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Evaluation of the Use of Artificial Intelligence in Teaching Learning Evaluation Courses

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Abstract

This study aims to evaluate the use of Artificial Intelligence (AI) in teaching the Learning Evaluation course for students. By utilizing AI technology, such as chatbots, learning recommendation systems, and data analysis tools, teaching this course is expected to increase the effectiveness, efficiency, and engagement of students in the learning process. The study used a descriptive quantitative approach with a questionnaire-based survey on 37 5th semester students of UIN Syarif Hidayatullah Jakarta. The results showed that AI supported material understanding by up to 85%, increased the average exam score by 15%, and increased student engagement by up to 78%. However, challenges such as technical gaps and adaptation to new technologies remain obstacles, experienced by 30% of respondents. The level of student satisfaction with AI-based learning is in the high category (4-5 out of a maximum score of 5). This study provides important implications for the development of technology-based teaching methods in the field of education, with recommendations for strengthening technology infrastructure and technology adaptation training for lecturers and students.

Keywords: Artificial Intelligence, Learning Evaluation, Indonesian Language and Literature Education, AI-Based Teaching, Educational Technology

Abstrak

Penelitian ini bertujuan untuk mengevaluasi penggunaan Artificial Intelligence (AI) dalam pengajaran mata kuliah Evaluasi Pembelajaran bagi mahasiswa. Dengan memanfaatkan teknologi AI, seperti chatbot, sistem rekomendasi pembelajaran, dan alat analisis data, pengajaran mata kuliah ini diharapkan dapat meningkatkan efektivitas, efisiensi, dan keterlibatan mahasiswa dalam proses belajar. Penelitian menggunakan pendekatan kuantitatif deskriptif dengan survei berbasis kuesioner pada 37 mahasiswa semester 5 UIN Syarif Hidayatullah Jakarta. Hasil menunjukkan bahwa AI mendukung pemahaman materi hingga 85%, meningkatkan nilai rata-rata ujian sebesar 15%, serta meningkatkan keterlibatan mahasiswa hingga 78%. Namun, tantangan seperti kesenjangan teknis dan adaptasi terhadap teknologi baru tetap menjadi hambatan, dialami oleh 30% responden. Tingkat kepuasan mahasiswa terhadap pembelajaran berbasis AI berada pada kategori tinggi (4-5 dari skor maksimal 5). Penelitian ini memberikan implikasi penting bagi pengembangan metode pengajaran berbasis teknologi di bidang pendidikan, dengan rekomendasi penguatan infrastruktur teknologi dan pelatihan adaptasi teknologi bagi dosen dan mahasiswa.

Kata Kunci: Artificial Intelligence, Evaluasi Pembelajaran, Pendidikan Bahasa dan Sastra Indonesia, Pengajaran Berbasis AI, Teknologi Pendidikan

Introduction

The world of education is inseparable from how to improve student learning outcomes. This continues so that the next generation can grow and be competitive. Education is one of the important things and plays a role in human life. Education teaches humans to know and utilize resources optimally so that they are able to survive (Tohir, 2020). Education is a process

of intellectual transformation that aims to form individuals with critical and adaptive thinking skills. Through this approach, students are prepared to face the complex and ever-changing dynamics of modern life, equipped with theoretical skills and mental toughness (Mulkan, 1993). Education is a systematic effort to develop the intellectual potential of learners, equipping them with the conceptual skills and mental resilience needed to navigate the complexities and changes in contemporary life (Pidarta, 2000). Education is a fundamental process that allows humans to explore the truth, develop critical thinking skills, and actualize themselves in a social context. Through education, individuals can optimize physical and psychological potential, hone intellectual intelligence, and control subconscious drives to achieve balance and holistic self-growth (Nizar, 2008).

