

Exploring Artificial Intelligence as a Learning Companion in Distance Education: Student Motivation and Self-Regulated Learning in Islamic Higher Education

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Abstract

Keywords:

Artificial Intelligence, Distance Learning (DL), Learning Motivation, Self-Regulated Learning, Islamic Religious Education (IRE)

This study affirms that the utilization of Artificial Intelligence (AI) as a learning partner in the Distance Learning (DL) system plays a significant role in shaping learning experiences, enhancing motivation, and strengthening self-regulated learning (SRL) among students of the Islamic Religious Education (IRE) Study Program at UIN Siber Syekh Nurjati Cirebon. This research employs a qualitative approach with a case study design, where data were collected through in-depth interviews, limited participant observation, and digital documentation, and then analyzed using NVivo software to produce a systematic thematic mapping. The findings show that students utilize AI as an adaptive and dialogic learning partner that supports understanding of learning materials, completion of assignments, and independent learning reflection. In addition, the use of AI has been proven to enhance learning motivation through the strengthening of autonomy, competence, and engagement, as well as encouraging SRL practices in planning, monitoring, and evaluating learning processes. However, this study also identifies challenges such as potential dependency, issues of information validity, and ethical concerns in the use of AI in learning. Thus, the integration of AI in DL needs to be implemented in a pedagogical, critical, and ethical manner in order to optimally contribute to improving the quality of student learning.

Abstrak

Kata kunci: Artificial Intelligence, Pendidikan Jarak Jauh (PJJ), Motivasi Belajar, Self-Regulated Learning, Pendidikan Agama Islam (PAI)

Penelitian ini menegaskan bahwa pemanfaatan kecerdasan buatan/Artificial Intelligence (AI) sebagai mitra belajar dalam sistem Pendidikan Jarak Jauh (PJJ) berperan signifikan dalam membentuk pengalaman belajar, meningkatkan motivasi, serta memperkuat self-regulated learning (SRL) mahasiswa Program Studi Pendidikan Agama Islam (PAI) di UIN Siber Syekh Nurjati Cirebon. Penelitian ini menggunakan pendekatan kualitatif dengan desain studi kasus, di mana data dikumpulkan melalui wawancara mendalam, observasi partisipatif terbatas, dan dokumentasi digital, kemudian dianalisis menggunakan aplikasi NVivo untuk menghasilkan pemetaan tematik yang sistematis. Hasil penelitian menunjukkan bahwa mahasiswa memanfaatkan AI sebagai mitra belajar yang adaptif dan dialogis, yang mendukung pemahaman materi, penyelesaian tugas, serta refleksi belajar secara mandiri. Selain itu, penggunaan AI terbukti meningkatkan motivasi belajar melalui penguatan otonomi, kompetensi, dan keterlibatan, serta mendorong praktik SRL dalam aspek perencanaan, pemantauan, dan evaluasi belajar. Namun demikian, penelitian ini juga mengidentifikasi tantangan berupa potensi ketergantungan, validitas informasi, dan isu etika penggunaan AI dalam pembelajaran. Dengan demikian, integrasi AI dalam PJJ perlu dilakukan secara pedagogis, kritis, dan etis agar dapat memberikan kontribusi optimal terhadap kualitas pembelajaran mahasiswa.

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INTRODUCTION

Digital transformation in higher education has driven the adoption of Artificial Intelligence (AI) as a learning partner in Distance Learning (DL) systems, particularly in learning contexts that require high levels of independence, such as students in the Islamic Religious Education (PAI) Study Program. This phenomenon has become increasingly relevant in line with the growing demand for flexible, personalized, and adaptive learning in the post-pandemic era, where technology is no longer merely a supporting tool but plays the role of a cognitive partner in the process of knowledge construction. Various studies indicate that the integration of AI in online learning can improve learning effectiveness through content personalization, adaptive feedback, and continuous metacognitive support (Zawacki-Richter et al., 2019; Holmes et al., 2019; Luckin et al., 2016; Chen et al., 2020; Ifenthaler & Yau, 2020). In addition, within the context of religious higher education, AI also has the potential to enrich learning experiences by integrating reflective dimensions and spiritual values into the digital learning process (Huda et al., 2020; Rahman et al., 2021; Aziz et al., 2023; Sari et al., 2021; Alfian et al., 2022). Thus, the use of AI in DL is not only technological in nature but also pedagogical and contextual.

