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The Impact of Artificial Intelligence on Students' Learning Motivation in the Digital Era

Dampak Kecerdasan Buatan terhadap Motivasi Belajar Mahasiswa di Era Digital

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Abstrak

Penggunaan kecerdasan buatan (AI) dalam pendidikan tinggi telah meningkat seiring dengan kemajuan teknologi digital. Mahasiswa memanfaatkan berbagai aplikasi AI, termasuk ChatGPT, Google Gemini, dan Grammarly, untuk menguasai materi kuliah, menyelesaikan tugas akademik, dan meningkatkan kualitas penulisan akademik. Studi ini bertujuan untuk mengevaluasi bagaimana mahasiswa menggunakan AI dan dampaknya terhadap motivasi belajar di era digital. Pendekatan penelitian menggunakan metode deskriptif kualitatif melalui tinjauan pustaka, meneliti artikel jurnal, laporan penelitian, dan materi ilmiah terkait yang diterbitkan selama lima tahun terakhir. Teknik pengolahan data meliputi penyederhanaan data, penyajian data, dan inferensi. Temuan studi menunjukkan bahwa penggunaan AI menghasilkan efek positif, seperti peningkatan efisiensi belajar, pemahaman materi, otonomi, dan motivasi belajar mahasiswa. Namun, penerapan AI yang tidak terkontrol juga dapat memicu dampak negatif, seperti kecanduan yang berlebihan, penurunan motivasi internal, dan risiko pelanggaran etika akademik. Oleh karena itu, studi ini menekankan perlunya literasi digital, kesadaran etika, dan integrasi pedagogis AI agar teknologi tersebut dapat mempertahankan motivasi belajar mahasiswa secara maksimal dan berkelanjutan.

Kata Kunci : Artificial Intelligence, Motivasi Belajar, Teknologi Pendidikan

Abstract

The use of artificial intelligence (AI) in higher education has increased with the advancement of digital technology. Students utilize various AI applications, including ChatGPT, Google Gemini, and Grammarly, to master course material, complete academic assignments, and improve the quality of academic writing. This study aims to evaluate how students use AI and its impact on learning motivation in the digital era. The research approach uses a qualitative descriptive method through a literature review, examining journal articles, research reports, and related scientific materials published over the past five years. Data processing techniques include data simplification, data presentation, and inference. The study findings indicate that the use of AI produces positive effects, such as increased learning efficiency, material understanding, autonomy, and student learning motivation. However, uncontrolled application of AI can also trigger negative impacts, such as excessive addiction, decreased internal motivation, and the risk of violating academic ethics. Therefore, this study emphasizes the need for digital literacy, ethical awareness, and

pedagogical integration of AI so that the technology can maintain student learning motivation optimally and sustainably.

Keywords : Artificial Intelligence, Learning Motivation, Educational Technology

INTRODUCTION

Advances in artificial intelligence (AI) technology in education have brought significant changes to the way students learn. Tools such as ChatGPT and Google Gemini contribute to facilitating the understanding of difficult material through personalized interactions and tailored explanations. Research shows that the application of AI, including adaptive learning, chatbots, and AI-based platforms, can impact student motivation and engagement in the learning process. (Badarudin et al., 2024). However, the transition to the digital era also raises concerns about academic integrity and decreased learning motivation if technology is not used carefully. (Nurfauziah et al., 2025).

Several previous studies have shown that artificial intelligence (AI) can improve students' conceptual understanding and motivation. For example, research investigating the role of AI in developing learning competencies and motivation found that tools such as ChatGPT and Copilot provide a more individualized learning experience, thereby helping to increase student motivation and engagement (Suryawijaya et al., 2025). Furthermore, other studies combining qualitative and quantitative methods have revealed that integrating AI into learning can strengthen learning motivation through tailored feedback and relevant experiences. (Dewi Ayu Rohana et al., 2024)

Conversely, some studies also emphasize that excessive use of AI can have negative effects. For example, results from a literature review indicate that the use of AI without adequate guidance can reduce students' intrinsic motivation due to a tendency to rely on quick answers rather than independent thinking (Badarudin et al., 2024). Additional risks include difficulties in developing effective learning strategies when AI automates a significant portion of academic tasks. (Nurfauziah et al., 2025)

However, these studies have not comprehensively examined the direct relationship between how students use AI and changes in learning motivation, particularly in the context of higher education in Indonesia. For example, there has been no comprehensive analysis assessing how AI experiences relate to students' intrinsic and extrinsic motivation in real-life academic settings.