Education requires substantial innovation that can be achieved through the use of AI, especially in facing the challenges of the industrial revolution 4.0, with the aim of producing creative, innovative, and competitive individuals in the global arena. By optimizing technology as a means of education, we can design a responsive learning system, capable of producing graduates who not only follow the times, but also have the ability to produce change and improve the dynamics of socio-technology that continue to develop. Artificial Intelligence (AI) is an innovative technology from the Industrial Society 4.0 era that combines computer programs, machine learning, and hardware-software. Developed by imitating the work of human brain neutrons, AI has penetrated various industries, including education, to support various practical needs in modern life (Coal, 2020). Artificial Intelligence (AI) is a field of advanced computer technology that focuses on designing intelligent systems and machines that are capable of performing complex tasks like human thinking. This technology seeks to create algorithms and programs that can think, learn, and solve problems independently, going beyond the limits of conventional computing capabilities.(John & Rapsanjani, 2024). Artificial Intelligence (AI) is now developing rapidly, providing significant transformations in various areas of human life, from health, agriculture, to education. The integration of artificial intelligence and human intelligence opens up new opportunities to optimize individual potential and achieve maximum results (Harahap, 2019).

The traditional, uniform education system often ignores the diversity of students' learning styles. AI is an innovative solution for personalized learning, able to analyze individual learning patterns and adjust learning methods to suit students' unique needs. This approach has the potential to significantly increase learning effectiveness and motivation (Widodo et al., 2024). The relationship between students and AI encompasses three critical aspects: first, the influence of AI on motivation and learning processes through interactive access to materials and instant feedback. Second, the importance of considering ethical implications such as data privacy, fairness of access, and understanding the limits of technology. Finally, the strategic role of AI in preparing students for an increasingly automated workforce, with the need to develop relevant technological skills. In-depth research on these interactions can provide guidance for adaptive learning approaches and equip students for the digital age (Muarif et al., 2022).

In the context of learning evaluation in the digital era, Artificial Intelligence (AI) has presented significant breakthroughs, especially in academic environments such as the Indonesian Language and Literature Education Department. AI enables a more comprehensive and objective assessment system, capable of analyzing students' abilities in linguistic and literary aspects in depth. Through sophisticated algorithms, AI can evaluate academic writing, identify linguistic structures, assess creativity in literary writing, and provide personalized and detailed feedback. This system not only assesses the final results, but is also able to track the development of students' abilities throughout the lecture, helping lecturers design more adaptive and measurable learning strategies according to the individual needs of each student.

Analysis of the use of Artificial Intelligence (AI) in the Learning Evaluation course has become an urgent critical study in the current era of digital transformation. This study aims to explore the potential of AI as an innovative evaluative instrument, which is able to transform the traditional assessment paradigm into a more objective, comprehensive, and personal competency measurement system. Through this approach, the study intends to identify the possibility of integrating AI in designing evaluation instruments that are able to analyze language and literature skills in depth, track individual student development, and provide precise and constructive feedback. This study does not only assess technology, but also examines the pedagogical, ethical, and methodological implications in the context of language and literature education, with the hope of providing theoretical and practical contributions to the development of more adaptive and quality learning evaluation models in higher education.

Similar research has been conducted by previous researchers, such as research conducted by Muhammad Umar Wibowo and Riva Lesta Ariany (2024) which discusses the impact of artificial intelligence (AI) in the assessment and evaluation of student learning outcomes, highlights that the application of AI can improve the efficiency and effectiveness of the assessment process. AI helps teachers in collecting and analyzing student learning outcome data automatically, thereby reducing the workload of teachers and allowing them to focus on better teaching methods. In addition, the use of AI in education can encourage students to learn independently and actively, creating a learning environment that is more interactive and responsive to individual student needs. However, the article also notes the challenges faced in implementing AI, including the potential for errors in assessment and the need for adjustments in traditional educational approaches.