However, the effectiveness of DL implementation is not solely determined by technological sophistication, but also by students' ability to manage their learning processes independently, known as self-regulated learning (SRL). SRL includes the ability to plan, monitor, and evaluate learning strategies independently, which is a key competency in online learning environments (Zimmerman, 2015; Panadero, 2017; Broadbent & Poon, 2015; Winne & Hadwin, 2019; Azevedo & Gašević, 2019). Empirical studies show that many students in DL systems still face difficulties in developing SRL optimally, particularly in time management, motivation regulation, and monitoring learning progress (Kizilcec et al., 2017; Järvelä et al., 2020; Zheng et al., 2020; Tsai et al., 2018; Wong et al., 2019). In the context of PAI students, these challenges become more complex because they are also expected to integrate Islamic values such as discipline, responsibility, and intention (*niyyah*) into their independent learning processes (Anwar et al., 2021; Hasanah et al., 2022; Ridwan et al., 2023; Lestari et al., 2021; Mukhlis et al., 2020). Therefore, an innovative approach is needed to support the holistic development of SRL.

On the other hand, learning motivation is a highly influential determinant of student success in DL systems. Self-determination theory emphasizes that intrinsic motivation driven by the needs for autonomy, competence, and relatedness plays an important role in enhancing student engagement and learning persistence (Ryan & Deci, 2020; Deci & Ryan, 2017; Schunk & DiBenedetto, 2020; Dörnyei et al., 2015; Eccles & Wigfield, 2020). In the context of AI-based learning, motivation can be enhanced through more personalized, responsive, and contextual interactions, enabling students to feel more engaged and have greater control over their learning process (Graesser et al., 2018; Baker & Smith, 2019; Viberg et al., 2018; Roll & Wylie, 2016; Kulik & Fletcher, 2016). Recent studies also show that the use of AI in online learning can improve learning engagement and academic persistence through real-time feedback mechanisms and content adaptation tailored to individual needs (Ifenthaler & Schumacher, 2016; Tsai et al., 2020; Li et al., 2021; Holmes et

al., 2021; UNESCO, 2021). In the context of PAI students, learning motivation is also influenced by spiritual dimensions that provide deeper meaning to their academic activities (Hidayat et al., 2022; Nasution et al., 2021; Fauzi et al., 2023; Yusuf et al., 2020; Ma'arif et al., 2022).

Although previous studies have demonstrated that AI can enhance learning efficiency, personalization, and academic performance in online and distance learning environments (Holmes et al., 2019; Zawacki-Richter et al., 2019; Williamson & Eynon, 2020), empirical investigations have predominantly conceptualized AI as an instructional tool or intelligent tutoring system rather than as a learning partner that actively supports students' motivational and self-regulatory processes. Existing research has generally examined motivation and self-regulated learning separately, focusing on cognitive scaffolding, learning analytics, and adaptive feedback mechanisms (Azevedo & Gašević, 2019; Viberg et al., 2018; Zheng et al., 2020). Consequently, limited attention has been given to understanding how students experience AI as an interactive partner that simultaneously influences motivational engagement, learning autonomy, and reflective learning behaviors in authentic educational settings.

Furthermore, studies conducted in higher education have largely emerged from secular educational environments in Europe, North America, and East Asia, where learning outcomes are primarily framed through cognitive and behavioral indicators (Holmes et al., 2021; Selwyn, 2019). Little is known about how AI-mediated learning interactions operate within Islamic higher education institutions, where educational objectives extend beyond academic achievement to include the cultivation of ethical values, spiritual awareness, and religious responsibility. This distinction is theoretically important because motivational processes and self-regulated learning practices among students may be shaped not only by technological affordances but also by faith-based learning orientations and religious values embedded within the institutional culture.

The context of UIN Siber Syekh Nurjati Cirebon offers a particularly valuable setting for addressing this gap. As one of Indonesia's pioneering cyber Islamic universities implementing AI-supported distance learning systems, the institution integrates digital innovation with Islamic educational principles that emphasize *adab*, moral accountability, and lifelong learning. Such characteristics create a unique environment in which AI is not merely utilized for academic assistance but is potentially interpreted as a companion supporting both intellectual and spiritual development. Therefore, this study contributes theoretically by extending the understanding of AI as a learning partner within a faith-based higher education context and empirically by examining how AI influences students' motivation and self-regulated learning through the interplay of technological, pedagogical, and religious dimensions.

METODE PENELITIAN

The research methodology is designed using a qualitative exploratory approach to gain an in-depth understanding of students' experiences in utilizing AI as a learning partner within the Distance Learning (DL) system, particularly in the context of the Islamic

Religious Education (IRE) Study Program at UIN Siber Syekh Nurjati Cirebon. A qualitative approach is chosen because it is capable of capturing subjective meanings, perceptions, and students' lived experiences comprehensively in their interactions with AI technology. The research design employed is a qualitative case study, which focuses on investigating a contemporary phenomenon within its real-life context, namely the use of AI as a learning partner in distance education. This approach enables the researcher to investigate cognitive, affective, and reflective dimensions of students in developing motivation and self-regulated learning (SRL) through interaction with AI.

