

Analysis of the Utilization of AI ChatGPT in Assisting the Learning Process of Informatics Education Students at Citra Bangsa University

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Abstract

This study aims to analyze the utilization of Artificial Intelligence (AI) technology, specifically ChatGPT, in assisting the learning process of students in the Informatics Education study program. The research focuses on the following issues: the level of ChatGPT utilization by students during their learning activities; the benefits experienced from using ChatGPT as a tool to understand material, debug code, and complete assignments; and students' perceptions of the effectiveness of ChatGPT in enhancing their understanding of Informatics coursework. The method used in this study refers to a quantitative approach with a survey method, employing data collection through the distribution of structured questionnaire instruments to research participants, namely active students of the Informatics Education Study Program. Out of 30 respondents, 96.7% use ChatGPT, primarily to understand material, complete assignments, and engage in independent learning. Students identified various functional benefits from using ChatGPT, such as increased study time efficiency, ease in obtaining conceptual clarifications, and the ability to access explanations that are more structured and easier to understand compared to conventional sources. Furthermore, most students gave positive evaluations of ChatGPT as a digital entity capable of increasing learning motivation, improving material comprehension, saving time, and supporting practical tasks. These findings confirm ChatGPT's potential as an effective learning support tool. However, its integration needs to be conducted wisely to avoid cognitive dependency and maintain academic integrity. Based on the overall findings presented, this study recommends that the use of ChatGPT in higher education contexts be done proportionally, prudently, and accompanied by a critical attitude. Students are encouraged not to passively accept every piece of information provided by the AI system but rather to use it as an intellectual stimulus to explore further knowledge, develop deeper understanding, and uphold academic integrity in every learning process.

Keywords: Artificial Intelligence, ChatGPT, Learning, Informatics, Students

INTRODUCTION

The advancement of Artificial Intelligence (AI) technology has had a major impact on education. One form that is now widely used is ChatGPT, an AI-based language model that is able to provide answers, explanations, and assistance in various fields, including education. In late 2022, ChatGPT surprised many people with its capabilities. This service was developed by a large company from the United States called OpenAI. The company is engaged in artificial intelligence research and one of its developments is the ChatGPT chatbot service. Currently, modern technology is very important to improve the teaching and learning process. Informatics students who are accustomed to interacting with technology use ChatGPT as a tool to help understand lecture materials, complete assignments, and explore programming concepts. (Handoyo, Emanuel Ristian, et al).

ChatGPT is an artificial intelligence technology that is able to provide neat, logical responses and use the right language. In addition, this system can remember the context of previous conversations and has the ability to compile scientific articles or journals

in a short time (Ramadhan et al., 2023). The ChatGPT work process is divided into three main stages, namely data pre-processing, coding process, and information parsing.

The presence of ChatGPT marks an important milestone in the development of increasingly sophisticated and innovative artificial intelligence (AI) technology. This technology does not only answer questions or carry out user commands, but also shows the ability to interact naturally, deeply, and contextually that approaches the way humans think and communicate (Ramadhan et al., 2023). In other words, ChatGPT has become one of the most promising forms of AI in an effort to challenge and perhaps one day surpass the Turing test, a test designed to measure whether a machine is capable of exhibiting behavior that is indistinguishable from humans in conversation. (Turing, 1950; Ramadhan et al., 2023).

Compared to previous generation chatbots, ChatGPT has a very prominent advantage because it is supported by the GPT-3 (Generative Pre-trained Transformer 3) generative language model

architecture, which is the third generation of the GPT model series developed by OpenAI (Brown et al., 2020). GPT-3 has been trained using billions of words and phrases from various sources on the internet, so it is able to understand and produce text with extraordinary levels of complexity and flexibility. The development of this technology allows ChatGPT not only to answer questions directly, but also to respond contextually, provide in-depth explanations, and construct arguments and narratives in a way that resembles human thought patterns. This is what makes ChatGPT one of the most influential AI innovations in today's digital era.

However, despite its convenience, the use of AI in education poses its own challenges, such as dependence on technology and potential misuse. Therefore, it is important to analyze the extent to which ChatGPT is utilized by students and how it impacts their learning process. (Susanto & Wijaya, 2023).