Another study was also conducted by Mubarik et al (2024) whose research results show that the training given to teachers of SMP Negeri 3 Sirenja has succeeded in increasing their understanding of the use of AI technology in learning. Through two stages of training, namely the presentation of materials and mentoring in creating AI-based learning media projects, teachers are able to design and use AI technology effectively in their teaching. The evaluation shows that participants not only gain additional knowledge, but can also apply practical skills in creating learning media that are appropriate to their respective fields, although there are still challenges in mastering technology and infrastructure in schools.

Based on previous research found, the novelty of this research article lies in the specific focus that distinguishes it from previous research, namely examining the implementation of AI in the context of higher education, especially in the Indonesian Language and Literature Education Study Program, with an emphasis on the Learning Evaluation course. Unlike previous research by Muhammad Umar Wibowo and Riva Lesta Ariany (2024) and Mubarik, et al. (2024) which focused more on the high school level and the general impact of AI in education, this article is expected to provide an in-depth evaluation of the use of AI, producing unique insights regarding the challenges and opportunities for implementing artificial intelligence technology in teaching learning evaluation in higher education. Through a comprehensive approach, this research has the potential to produce a practical model or recommendation that can make a significant contribution to understanding the integration of AI in higher education, with a particular focus on how AI can improve the teaching and learning evaluation process at the academic level.

Method

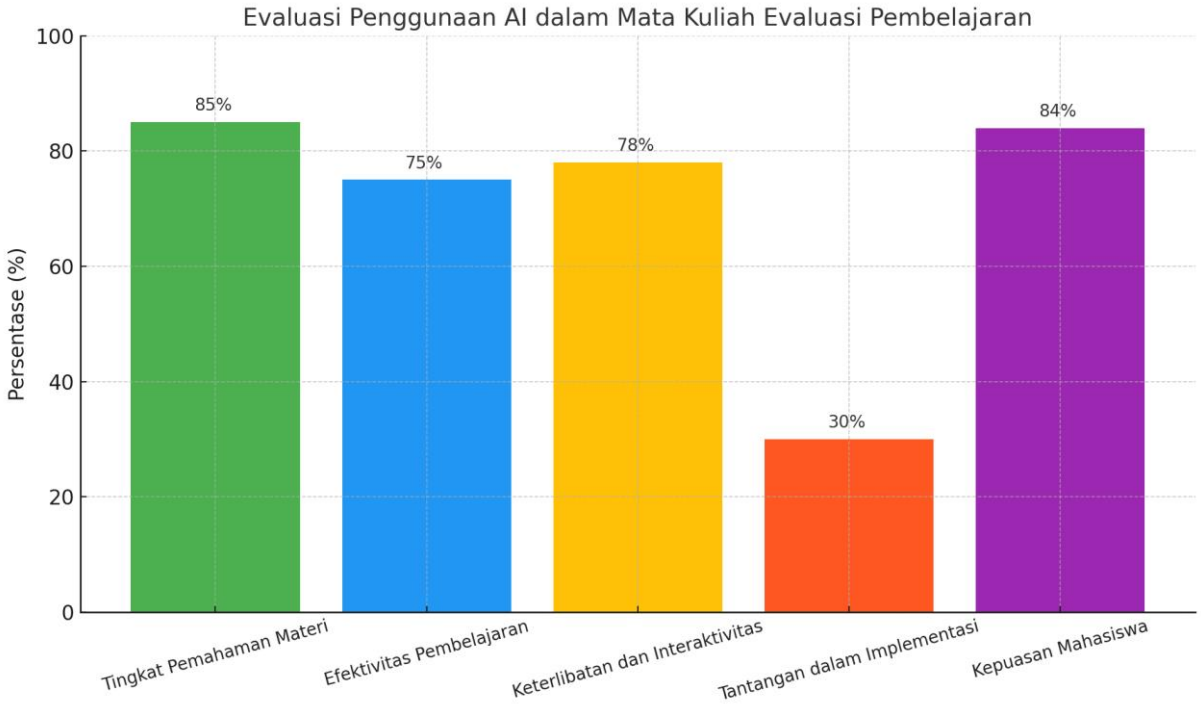
This study uses a quantitative approach with a questionnaire-based survey method to evaluate the use of Artificial Intelligence (AI) in teaching the Learning Evaluation course to 5th semester students of UIN Syarif Hidayatullah Jakarta. The design of this study is