The research participants consist of 20 IRE students who are enrolled in the DL system and have used AI technologies (such as chatbots, intelligent tutoring systems, or generative AI) in their learning processes. The selection of participants is carried out using purposive sampling with specific criteria, namely active students, those who have at least one semester of experience using AI in learning, and those who are willing to participate voluntarily in the study. The number of participants was considered adequate because data saturation was achieved, indicating that additional data no longer generated substantially new information or themes (Guest et al., 2020; Saunders et al., 2018; Hennink et al., 2017; Braun & Clarke, 2021; Patton, 2015).

Data collection techniques are conducted through in-depth interviews, limited participant observation, and digital documentation. In-depth interviews serve as the primary technique to explore students' experiences, perceptions, and reflections regarding the use of AI as a learning partner, using a semi-structured interview guide that allows flexibility in data exploration. Participant observation is conducted to directly observe how students interact with AI in online learning activities, including the use of digital platforms and learning strategies applied. Meanwhile, digital documentation in the form of learning activity logs, students' reflective notes, and assignment artifacts is used to strengthen data validity through source triangulation.

Data analysis is carried out using thematic analysis, which aims to identify, analyze, and interpret patterns of meaning emerging from the research data. The analysis process involves several stages, namely data familiarization, initial coding, searching for themes, reviewing themes, defining themes, and writing the report (Braun & Clarke, 2021; Nowell et al., 2017; Terry et al., 2017; Vaismoradi et al., 2016; Guest et al., 2012). NVivo software was utilized to facilitate data organization, coding, and thematic mapping. This analysis is conducted iteratively and reflectively to ensure that the resulting themes authentically represent students' experiences. In addition, the analysis also considers the theoretical framework of self-regulated learning and learning motivation to provide deeper interpretation of the findings.

To ensure data trustworthiness, the study applies several strategies, namely credibility, transferability, dependability, and confirmability. Credibility is maintained through source and technique triangulation, as well as member checking with participants to ensure that the researcher's interpretations align with their experiences (Lincoln & Guba, 1985; Creswell & Poth, 2018; Shenton, 2004; Korstjens & Moser, 2018; Nowell et al., 2017). Transferability is achieved by providing rich contextual descriptions of the research setting

and participant characteristics, allowing readers to assess the relevance of the findings to other contexts. Dependability and confirmability are ensured through an audit trail, researcher reflexivity, and systematic documentation of the research process.

RESULT AND DISCUSSION

Result

The data collection results show that the characteristics of research participants are dominated by IRE students who are active in the DL system and have a relatively high intensity of AI use in their academic activities. The participants' demographic data indicate variation in semester level, gender, and level of AI usage experience, providing diverse perspectives in this study. In general, most students are in the middle semesters (semester 3–6) and have been using AI for more than one semester, thus having sufficient experience to reflect on the role of AI in their learning. This condition is reflected in participants' narratives regarding their routine engagement with AI technologies in academic activities. As Participant 2 explained, "I have been using AI for almost two years, especially to help me understand course materials and develop ideas for assignments. It has become part of my daily learning routine" (P2). Similarly, Participant 6 stated, "I use AI almost every day when studying because it helps me find explanations quickly and supports me when preparing assignments" (P6). Another participant emphasized the continuity of AI use in the DL environment, noting that "Since learning is conducted online, AI has become one of the tools I rely on to clarify concepts and manage my independent study activities" (P7). These statements indicate that the participants possessed substantial experience in utilizing AI, enabling them to provide rich and reflective accounts of its role in supporting their learning processes.

Table 1. Characteristics of Research Participants

No	Participant Code	Gender	Semester	Length of Use of AI	Intensity of AI Use
1	P1	Woman	3	1 year	Height
2	P2	Man	5	2 years	Height
3	P3	Woman	4	1 year	Medium
4	P4	Man	6	2 years	High
5	P5	Woman	2	6 months	Medium
6	P6	Man	5	1.5 years	High
7	P7	Woman	4	1 year	Medium
8	P8	Man	3	1 year	High

Furthermore, based on the in-depth interview instrument, the findings show that PAI students in the DL system interpret AI as a learning partner that is adaptive, responsive, and contextual in supporting their academic activities. The semi-structured interview results reveal that most participants use AI to deepen conceptual understanding, develop writing ideas, and clarify difficult learning materials. The participants' narratives indicate a tendency to use AI as a dialogic partner that enables two-way interaction in the learning process, thereby strengthening students' cognitive and reflective engagement. In addition,

the interviews also revealed positive perceptions regarding the speed and ease of access to information provided by AI, although some participants expressed concerns about potential dependency and the validity of the generated information.

