students no longer rely entirely on internal memory capacity because processes of information retrieval, idea generation, and data processing have partially been delegated to AI. These experiences create learning efficiency, while simultaneously producing fundamental changes in how students manage their thinking processes.

From a phenomenological perspective, experiences of efficiency are not neutral. Students experience comfort, speed, and convenience, which subsequently shape new orientations toward learning. Learning processes are no longer understood as lengthy intellectual journeys, but rather as activities that must occur quickly, practically, and efficiently. This

indicates that AI not only changes how students learn but also transforms students' expectations regarding the learning process itself.

These findings support the study by Dwivedi et al. (2023), which argued that generative AI enhances academic productivity through the automation of various learning activities. However, this study demonstrates that such efficiency also carries epistemological consequences, namely the emergence of students' tendencies to value rapid access to answers more highly than processes of deep knowledge exploration.

Reflective Skepticism in Information Validation

Although students experience significant benefits from AI, this study found that most students do not accept AI-generated information uncritically. Instead, students develop information validation mechanisms through cross-checking with books, journals, scholarly articles, and other academic sources. One participant stated:

"I usually verify the information again through books, journals, scholarly articles, or official online sources."

This experience demonstrates the emergence of reflective skepticism, namely a reflective skeptical attitude toward information produced by AI. Students recognize that AI may generate inaccurate information, thereby necessitating evaluation and verification processes before such information can be used in academic tasks.

Phenomenologically, these experiences indicate that AI has transformed students' epistemological consciousness. Knowledge is no longer accepted solely on the basis of singular authority, but rather through negotiation processes involving AI outputs, personal experiences, and validation from external sources. Students experience a transformed relationship with knowledge; they become increasingly aware that digital information must continually be tested for validity.

These findings are closely related to Facione's (1990) concept of critical thinking, which encompasses analysis, evaluation, interpretation, and inference. Students use AI not only as a tool for acquiring information, but also as an object of critical evaluation. The cross-checking practices conducted by students demonstrate reflective thinking processes in the use of digital technologies.

However, this study also found that reflective skepticism emerges not merely from mature critical thinking abilities, but also from students' limited trust in AI systems. In other words, such skepticism arises from awareness of AI's potential inaccuracies. This finding demonstrates that, paradoxically, AI usage may strengthen students' critical awareness regarding the validity of digital knowledge.

Dependency Anxiety and Instant Culture

Although AI is perceived as highly beneficial, students also expressed concerns regarding the emergence of dependency in learning processes. One participant stated:

“The use of AI is indeed very helpful, but it also creates dependency, and if used unwisely, it may reduce critical thinking abilities.”

These experiences demonstrate the existence of dependency anxiety, namely students' concerns regarding the potential weakening of independent thinking abilities resulting from intensive AI usage. Students recognize that the convenience of obtaining instant answers may reduce motivation for engaging in deep intellectual exploration.

This phenomenon reflects the ambivalence of students' experiences with AI. On the one hand, AI provides efficiency and convenience in learning. On the other hand, students also perceive threats to their own reflective capacities. Within students' experiences, AI is simultaneously perceived as an academic solution and a potential threat to intellectual autonomy.

These findings are related to the concept of automation bias, namely individuals' tendencies to over-rely on automated systems, thereby reducing critical evaluation of received information (Mosier & Skitka, 1996). In the context of this study, students have begun to recognize that uncontrolled AI usage may lead to excessive delegation of thinking processes to machines.

This study demonstrates that students live within tensions between efficiency and reflection. They appreciate the convenience offered by AI, while simultaneously fearing the loss of independent thinking capacities. These tensions constitute an important dimension of students' phenomenological experiences within the era of AI-based learning.

The Transformation of Students' Critical Thinking

This study found that AI influences not only the ways students obtain information, but also the ways they think and evaluate knowledge. Some students stated that AI helps them consider multiple perspectives and develop more systematic patterns of thinking.

Students have become increasingly accustomed to questioning answers, comparing sources, and evaluating the relevance of information before using it in academic tasks. These experiences indicate that AI may stimulate more active cognitive reflection processes. Nevertheless, the transformation of critical thinking identified in this study is paradoxical in nature. For some students, AI enhances evaluative and reflective abilities. However, for others, AI creates an instant culture that reduces independent intellectual exploration processes. Therefore, the influence of AI on critical thinking is not linear, but highly dependent upon users' reflective consciousness.

These findings extend previous studies that tended to view AI merely as a learning support tool. This study demonstrates that AI also functions as a space for epistemic negotiation that influences how students construct truth, knowledge authority, and academic reflection.

Conceptual Synthesis: AI-Driven Learning Consciousness

Based on students' overall experiences, this study proposes the concept of "AI-driven learning consciousness," namely a new form of learning consciousness that emerges when students construct knowledge through reflective interactions with AI systems. This learning consciousness is characterized by several primary features, including accelerated access to knowledge, cognitive dialogue with AI, reflective skepticism toward digital information, and awareness of the risks of technological dependency.

This concept demonstrates that AI is no longer merely a technical support tool, but has become part of the learning consciousness structure of modern students. Students use AI not only to obtain answers, but also as a dialogical partner in constructing understanding, evaluating information, and reflecting upon their own thinking processes.

Thus, this study emphasizes that educational transformation in the AI era is not merely a technological change in learning processes, but also an epistemological transformation concerning how students understand knowledge, construct academic authority, and experience learning within contemporary academic life.

CONCLUSION

This study demonstrates that the use of Artificial Intelligence has fundamentally transformed students' learning experiences and critical thinking processes in higher education. AI is no longer understood merely as a technological tool for assisting with academic tasks but also functions as a form of cognitive scaffolding that helps students understand learning materials, improve academic efficiency, and mediate the process of knowledge construction.

The findings reveal that students experience an ambivalent relationship with AI. On the one hand, AI helps broaden perspectives, enhance learning flexibility, and encourage information validation processes through reflective evaluation and cross-checking of sources. On the other hand, excessive use of AI has the potential to create cognitive offloading, foster an instant culture, and weaken students' intellectual autonomy within the learning process.

This study also identifies the emergence of the concept of AI-driven learning consciousness, namely a new form of learning awareness characterized by dialogical interaction with AI, reflective skepticism toward digital information, and awareness of the risks of technological dependency. These findings emphasize that the integration of AI in higher education is not merely a transformation of learning technology, but also an epistemological shift that

influences how students think, understand knowledge, and construct academic meaning in the digital era.

Future research is recommended to examine the long-term impacts of AI usage on intellectual independence, ethical reflection, and the development of students' critical thinking within broader educational contexts.

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