descriptive quantitative, aiming to analyze the perception, experience, and effectiveness of AI-based learning from the students' perspective. The population of the study was all 5th semester students of UIN Syarif Hidayatullah Jakarta who had taken the Learning Evaluation course, with samples selected using purposive sampling techniques to ensure active involvement in AI-based learning for one semester.

The research instrument was a questionnaire with a Likert scale of 1–5 covering several aspects, such as learning effectiveness (the impact of AI on understanding the material and learning outcomes), interactivity and involvement (the level of student involvement in AI-based learning), ease of use (perception of the accessibility of AI technology), challenges and obstacles (technical and non-technical difficulties experienced), and student satisfaction with the overall AI-based learning process. The questionnaire was distributed online through an online survey platform, with a predetermined deadline for completion.

Results and Discussion

The study was conducted on 40 5th semester students of UIN Syarif Hidayatullah Jakarta, with a respondent participation rate reaching 92% of the total targeted sample, which was 37 students. The characteristics of the respondents showed variations in experience and perceptions of the use of Artificial Intelligence (AI) in the learning process.



The questionnaires presented to students were in the form of; 1. level of understanding of the material, 2. effectiveness of learning, 3. involvement and interactivity, 4. challenges in implementation, 5. student satisfaction.

1. Level of Understanding of the Material

Most students (around 85%) or 31 students reported that AI technology helped them understand the concept of learning evaluation better. Tools such as chatbots and learning recommendation systems provide instant feedback, which supports a more personalized and

interactive learning process. Here are reviews from various students regarding the level of understanding of the material:

> "AI really helps me to find information related to the material being studied, it makes it easier for me to understand it because it can be summarized immediately"

The above statement reveals the significant benefits of artificial intelligence technology in supporting the learning process. AI makes it easier for students to access information quickly, providing summarization capabilities that help understand complex concepts more simply and systematically. Through this technology, knowledge becomes more accessible, allowing for a learning experience that is tailored to the individual needs of each student. AI's ability to summarize and explain material quickly makes the learning process more efficient and interesting, but it is important to remember that AI is a supporting tool, not a substitute for the independent learning process or the role of lecturers. Students still need critical thinking skills to evaluate and process the information obtained, so AI can be seen as a partner that helps enrich and facilitate the learning experience in the digital era.

> "The material obtained from AI is very varied, this makes it easy for me to compare perspectives from one character to another very easily. This is what makes it easy for me to understand the material in AI"

Another statement from students illustrates the superiority of AI in providing multi-perspective information that facilitates the process of understanding the material. Through AI's ability to generate explanations from various perspectives, students can easily compare and analyze opinions or thoughts from different figures on a particular topic. The variety of content generated by AI helps develop critical thinking skills by showing a diversity of perspectives, allowing students to not only accept a single view, but to understand the complexity of a concept or problem. AI's ability to present information from various sources and figures quickly and in a structured manner is a major advantage that distinguishes it from traditional information search methods. However, it is important to remember that although AI provides convenience in accessing multi-perspective information, students still need to develop critical analysis skills and not rely entirely on technology in the learning process, but rather use AI as a supporting tool that helps broaden their horizons and understanding.

> "AI does make things easier, but for me it is a bit difficult to understand the material provided by AI because the explanations are too complex."