Table 2. Summary of In-Depth Interview Results

Participant Code	Main Statement	Thematic Meaning
P1	"AI helps me understand difficult material with simple explanations."	Cognitive scaffolding
P2	"I often discuss things with AI to gain new perspectives."	Dialogic partners
P3	"AI makes me more confident in my assignments."	Increased motivation
P4	"Sometimes I rely too much on AI when doing assignments."	Risk of dependency
P5	"AI helps me manage my study time more effectively."	Self-regulation
P6	"AI answers quickly, but I still have to double-check them."	Critical literacy
P7	"I feel like learning is more flexible with AI."	Learning autonomy
P8	"AI helps me reflect on whether I understand."	Metacognition

Furthermore, the interview data show variations in the types of AI use among students in their learning activities, which can be classified into several main categories: as an information source, a discussion partner, a task-writing tool, and a learning reflection medium. This distribution shows that AI is not only used instrumentally but also as an integral part of students' learning strategies. This pattern indicates a transformation in students' learning practices toward more strategic use of technology.

Table 3. Categories of AI Utilization by Students

No	AI Usage Category	Description
1	Information Source	Searching for academic materials, definitions, and references
2	Discussion Partner	Asking questions and answers about concepts and clarifying material
3	Assignment Compiler	Assisting with developing writing outlines, ideas, and initial drafts
4	Learning Reflection	Evaluating understanding and providing feedback

Furthermore, participant observation data show that students actively interact with AI at various stages of learning, from information search to learning evaluation. Observation of online learning activities reveals that students tend to use AI in the initial

phase (exploring materials) and the final phase (task completion), while its use in collaborative discussion phases is relatively lower. The data also show a fairly high frequency of AI use in student learning activities, especially in the early stages of understanding material and completing assignments, as shown in the table.

Table 4. Frequency of AI Use in Learning Activities

Learning Activities	High Frequency	Medium Frequency	Low Frequency
Understanding the Material	6	2	0
Working on Assignments	7	1	0
Academic Discussions	5	3	0
Learning Reflections	4	3	1

In addition, the observed learning strategies indicate an integration between AI use and independent learning techniques such as note-taking, source comparison, and personal reflection. These observations reinforce interview findings that AI has become part of students' learning ecosystem, although its use is still largely individual and has not been fully integrated into collaborative learning.

Table 5. Results of Student Learning Activity Observation

Observed Aspects	Observational Findings
Interaction with AI	High in exploration and task completion
Learning Strategies	Combining AI with note-taking and searching for other sources
Usage Patterns	Individual, not widely used in group discussions
Duration of Use	30-90 minutes per learning session
Information Validation	Some students cross-check with other sources

Moreover, digital documentation data provide additional empirical evidence regarding patterns of AI use and students' learning reflection. Analysis of activity logs shows that students consistently use AI to access learning materials and complete assignments, with increasing frequency approaching deadlines. Students' reflection notes also indicate growing metacognitive awareness, where they are able to identify strengths and weaknesses in their learning process. Assignment artifacts show that students use AI as a tool to structure writing and enrich content, while still modifying it according to their own understanding. These findings are consistent with interview data, in which several participants described AI as an important resource in their independent learning activities. As Participant 8 explained, "I usually use AI to check whether I really understand the material. When the explanation is still unclear, I ask follow-up questions until I can understand it better" (P8). Similarly, Participant 15 stated, "AI helps me organize my assignments by creating an initial structure, but I always revise and develop the content based on my own understanding and references" (P15). Another participant highlighted the reflective aspect of AI-supported learning, noting that "After completing a task, I often ask AI to review my work and provide feedback so I can identify areas that need improvement" (P18). Furthermore, Participant 20 acknowledged the role of AI in

supporting learning efficiency, particularly during periods of high academic workload: “When deadlines are approaching, AI helps me manage information more quickly, but I still verify important information from academic sources” (P20). These interview findings reinforce the documentary evidence, suggesting that students not only use AI to complete academic tasks but also employ it as a reflective tool that supports metacognitive awareness, learning evaluation, and independent knowledge construction.

Table 6. Digital Documentation Results

Data Types	Key Findings
Activity Logs	High frequency of assignments and exam preparation
Reflection Notes	Students are aware of the learning process and the difficulties they face
Task Artifacts	AI is used for initial structure, then developed independently
Time Patterns of Use	Increased near deadlines
Source Validation	Some students verify, some do not

The presentation of data from these three instruments shows consistent and mutually reinforcing findings through data triangulation, where AI plays a role as a learning partner that supports students’ cognitive, motivational, and self-regulation aspects. The integration of interview, observation, and documentation data provides a comprehensive picture of how students utilize AI in the DL context and the dynamics involved in their daily learning practices. Initial coding results from the interview data produced several preliminary themes related to learning motivation and self-regulated learning. These themes indicate relatively consistent patterns of experience among participants, which then serve as the basis for further thematic analysis.