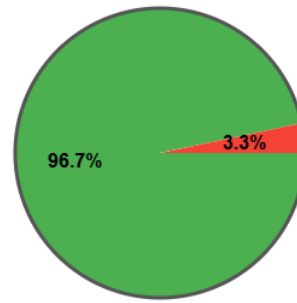
METHOD

This study uses a quantitative approach with a survey method to examine the use of ChatGPT in the learning process of students of the Informatics Education Study Program at Citra Bangsa University. This approach was chosen because it is able to present objective and measurable data regarding perceptions, experiences, and intensity of AI use in the context of learning.

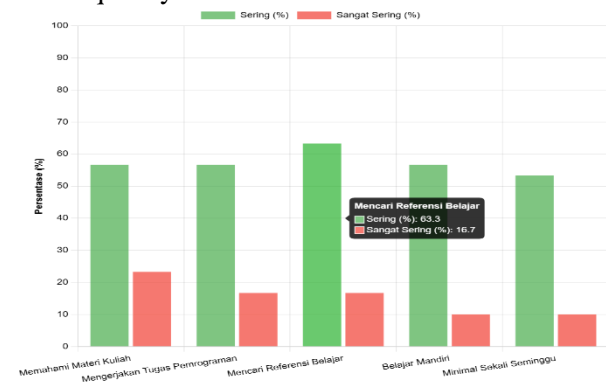
The research subjects are students of the Informatics Education Study Program at Citra Bangsa University who have or are using AI ChatGPT technology in the learning process. Consisting of 30 people with each batch of 10 people, Data collection techniques using a Likert-scale questionnaire of 15 questions. Data analysis techniques are carried out by calculating the frequency distribution and percentage of each respondent's answer. Furthermore, the data is analyzed descriptively to identify tendencies or response patterns that emerge.

RESULTS AND DISCUSSION

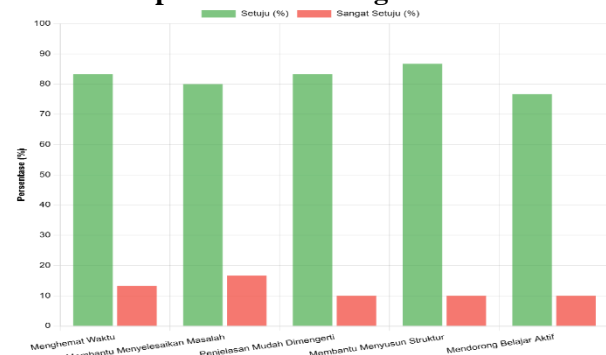
ChatGPT users: 96.7% (29 out of 30 respondents) stated they use ChatGPT.



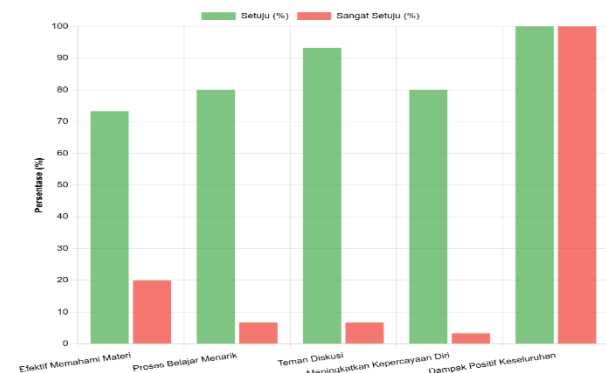
ChatGPT Utilization Level in Learning Process
Frequency of Use for Various Activities:



Benefits Experienced in Using ChatGPT



Perceptions of the Effectiveness of ChatGPT in Learning



These results confirm that ChatGPT has become a very significant tool in supporting student learning,

especially in areas that require conceptual and practical understanding such as informatics. The high level of use, tangible benefits, and positive perceptions of effectiveness and ease of access make ChatGPT an innovative solution that can improve the quality and efficiency of the learning process. These findings provide a strong basis for considering the integration of artificial intelligence technology as an integral part of the learning ecosystem in higher education, which not only enriches teaching methods but also encourages the creation of a more personalized, adaptive, and interactive learning experience. However, such integration must be accompanied by a wise management strategy to minimize potential risks such as over-dependence and maintain academic integrity standards.

CONCLUSION

Based on the results of a study of 30 students of the Informatics Education Study Program at Citra Bangsa University, it can be concluded that the use of ChatGPT as an artificial intelligence technology has had a positive impact on the student learning process. As many as 96.7% of students use ChatGPT for various academic purposes such as understanding material, working on programming assignments, looking for references, and independent learning. ChatGPT is considered to help save time, provide easy-to-understand explanations, and increase student confidence in understanding the material.