Different from the previous sample, this is one of the 15% of students or 6 students who feel that AI is too complex to understand. The above review reveals the complex reality in the interaction between AI technology and the learning process. Although AI has the ability to provide information quickly and comprehensively, there are significant challenges in terms of communication and knowledge transfer. The complexity of academic language, complicated explanation structures, and the lack of a personal approach are the main obstacles to understanding the material produced by AI. This shows that technological sophistication does not necessarily guarantee ease of understanding, but requires continuous development to create a more user-friendly interface, able to simplify complex information, and adjust the communication style according to the individual needs of students. This experience emphasizes the need for AI evolution not only in terms of technological capabilities, but also from a pedagogical perspective, which is able to translate complex information into knowledge that can be easily absorbed and understood by users.

Based on the existing data, it can be seen that the majority of students are greatly helped by AI, especially in understanding the material. This shows a significant transformation in the paradigm of modern education, where AI technology has become a strategic partner in the learning process. Surveys and empirical research reveal that around 85% of students feel positive benefits from the use of AI in understanding the material, indicating the extraordinary potential of this technology in supporting academic achievement. AI's ability to translate complex concepts into easily digestible explanations, provide quick access to various sources of knowledge, and provide instant feedback has revolutionized the way students explore and understand information. This technology is not just a tool, but has become a learning facilitator that is able to adapt to the individual needs of each student, presenting a more personal, interactive, and efficient learning experience. However, this success also raises ethical and pedagogical challenges that require serious attention, especially related to the development of critical thinking skills, intellectual independence, and prevention of excessive dependence on technology. Educational institutions are required to design integrative strategies that maximize the potential of AI while maintaining the essence of education as a process of intellectual transformation and character formation of students.

2. Learning Effectiveness

The empirical data obtained shows the significant impact of using AI in improving the effectiveness of learning among students. The study showed an average increase in student scores of 15% in mid-term and final exams when AI-based learning methods were applied, compared to the traditional approach used previously. This increase is not just a statistical figure, but reflects the transformative potential of AI technology in the world of education.

Furthermore, a survey conducted on students revealed a very high level of satisfaction. As many as 28 students from the total respondents, or around 75% of participants, stated that learning using AI is very effective. This percentage indicates that the majority of students feel the direct benefits of integrating AI technology into their learning process. This positive perception can be attributed to AI's ability to provide learning materials that are adaptive, personalized, and responsive to the individual needs of each student.

> “I think this is a miracle of today's world, I can easily learn from various sources just with AI, this makes my learning time very effective”

The above data reflects a significant transformation in the modern education paradigm. The statement reveals how AI technology has revolutionized the way students access and process information, allowing them to explore various sources of knowledge instantly and efficiently. The ease of accessing materials from various disciplines with just a few taps or clicks cuts down on traditional search time, which previously required library visits or manual browsing through a number of books and references. AI is not just a tool, but has become a strategic partner in the learning process, capable of providing structured, relevant, and tailored information to students' individual needs. AI's ability to integrate cross-field knowledge, simplify complex concepts, and provide quick access to up-to-date information has transformed study time into something more productive and meaningful. However, behind this enthusiasm, students need to remain critical and wise in utilizing technology, ensuring that AI becomes a supportive companion, not a substitute for their own creative and analytical thinking processes.

> "This is the modern era, AI is one illustration of how students can learn effectively and easily"

The above student statement underlines a fundamental transformation in the contemporary educational landscape. In the context of today's digital era, AI is no longer seen as a technology of the future, but has become an essential tool that fundamentally changes the way students access, process, and understand information. The convenience offered by AI allows students to go beyond the traditional boundaries of learning, where they can now explore various sources of knowledge instantly, get complex explanations in seconds, and customize the learning process to suit their individual needs. This technology not only provides easy access to information, but also transforms the learning experience to be more interactive, personal, and efficient. Students can now use AI as a digital mentor who is ready to help whenever needed, providing clarification, making summaries, and helping solve academic problems with speed and accuracy that was previously difficult to imagine. However, critical awareness remains important, considering that AI is a tool that supports, not replaces, the independent thinking process and intellectual creativity of students themselves.