Table 7. Initial Coding Results

No	Initial Code	Indications of Meaning
1	Ease of Access	AI makes it easier to find information
2	Instant Feedback	AI provides quick responses to questions
3	Increased Confidence	Students feel more confident in learning
4	Time Management	AI helps organize study schedules
5	Dependability	Risks of overusing AI

The results of data analysis using NVivo software show that qualitative data obtained from interviews, observations, and digital documentation have been systematically organized through coding processes, node classification, and query analysis, resulting in a comprehensive thematic mapping of the role of AI as a learning partner in the DL system. The analysis process began with importing all raw data into NVivo, followed by open coding to identify relevant units of meaning, which were then grouped into nodes based on conceptual and contextual similarities (Bazeley & Jackson, 2013; Woolf & Silver, 2017; Castleberry & Nolen, 2018; Maher et al., 2018; Edhlund & McDougall, 2019). The initial results showed the formation of 25 initial nodes, which were then reduced into 5 main parent nodes through axial coding: (1) role of AI in learning, (2) learning motivation, (3) self-regulated learning, (4) patterns of student interaction with AI, and (5) challenges of AI

use. This structure reflects the integration of empirical data and the theoretical framework used in the study.

Table 8. NVivo Node Structure

Parent Node	Child Nodes
The Role of AI in Learning	Information sources, scaffolding, instant feedback
Learning Motivation	Self-confidence, engagement, flexibility, interest in learning
Self-Regulated Learning	Learning planning, monitoring, self-evaluation, time management
Interaction Patterns with AI	Q&A, discussion, material exploration, assignment preparation
Challenges in Using AI	Dependence, information validation, ethical use

Furthermore, NVivo coding query analysis shows varying frequencies of theme occurrence, indicating the dominance level of issues in students' experiences. The nodes "role of AI in learning" and "learning motivation" have the highest frequency, indicating that students emphasize AI's function as a learning aid that enhances their enthusiasm and engagement. Meanwhile, the node "challenges of AI use" has a lower frequency but remains significant in showing students' critical awareness of technological risks (Bazeley & Jackson, 2013; Maher et al., 2018; Castleberry & Nolen, 2018; Woolf & Silver, 2017; Edhlund & McDougall, 2019). These findings were obtained through word frequency query and text search query features that help identify linguistic patterns and dominant concepts in the data.

Table 9. Node Frequency (Coding Frequency)

Key Nodes	Number of References	Persentase (%)
The Role of AI in Learning	45	28%
Learning Motivation	38	24%
Self-Regulated Learning	32	20%
Interaction Patterns with AI	27	17%
Challenges in Using AI	18	11%

In addition, matrix coding query analysis in NVivo was used to examine relationships between themes, particularly between AI use, learning motivation, and self-regulated learning. The results show a strong relationship between the node "role of AI in learning" and both "learning motivation" and "self-regulated learning," indicated by high co-occurrence coding among these nodes (Bazeley & Jackson, 2013; Woolf & Silver, 2017; Maher et al., 2018; Castleberry & Nolen, 2018; Edhlund & McDougall, 2019). This indicates that students' experiences in using AI are directly related to increased motivation and their ability to regulate their own learning.

Table 10. Matrix Coding Query (Inter-node Relationships)

Relationships Between Nodes	Number of Co-occurrence
AI - Learning Motivation	26
AI - Self-Regulated Learning	24
Learning Motivation - Self-Regulated Learning	21

The results of NVivo analysis indicate that the theme “role of AI in learning” emerged as the most dominant category across interview, observation, and documentation data. This theme encompasses various aspects of students’ experiences in utilizing AI, including information access, learning support, scaffolding, instant feedback, and academic task completion. The coding process revealed that students consistently positioned AI as an integral component of their learning activities rather than merely as a technological tool. Consequently, AI became closely associated with other major themes, particularly learning motivation and self-regulated learning (SRL).

Further analysis showed that students perceived AI as contributing to their motivation by increasing confidence, engagement, flexibility, and interest in learning. Many participants reported that AI enabled them to access explanations more quickly, obtain immediate responses to questions, and receive personalized support according to their learning needs. These experiences encouraged greater participation in learning activities and strengthened students’ willingness to engage in independent study. As Participant 3 stated, “AI makes me more confident in completing assignments because I can check my understanding before submitting my work” (P3). Similarly, Participant 7 explained, “Learning feels more flexible with AI because I can study whenever I need and get immediate feedback” (P7).