Students see ChatGPT as a tool that helps reduce the difficulty of thinking that often arises when studying difficult or abstract material. This technology is not only able to simplify complex concepts in an easy-to-understand way, but also able to transform technical information into lighter explanations without reducing its importance. The benefits are not only felt in understanding the material, but also in terms of time efficiency. Students feel that the time that is usually spent on understanding difficult material can now be used to deepen their understanding or do exercises. In addition, interaction with ChatGPT also helps increase students' confidence to ask questions, criticize, and evaluate information without fear of being wrong or feeling pressured like in class discussions.

Therefore, it can be concluded that the integration of ChatGPT in the context of higher education, especially in the Informatics domain, is not just an ordinary technological intervention. It represents a methodological leap in learning practices, with the potential to substantially reconfigure the relational pattern between humans and machines. However,

strict curation and ethical efforts are also needed so that the use of this technology remains within a responsible pedagogical corridor, oriented towards strengthening intellectual capacity, and not merely trapped in shallow technological pragmatism.

SUGGESTION

Students are advised to use ChatGPT wisely, reflectively, and critically, by placing it as a complementary tool to the true learning process, not as a total substitute for intellectual efforts that should be carried out independently. In this case, the use of ChatGPT needs to be balanced with the ability to evaluate the validity of information, compare various sources of knowledge, and develop arguments and syntheses autonomously. Students must always be aware that conceptual depth and reasoning power cannot be achieved simply by accepting instant answers, but through a process of reflection, discussion, and continuous practice.

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BIBLIOGRAPHY

- Alifka, Muh. Analisis dan Implementasi Algoritma Convolutional Neural Network pada Opinion Mining dalam Pemanfaatan Platform Chatbot di Twitter= Analysis and Implementation of Convolutional Neural Network Algorithm on Opinion Mining in the Utilization of Chatbot Platform on Twitter. Diss. Universitas Hasanuddin, 2024.
- Brown, T. B., Mann, B., Ryder, N., Subbiah, M., Kaplan, J., Dhariwal, P., ... & Amodei, D. (2020). Language models are few-shot learners. arXiv preprint arXiv:2005.14165. <https://arxiv.org/abs/2005.14165>
- Hadian, Tantan, M. Pkim, and Eneng Rahmi. Berteman dengan ChatGPT: Sebuah Transformasi dalam Pendidikan. Edu Publisher, 2023.

- Handoyo, E. R., Wibowo, A., & Prasetyo, T. (2023). Pemanfaatan ChatGPT dalam proses pembelajaran mahasiswa informatika. *Jurnal Teknologi dan Pendidikan*, 5(1), 45–52.
- Handoyo, Emanuel Ristian, et al. "Identifikasi Pengaruh Penggunaan ChatGPT terhadap Kemampuan Berfikir Mahasiswa di Universitas Atma Jaya Yogyakarta Prodi Sistem Informasi Angkatan 2021." *KONSTELASI: Konvergensi Teknologi dan Sistem Informasi* 3.2 (2023): 342-352.
- Kharis, Selly Anastassia Amellia, and Arman Haqqi Anna Zili. "Chatgpt Sebagai Alat Pendukung Pembelajaran: Tantangan dan Peluang Pembelajaran Abad 21." *Paedagoria: Jurnal Kajian, Penelitian Dan Pengembangan Kependidikan* 15.2 (2024): 206-214.
- Pertiwi, Anna, Yulius Panter Bara, and Yohari Pakiding. "Mengoptimalkan Pengalaman Belajar menggunakan AI dalam Dunia Pendidikan pada Mahasiswa Teknologi Pendidikan." *Prosiding Universitas Kristen Indonesia Toraja* 3.3 (2023): 1-12.
- Ramadhan, R., Suryani, T., & Putra, D. M. (2023). Analisis pemanfaatan ChatGPT dalam dunia pendidikan: Peluang dan tantangan. *Jurnal Riset Teknologi dan Inovasi Pendidikan*, 4(2), 88–97.
- Susanto, H., & Wijaya, A. F. (2023). Etika penggunaan AI dalam pendidikan tinggi: Studi kasus ChatGPT. *Jurnal Etika dan Teknologi*, 2(3), 33–40.
- Turing, A. M. (1950). Computing Machinery and Intelligence. *Mind*, 59(236), 433–460. <https://doi.org/10.1093/mind/LIX.236.433>