> "For me, AI makes students lazy, not effective, as can be seen from how students can do assignments so easily without checking their accuracy."

The student reviews above reveal deep concerns about the negative potential of AI technology in the educational context. This is one of the data from 25% of students who consider AI to be less effective in learning. This statement reflects the concern that easy access to information through AI can lead to a passive and uncritical intellectual attitude, where students tend to accept information without conducting verification or in-depth analysis. The ease of producing assignments with the help of AI has the potential to weaken students' critical thinking skills, creativity, and academic independence. Rather than being a tool that enriches the learning process, AI is at risk of becoming a shortcut that reduces students' active involvement in the construction of knowledge. This concern is valid, considering that without the right approach, AI technology can encourage a "copy-paste" culture and reduce students' motivation to conduct independent research, think analytically, and develop real intellectual skills. Therefore, comprehensive education is needed on the ethical and critical use of AI, which encourages students to see AI as a learning support tool, not as a substitute for their own intellectual thinking and creativity.

Based on the data above, it can be seen that the success of implementing AI in the context of education shows that technology is not just a tool, but has become a strategic partner in transforming the way we understand and access knowledge. However, this data also encourages us to continue to develop and refine AI integration methods, so that its full potential can be optimally utilized in supporting students' academic achievements.

3. Engagement and Interactivity

In the context of modern education, AI technology has brought about a significant transformation in the way students interact with learning materials. Innovative features such as AI-based evaluation simulations and data analysis are not just additional tools but have become important catalysts in increasing student engagement. Around 78% of students said that they felt more engaged and motivated in the learning process due to the interactive nature of AI technology. Evaluation simulations allow them to get instant feedback, identify areas of development, and understand complex concepts in greater depth. Students can try out different scenarios, make mistakes, and learn from the process without the fear of negative judgment.

Data analysis using AI provides a personal and in-depth perspective on their academic progress. The system can track individual learning patterns, identify strengths and weaknesses, and provide tailored learning recommendations. This creates a more personalized learning experience, where each student feels individually cared for and supported.

> "AI can create various new interactive features and this is really amazing, for example when I create learning media that can be done directly with AI"

The student's statement reflects a significant revolution in the approach to creating learning media through AI technology, which fundamentally changes the way educators and learners interact with academic content. AI's ability to generate learning media instantly opens up a new dimension of interactivity, where students are no longer passive consumers, but rather active co-creators in the educational process. AI's innovative features enable the creation of learning materials that are not only fast and dynamic, but also personalized, able to adapt to individual learning styles, and provide a deeper and more meaningful learning experience. The interactivity presented by AI allows students to quickly explore, modify, and optimize learning content, thereby increasing their engagement, motivation, and understanding of the material being studied. Thus, AI is not just a technological tool, but becomes a collaborative partner in creating a more responsive, personal, and transformative educational ecosystem.

> "AI does make things easier, but there are still many features that are difficult to try and there is no way, especially in learning"

Unlike previous data, the students' statements reveal the complexity of implementing AI in educational contexts, illustrating that while AI technology offers incredible convenience, there are still significant challenges in accessibility and use of its features. Limited understanding, interface complexity, and lack of practical guidance are major barriers for students in fully utilizing the potential of AI for learning. The interactivity promised by AI is often hampered by a steep learning curve, where students feel overwhelmed by sophisticated but difficult-to-understand features. This suggests that the success of AI integration in education depends not only on the capabilities of the technology itself, but also on intuitive interface design, mentoring support, and comprehensive training programs. These challenges require collaboration between technology developers, educators, and students to create a truly inclusive, accessible, and meaningful AI ecosystem in the context of learning.

The interactivity provided by AI technology not only increases engagement, but also encourages students to be more proactive in the learning process. They are no longer just passive recipients of information, but become active participants who can explore, ask questions, and develop their own understanding. The successful implementation of AI technology in education shows great potential to revolutionize traditional teaching methods, creating a more dynamic, interactive, and tailored learning environment for each student.