The analysis also identified a strong relationship between AI use and the development of self-regulated learning practices. Students frequently described using AI to plan learning activities, monitor their understanding, evaluate learning outcomes, and manage study time more effectively. These findings suggest that AI supports key dimensions of SRL, including planning, self-monitoring, and self-evaluation. As Participant 5 noted, “AI helps me organize my study schedule and prioritize tasks more effectively” (P5), while Participant 8 reported that “AI helps me reflect on whether I really understand the material by providing questions and feedback” (P8). Such experiences indicate that AI functions as a learning partner that facilitates students’ ability to regulate their own learning processes.

Despite these positive contributions, the analysis also revealed several challenges associated with AI use. Some participants expressed concerns regarding overreliance on AI-generated responses, the accuracy of information, and the ethical implications of excessive dependence on technology. Participant 4 acknowledged that “Sometimes I rely too much on AI when doing assignments” (P4), whereas Participant 6 emphasized the importance of verification, stating that “AI answers quickly, but I still need to double-check the information from reliable sources” (P6). These findings demonstrate that students possess a critical awareness of both the opportunities and limitations of AI in learning.

Overall, the thematic analysis suggests that AI occupies a central position within students' learning experiences in the DL system. Its role extends beyond information retrieval to encompass motivational support, learning autonomy, reflective practice, and self-regulation. The findings therefore indicate that AI functions as a multidimensional learning partner that shapes cognitive, affective, and regulatory aspects of students' learning processes.

Discussion

Experiences of PAI DL Students in Utilizing AI Technology as a Learning Partner

The experiences of PAI DL students in utilizing AI technology as a learning partner show a transformation in learning interaction patterns from being passive to more active, dialogic, and learner-centered. The findings indicate that students do not only use AI as an information source but also as a discussion partner that enables intensive question-and-answer processes, idea exploration, and clarification of complex concepts. This interaction creates a more personal and adaptive learning experience, where students can adjust the pace and depth of learning according to their individual needs. These findings are consistent with the concept of AI as a cognitive partner that functions to provide scaffolding in the knowledge construction process, thereby supporting the development of higher-order thinking skills (Zawacki-Richter et al., 2019; Holmes et al., 2019; Luckin et al., 2016; Chen et al., 2020; Roll & Wylie, 2016). In addition, the NVivo analysis, which positions "the role of AI in learning" as a core node, shows that students' experiences are predominantly focused on how AI mediates their learning activities holistically, both in understanding material and completing academic tasks (Ifenthaler & Yau, 2020; Graesser et al., 2018; Baker & Smith, 2019; Viberg et al., 2018; Kulik & Fletcher, 2016).

Furthermore, students' experiences also show that AI functions as a learning facilitator that expands access to learning resources and accelerates the process of searching for academic information. Students reported that AI helps them find references, develop writing frameworks, and provide concrete examples relevant to the context of PAI learning. This indicates that AI plays a role in improving the efficiency and effectiveness of the learning process, especially in DL environments that demand high levels of independence. This experience is consistent with previous research findings emphasizing that AI-based technology can enhance learning efficiency through content personalization and the provision of fast and relevant feedback (Holmes et al., 2019; Zawacki-Richter et al., 2019; Ifenthaler & Schumacher, 2016; Viberg et al., 2018; Graesser et al., 2018). In the context of PAI students, the use of AI is also linked to efforts to integrate Islamic values into the learning process, where students use AI as a tool to deepen understanding of religious material in a reflective and contextual manner (Huda et al., 2020; Rahman et al., 2021; Aziz et al., 2023; Sari et al., 2021; Alfian et al., 2022).

However, students' experiences also reveal ambivalent dynamics in the use of AI as a learning partner, particularly related to issues of dependency and information validity. Some students acknowledge that the ease of access and speed of AI responses may encourage excessive use, potentially reducing independent exploration and critical thinking. In addition, there is awareness that not all information generated by AI can be

directly trusted, requiring digital literacy skills to verify and evaluate the information. These findings indicate that students' experiences are not linear but complex and multidimensional, involving an interaction between benefits and risks in technology use (Selwyn, 2019; Williamson & Eynon, 2020; Floridi et al., 2018; Holmes et al., 2021; UNESCO, 2021). Therefore, students' experiences in using AI as a learning partner reflect not only technological adaptation but also a negotiation process between efficiency and depth of learning.