Building on the previous studies described, this study aims to examine the forms of AI use by students, identify their positive and negative impacts, and assess their influence on learning motivation. This study will also design appropriate strategies for AI use that align with the principles of academic integrity and student learning independence. The study argues that AI has a direct impact on student learning motivation, both positive and negative, depending on the method of use and the learning context. The research's contributions include providing new insights for developing theories of learning motivation in the digital age, as well as practical

recommendations for lecturers, students, and educational institutions to foster a culture of ethical and beneficial AI use.

RESEARCH METHODS

This study employs a qualitative descriptive approach using library research. The purpose of this qualitative descriptive approach is to provide an in-depth description of the phenomenon of students' application of artificial intelligence (AI) in their learning activities and its impact on learning motivation. This approach is conducted through an examination of relevant literature to describe AI usage patterns, positive and negative effects, and consequences for the learning process.

The type of research applied is library research. Library research was chosen because this study relies on scientific materials such as national and international journal articles, proceedings, research reports, books, and academic documents discussing AI in higher education environments. This method was implemented by identifying, reading, selecting, and analyzing library materials published between 2019 and 2024 related to the topic.

Research data sources were obtained from journal articles, university repositories, open-access journal websites, research reports, e-books, and other scientific publications. The data collection process was conducted through searches in databases such as Google Scholar, SINTA, Garuda, and university journal portals. Each piece of material found was then evaluated using a literature review technique that involved determining themes, assessing content relevance, and matching them to the research focus.

Data analysis was conducted using qualitative descriptive techniques. The analysis process included: (1) data reduction, namely selecting relevant literature; (2) presenting the data in the form of thematic descriptions of student AI use, its impacts, and related motivations; and (3) drawing conclusions based on patterns of findings from various sources. This technique ensured that research results were presented in a structured, coherent, and academically accountable manner.

RESULTS AND DISCUSSION

Forms of AI Utilization by Students

Based on a review of relevant and freely available national journals, the use of Artificial Intelligence (AI), particularly ChatGPT and similar technologies, has emerged as a rapidly growing trend among universities in Indonesia. Students use ChatGPT to help them master course content, complete academic assignments, and enhance independent learning. AI acts as a responsive and adaptive alternative learning resource, enabling students to overcome learning barriers more effectively. (Prambudi & Sinaga, 2025)

Similar findings were presented by (Aisyah, 2022), who explained that the application of artificial intelligence technology can improve the efficiency of students' learning processes by adapting material and providing immediate responses. Thus, students are no longer dependent on

traditional learning approaches but are able to tailor learning methods to their individual preferences and patterns.

Furthermore, research by (Laily Fitria et al., 2024) shows that the integration of AI in Indonesian language teaching contributes to increased innovation and literacy skills among students. AI supports students in expanding their vocabulary, understanding grammar, and developing diverse writing styles. This confirms that AI is not merely a technical tool but also a platform for building academic skills.

This discussion reveals that the use of Artificial Intelligence (AI), specifically ChatGPT, has significantly contributed to increasing the efficiency and flexibility of student learning processes at Indonesian universities. AI acts as a customizable learning resource, fostering material understanding, fostering learning autonomy, and enhancing academic literacy and innovation. However, this success is largely determined by its implementation method. Without adequate pedagogical control and digital literacy, the use of AI can shift learning from a focus on deep thinking to a focus solely on quick results. Therefore, AI must be carefully integrated as a supporting tool that enhances, rather than replaces, students' intellectual functioning.

The Impact of AI on Student Learning Motivation

The application of Artificial Intelligence (AI) technology in the learning process has been shown to have a significant positive impact on student learning motivation. The use of AI facilitates students' access to more diverse and faster learning resources, thus facilitating their understanding of course material. Furthermore, AI can provide immediate and interactive responses, enabling students to detect errors and improve their understanding independently. This study also revealed that AI creates a more individualized learning experience because it can tailor material delivery to each student's needs and abilities. This ultimately encourages increased student interest, participation, and enthusiasm in learning activities. Therefore, the integration of AI technology serves not only as a technical support tool but also as a psychological element that contributes to increased student learning motivation in higher education environments. (Purba et al., 2025)

Other research shows that Artificial Intelligence (AI) functions as an efficient learning support tool. AI applications have a substantial positive impact on student learning motivation. AI facilitates rapid access to data, provides immediate responses, and allows for the customization of learning processes based on individual preferences. (Tasya et al., 2025)

The use of AI applications such as ChatGPT, Copilot, and Gemini can improve students' understanding of complex topics and encourage independent learning. AI is considered an adaptive and responsive learning partner, particularly in helping students develop academic work and master abstract ideas. (Suryawijaya et al., 2025)

Furthermore, (Widodo et al., 2024) state that AI contributes to creating a more individualized learning experience by evaluating student learning patterns. This approach makes students feel more integrated in learning activities, ultimately increasing their motivation and participation in academics.