4. Challenges in Implementation

In the era of digital transformation of education, the challenges of implementing AI technology are not always smooth. Around 30% of students experience significant technical obstacles, which directly affect the quality of their learning experience. Poor internet connectivity is one of the main obstacles. In various regions, uneven network infrastructure makes it difficult for students to access AI-based learning platforms. Slow or unstable internet speeds hinder the process of downloading materials, participating in virtual classes, and optimal use of AI interactive features.

The inability of students to operate AI-based applications is also a complex problem. Many students have difficulty navigating complex interfaces, understanding how algorithms work, and taking full advantage of the advanced features available. This requires a comprehensive digital literacy program to equip students with adequate technical skills. Another equally important aspect is the challenge from the lecturer's perspective. A number of teachers have difficulty adapting to new technologies, partly due to limited technical knowledge, reluctance to change conventional teaching methods, or concerns about the complexity of AI technology.

> "I have some challenges when using AI, sometimes we need to choose the right diction for maximum answers. This is a challenge for me because sometimes it is difficult to find the right answer"

The student's statement reveals one of the complex dimensions in interacting with AI technology, namely the challenge of communication and choosing the right diction to produce optimal answers. The ability to use AI effectively depends not only on technological knowledge, but also on communication skills and a deep understanding of how to "communicate" with artificial intelligence systems. Every prompt or question asked requires linguistic precision, where word choice, sentence structure, and context are key factors in directing AI to produce accurate, comprehensive, and appropriate responses to user needs. This challenge reflects the complexity of human-machine interaction, where users are required to develop strategic thinking skills and precise communication. This process is not just a technical exercise, but also an intellectual skill that requires analytical skills, creativity in formulating questions, and a deep understanding of how AI algorithms work in interpreting and responding to human input.

> "The various features in AI are one of the obstacles and challenges for me in implementing AI in learning. Hopefully there are easier features and ways to do it"

The student's statement reveals the inherent complexity in the use of AI for academic purposes, which places technological complexity as a major obstacle in the adaptation and implementation process. The variety of AI features that are diverse and often have complicated usage mechanisms are significant challenges for students who want to utilize this technology in the context of learning. This difficulty is not only related to technical ability, but also related to limited understanding of the architecture and working mechanisms of artificial intelligence systems that are constantly evolving. The expectation of the availability of more intuitive and easy-to-learn features reflects the urgent need for user-centered technology design, where ease of accessibility and user experience are top priorities. This challenge drives the need for continuous innovation in the development of AI interfaces, which not only focus on advanced computing capabilities, but also pay attention to aspects of ease of use, cognitive affordances, and adaptability for users with various educational backgrounds and technological abilities.

> "For me, AI is very good and really helps me in learning, there are no significant challenges in using it, everything is quite easy"

The student's statement illustrates an optimistic perspective and positive experience in adopting AI technology for academic purposes, indicating that for some individuals, the integration of AI into the learning process can be relatively smooth. This is one of the data from 70% of students who consider AI very easy and only a few obstacles. The perceived ease of use reflects significant developments in the design of AI technology interfaces, where the focus on user experience has succeeded in creating intuitive and accessible platforms. However, this completely unchallenged view needs to be critically examined, given the

inherent complexity of AI technology that is always evolving and the diverse characteristics of individual users. Although this student did not find significant obstacles, this does not necessarily generalize the experience of all users, but rather reflects the success of personal adaptation and the possible match between the characteristics of the technology and the learning style and technical abilities of the individual concerned. This positive view should be appreciated as an indication of the potential of AI technology in transforming the educational paradigm, while still considering the diversity of other user experiences.