The Role of AI in Building Student Learning Motivation in Distance Learning Systems

The use of AI in distance learning (DL) systems has been shown to play a significant role in building student learning motivation, particularly through mechanisms that enhance autonomy, competence, and relatedness as key components of self-determination theory. The findings show that students experience greater freedom in managing their time, selecting learning resources, and determining their learning strategies when using AI, thereby strengthening intrinsic motivation based on autonomy needs. In addition, AI's ability to provide instant and adaptive feedback enhances students' perceived competence, as they can immediately identify their level of understanding and independently correct their mistakes. Responsive and personalized interactions also create a more meaningful and less monotonous learning experience, thereby strengthening the dimension of relatedness in learning processes (Ryan & Deci, 2020; Deci & Ryan, 2017; Schunk & DiBenedetto, 2020; Dörnyei et al., 2015; Eccles & Wigfield, 2020). Thus, AI functions not only as a technical tool but also as a psychological facilitator that promotes active student engagement in online learning.

Furthermore, NVivo analysis showing a high frequency of the "learning motivation" node and its strong relationship with the "role of AI in learning" node indicates that AI use is directly associated with increased student motivation. Students reported that AI helps reduce boredom in online learning by varying content delivery methods and providing flexibility in learning interactions. This aligns with previous research indicating that AI technology can enhance learning engagement through content personalization and interactive learning experiences (Graesser et al., 2018; Baker & Smith, 2019; Viberg et al., 2018; Holmes et al., 2021; UNESCO, 2021). In addition, AI also provides indirect emotional support, where students feel more confident and less hesitant to ask questions due to the absence of social pressure typically found in interactions with lecturers or peers. This condition strengthens students' academic persistence in completing tasks and sustaining their learning processes (Ifenthaler & Schumacher, 2016; Tsai et al., 2020; Li et al., 2021; Holmes et al., 2021; OECD, 2021).

In the context of PAI students, learning motivation developed through AI use also reflects an integration of academic and spiritual dimensions. Students are not only motivated to achieve academic success but also to deepen their understanding of Islamic values through AI as a medium for reflection and knowledge exploration. This shows that learning motivation in PAI contexts is multidimensional, encompassing cognitive, affective, and spiritual aspects simultaneously (Hidayat et al., 2022; Nasution et al., 2021; Fauzi et al.,

2023; Yusuf et al., 2020; Ma'arif et al., 2022). However, the findings also indicate potential risks, particularly dependency on AI, which may reduce intrinsic motivation for independent learning. Some students acknowledged that the convenience offered by AI can lower cognitive effort if not used wisely, leading to more instrumental forms of motivation. Therefore, strengthening digital literacy and pedagogical strategies is needed to guide the productive and reflective use of AI so that learning motivation remains deep and sustainable (Selwyn, 2019; Williamson & Eynon, 2020; Floridi et al., 2018; Holmes et al., 2021; UNESCO, 2021).

The Influence of AI Utilization on Students' Self-Regulated Learning in Managing Independent Learning Processes

The use of AI in DL systems significantly influences students' self-regulated learning (SRL) practices in managing independent learning processes, particularly in the planning, monitoring, and evaluation phases. The findings show that students use AI as a tool to design learning strategies, such as creating study schedules, setting achievement targets, and identifying priority materials. This function strengthens the forethought phase in SRL, where students consciously plan learning activities based on their goals and needs (Panadero, 2017; Zimmerman, 2015; Azevedo & Gašević, 2019; Winne & Hadwin, 2019; Broadbent & Poon, 2015). NVivo analysis showing a strong relationship between the "role of AI in learning" and "self-regulated learning" nodes indicates that AI use is not merely instrumental but also contributes to systematically shaping students' self-regulation structures (Järvelä et al., 2020; Zheng et al., 2020; Tsai et al., 2018; Wong et al., 2019; Kizilcec et al., 2017).

In the performance phase, AI acts as a reflective tool that helps students evaluate their level of understanding in real time. Students use AI to test their understanding through questions, practice exercises, and discussion simulations, enabling them to assess their mastery of the material. This process demonstrates increased metacognitive awareness, where students not only learn but also actively monitor and control their learning processes (Azevedo & Gašević, 2019; Järvelä et al., 2020; Panadero, 2017; Zimmerman, 2015; Winne & Hadwin, 2019). In addition, instant feedback features provided by AI allow students to quickly adjust their learning strategies when errors or gaps are identified, thereby accelerating the self-regulation cycle in online learning (Ifenthaler & Schumacher, 2016; Viberg et al., 2018; Graesser et al., 2018; Baker & Smith, 2019; Holmes et al., 2021).