This discussion demonstrates that the implementation of Artificial Intelligence (AI) has a significant positive impact on student learning motivation, particularly through easy access to information, rapid and interactive responses, and the ability to personalize learning. AI functions not only as a technical tool but also as a psychological element that encourages increased student interest, participation, and enthusiasm in learning activities. However, this increased motivation depends heavily on how AI is integrated into the learning process. AI is optimal when used as a flexible learning partner that encourages independent learning, not as a substitute for student reflection and active engagement. Therefore, the use of AI should be pedagogically oriented to strengthen students' intrinsic motivation while maintaining the standards of the academic process.

Challenges and Negative Impacts of AI Utilization

Students demonstrated a positive attitude toward the use of ChatGPT as a learning aid. The adoption of ChatGPT in academic settings is influenced by various factors, including ease of use, perceived benefits, motivation, and the availability of campus facilities. This study's findings reinforce the role of artificial intelligence as an educational tool, not only facilitating access to information but also building student confidence in completing academic assignments and independent learning. Furthermore, these findings pave the way for developing guidelines for more efficient AI utilization in higher education settings. (Ingridina et al., 2024)

Other research reveals that Generation Z faces various moral challenges in the use of artificial intelligence (AI), in line with the high frequency of daily digital technology use. Key challenges include privacy and personal data protection issues, algorithmic bias and unfairness, and the spread of misinformation online. AI's reliance on processing large amounts of data makes Generation Z vulnerable to data misuse and privacy violations. Furthermore, AI algorithms trained with non-neutral data have the potential to produce discriminatory decisions in various fields, such as education and the workplace, raising ethical issues surrounding fairness and inclusivity.

Beyond ethical aspects, this study also emphasizes the social and economic impacts of AI, particularly through the automation of the workforce. The integration of AI and automation can reduce job opportunities for new workers, including Generation Z entering the job market, and intensify competition in high-skilled jobs. At the same time, advances in AI increase the risk of manipulation through digital channels, such as the spread of false information and difficult-to-detect deepfake technology. Therefore, this study emphasizes the need to improve digital literacy, ethical awareness, and develop critical and adaptive skills so that Generation Z can use AI responsibly and safely in an era of rapid digital transformation. (Syifa Chairunnisa & Fadhilla Amaniar, 2025)

From an ethical perspective, it is crucial to ensure that the application of AI in education is fair and inclusive. Issues regarding equal access arise, particularly for students from economically disadvantaged backgrounds who may face challenges in accessing AI technology. Furthermore, consideration should also be given to potential risks to student privacy and data security when using AI applications. Ethical aspects such as academic integrity need to be considered to prevent plagiarism or reduce student engagement in the learning process. Institutions need to develop clear

policies to protect student personal data and ensure that AI is used to support, not replace, human-centered learning processes. Careful and planned integration of AI is needed to ensure that this technology enhances education overall without causing unintended negative consequences. (Sappaile et al., 2024)

CONCLUSION

This study aimed to investigate how students utilize artificial intelligence (AI) and its impact on learning motivation in the context of the digital age. From the literature analysis, it can be concluded that students use AI as an alternative learning resource, as an aid in completing assignments, and as a tool to improve the quality of academic writing. The main findings of the study revealed that the implementation of AI has positive effects, including increased learning efficiency, material comprehension, independence, and student learning motivation. However, this study also identified negative impacts, such as the risk of over-reliance, decreased intrinsic motivation, and potential violations of academic ethics if AI is used without adequate supervision and digital literacy.

From a theoretical perspective, the findings of this study support the theory of learning motivation, which highlights the important role of the environment and technology as determinants of students' external motivation in the digital age. AI serves as a trigger capable of increasing learning motivation when integrated with an appropriate pedagogical approach. From a practical perspective, this study contributes through suggestions for lecturers, students, and educational institutions in formulating policies, ethical guidelines, and AI-based learning strategies aimed at strengthening academic independence and integrity.

Further research is recommended to employ empirical methods, both quantitative and mixed-method, to directly measure the relationship between the frequency of AI use and students' levels of learning motivation. Furthermore, future studies could focus on variations in the impact of AI based on students' field of study, educational level, and personal characteristics.

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