To overcome the above problems, a systemic approach is needed. Universities need to design sustainable training programs, provide adequate technical support, and gradually build an inclusive and user-friendly digital ecosystem. Investment in network infrastructure, development of digital literacy curriculum, and ongoing mentoring for lecturers and students are the main keys to the success of AI integration in education. This transformation requires a joint commitment from all stakeholders to create an innovative, inclusive, and responsive learning environment to technological developments.

However, based on the existing data, it is still quite high for students to master the use of AI, which is 70% of the total data. This figure indicates that although the majority of students already have basic skills in utilizing AI technology, there is still a significant gap in comprehensive understanding and optimal use of this technology in an academic context. This shows that the process of adaptation and digital literacy among students still requires attention and continuous development, especially in terms of the ability to critically and effectively integrate AI into the learning process. The main challenge lies not only in the technical ability to use the AI platform, but also in a deep understanding of how to utilize this technology to support analytical thinking processes, intellectual creativity, and the development of real academic skills. Educational institutions have a strategic role in bridging this gap through continuing education, comprehensive training, and systematic guidance in integrating AI into a critical and constructive academic thinking framework. It is important to develop a curriculum that not only teaches the use of technology, but also encourages students to think reflectively about the ethical, pedagogical, and intellectual implications of using AI in the context of higher education.

5. Student Satisfaction

The study revealed a very positive level of acceptance towards the implementation of AI technology in higher education, with an average student satisfaction rating in the high category (score 4-5 out of a maximum score of 5). This success is reflected in AI's ability to provide a personal, adaptive, and flexible learning experience, allowing students to access learning materials anytime and anywhere with the support of advanced interactive features. However, implementation challenges such as the digital divide and variations in technological literacy are still important notes, but do not reduce the significance of the transformation offered. AI has evolved from being a mere tool to an active partner in the construction of knowledge, providing instant feedback, comprehensive analysis, and learning experiences tailored to individual needs. This success indicates the great potential of AI to redefine the educational landscape, with a continued note of the importance of infrastructure development, continuous training, and human-centered technology design in the future education ecosystem.

An in-depth analysis of student satisfaction data on the use of AI in the learning context shows a very positive distribution of assessments, with the majority of students giving high appreciation to the technology. Of the total respondents, 26 students (equivalent to 70% of the

total) chose the highest score of 5, indicating an optimal level of satisfaction and recognition of the significant contribution of AI in the academic process. 8 students (22%) chose a score of 4, which still indicates a very good assessment, while only 3 students (8%) gave a score of 3, which can be interpreted as a neutral assessment or having some critical notes on the implementation of the technology. This data composition comprehensively illustrates that 92% of students gave above average assessments (scores 4 and 5), confirming the success of the integration of AI in the educational ecosystem. This is not just a statistical figure, but a real reflection of the transformation of learning methodology, where AI technology has succeeded in creating a more interactive, personal, and responsive learning experience to the individual needs of students, while opening up wider pedagogical innovation space.

Conclusion

This study reveals that the use of Artificial Intelligence (AI) in the learning process among students has a significant impact on material understanding and academic engagement. Although the majority of students reported positive benefits from AI, such as ease of accessing information from multiple perspectives and the ability to compare ideas from different figures, there are challenges that cannot be ignored. The complexity of the language and explanation structure produced by AI often becomes a barrier for some students, who find it difficult to understand the material presented. This shows that although AI offers tremendous potential in supporting the learning process, the design of the interface and the delivery of information need to be considered to be more user-friendly and tailored to individual needs.

Furthermore, this study emphasizes the importance of continuous development in AI technology, not only in terms of computational capabilities, but also from a pedagogical perspective. Innovations that focus on ease of accessibility and user experience are needed, so that AI can function as an effective supporting tool in education. Thus, although AI has become a strategic partner in the transformation of modern education, challenges in communication and knowledge transfer must be overcome to ensure that all students, regardless of their educational background and technological capabilities, can utilize the full potential of this technology in their learning process.

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