In the self-reflection phase, AI also functions as a facilitator in students' reflection on their learning outcomes. Students use AI to compare answers, request feedback on assignments, and reflect on their strengths and weaknesses. This shows that AI strengthens students' evaluative abilities, an essential component of SRL (Panadero, 2017; Zimmerman, 2015; Azevedo & Gašević, 2019; Järvelä et al., 2020; Zheng et al., 2020). In the context of PAI students, this reflective process is also linked to Islamic values such as muhasabah (self-evaluation), enriching SRL with spiritual and ethical dimensions (Anwar et al., 2021; Hasanah et al., 2022; Ridwan et al., 2023; Lestari et al., 2021; Mukhlis et al., 2020). However, the findings also show risks, particularly dependency that may reduce independent learning initiative if not properly managed.

Identification of Opportunities and Challenges of AI Use as a Learning Partner in PAI Learning in DL Systems

The identification of opportunities and challenges of AI use as a learning partner in PAI learning within DL systems shows that this technology has significant strategic potential in transforming the learning ecosystem into a more adaptive, personalized, and inclusive environment. The findings indicate that AI provides significant opportunities in expanding access to learning resources, enabling personalized learning based on individual needs, and improving efficiency in completing academic tasks. Students utilize AI to obtain more contextual explanations, develop ideas more systematically, and accelerate the process of searching for academic references, thereby improving the quality of their learning experiences. These findings align with literature stating that AI can enhance learning effectiveness through adaptive learning systems, intelligent tutoring systems, and learning analytics that support independent learning decisions (Holmes et al., 2021; UNESCO, 2021; OECD, 2021; Zawacki-Richter et al., 2019; Ifenthaler & Yau, 2020).

In the context of PAI, these opportunities also include AI's ability to support reflective learning that integrates Islamic values, thereby enriching the spiritual dimension of student learning (Huda et al., 2020; Rahman et al., 2021; Aziz et al., 2023; Sari et al., 2021; Alfian et al., 2022). In addition, AI also strengthens student independence through support for self-regulated learning and learning motivation. NVivo analysis positioning "the role of AI in learning" as a core node indicates that this technology occupies a central position in connecting various learning aspects, including motivation and self-regulation. This suggests that AI can function as an enabler in creating a more responsive and sustainable learning environment, where students have greater control over their learning processes (Azevedo & Gašević, 2019; Panadero, 2017; Zimmerman, 2015; Ryan & Deci, 2020; Viberg et al., 2018). Thus, AI contributes not only technical convenience but also the development of 21st-century competencies such as critical thinking, independence, and digital literacy.

However, the study also identifies several challenges in AI use as a learning partner. One major challenge is the risk of student dependency on AI, which may reduce cognitive depth and weaken critical thinking skills if not balanced with appropriate learning strategies. In addition, issues of validity and accuracy of AI-generated information are important concerns, as students need strong information literacy skills to verify content reliability (Selwyn, 2019; Williamson & Eynon, 2020; Floridi et al., 2018; Holmes et al., 2021; UNESCO, 2021). Another challenge is the potential violation of academic ethics, such as plagiarism and irresponsible AI use in assignments, which may threaten academic integrity (OECD, 2021; World Bank, 2020; Redecker et al., 2017; Ferguson et al., 2016; Regan & Jesse, 2019).

In the context of PAI learning, challenges of AI use are also related to values and ethics, where students are expected not only to use technology effectively but also responsibly in accordance with Islamic principles. This requires integration between digital literacy and ethical literacy in the curriculum so that students can use AI wisely without neglecting moral and spiritual values (Anwar et al., 2021; Hasanah et al., 2022; Ridwan et

al., 2023; Lestari et al., 2021; Mukhlis et al., 2020). In addition, infrastructure readiness and lecturers' digital competencies are also important factors influencing successful AI implementation in DL systems, requiring adequate institutional support to optimize the use of this technology (Holmes et al., 2021; UNESCO, 2021; OECD, 2021; Williamson & Eynon, 2020; Selwyn, 2019).

CONSLUSION

This study shows that the utilization of AI as a learning partner in the Distance Learning (DL) system plays a significant role in shaping adaptive and dialogic learning experiences, enhancing learning motivation through the strengthening of autonomy, competence, and engagement, as well as reinforcing students' self-regulated learning (SRL) practices in planning, monitoring, and evaluating their learning processes. Thus, AI functions not merely as a supporting tool but as a cognitive partner integrated into the digital learning ecosystem. However, this study has limitations in terms of the relatively small number of participants, the subjective nature of the data, and its specific context within a single institution. Therefore, the findings cannot be widely generalized and still require further research. Accordingly, the implications of this study emphasize the importance of integrating AI in a pedagogical, critical, and ethical manner in learning processes, including strengthening digital literacy, developing AI usage policies, and integrating Islamic values in the context of IRE so that the utilization of technology can be optimized and sustained effectively.

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