

Impact of The Use Of AI (Chatgpt) for Information Science Students UPN "VETERAN" JAKARTA in The Context of Adaptive Learning

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Abstract

This study aims to investigate the impact of AI usage, specifically ChatGPT, on students in the context of adaptive learning at Universitas Pembangunan Nasional "Veteran" Jakarta. The background of this research is the increasing use of AI (in this study, ChatGPT) in academic education, such as completing assignments, learning methods, and examining the perceived impact from the students' perspective. This research employs quantitative methods and literature studies to understand the impact of using ChatGPT on students' adaptive learning. Data is collected using questionnaires from several students who use ChatGPT in their learning activities and information searches. The benefit of this research is to provide an overview that AI usage greatly assists in adaptive learning methods; however, better regulation is needed to prevent dependency on technology in education.

Keywords: *Artificial Intelligence ; Chatgpt ; Student Learning ; Adaptive Learning*

INTRODUCTION

In the ever-evolving digital era, education is rapidly evolving. This development is driven by technological innovations (Leal Filho et al., 2019). Advances in education have changed the outlook of education by making facilities and infrastructure more sophisticated and efficient. Through technology, education has undergone a massive transformation towards better progress (Arulkumal et al., 2019). Modern technology has become an inseparable part of the passage of time (Zilian and Zilian, 2020). Technology has not only become an essential part of our daily lives, but it has also changed the way we live, work, learn, and interact. Various innovations continue to emerge, making human activities and work more practical and efficient (Bonilla et al., 2021). One interesting innovation is artificial intelligence (AI), including chatbots such as ChatGPT (Generative Pre-Trained Transformer). ChatGPT is a large language model trained on a very large dataset of text and code (Luknanto 2023). This allows ChatGPT to answer questions, generate text, and write a variety of content.

The use of ChatGPT as a learning medium has a significant impact. The impact of using ChatGPT is in accordance with its use. ChatGPT can facilitate students in increasing productivity in the academic field (Suryono et al. 2023). However, the use of ChatGPT needs to be supervised. Educators also need to be educational facilitators so that the use of media is not misused (Faiz and Kurniawaty 2023), Over-reliance on AI such as ChatGPT can potentially lead to decreased student thinking power (Saraswati et al., 2023). In facing this challenge, educators need to take an active role as facilitators who not only facilitate access to information but also guide students in using technology wisely.

ChatGPT emerges as an innovative learning tool for students because it is able to adapt to the needs and capacities of individual users. This technology not only provides a personalized approach to learning but also allows for proper adaptation to each student's learning style. According to John Cleave, "Adaptive learning is any design that tailors a learning experience to the understanding, skills, and interests of each individual." (Cleave J. 2020). This means that the teaching methods or materials used are tailored to the specific needs of each learner so that everyone can learn in the way that is most effective for them.

According to Setiawati (2008) cited in the book "Future Education Technology" Adaptive Learning is a system that supports learning that is tailored to the capabilities and learning styles of

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learners (Pujriyanto et al. n.d.). Adaptive learning, which has been implemented in various forms and settings, from group-based learning to web-based learning (Pujriyanto et al. n.d.), is now increasingly relevant with technological advances such as AI. Adaptive learning allows for personalized learning, where the user no longer follows the technology but instead, the technology adjusts the learning to suit individual needs.

In the context of Information Science students at UPN "Veteran" Jakarta who study information, technology, and social, the use of AI such as ChatGPT is very relevant. Information science itself is a study program that studies various disciplines, so sometimes individual learning needs are not met. Adaptive learning with the use of AI offers a solution to overcome the lack of personalization in learning. ChatGPT can help students to support adaptive and personalized learning in understanding the material, answering questions, and recommending additional learning resources in real time. This is important in the context of higher education where students are expected to learn independently and keep up with the fast-paced information. The integration of ChatGPT in an adaptive learning system not only improves the quality of learning but also prepares students to face challenges in the world of work that increasingly rely on advanced technology.

Of course, to support this idea, previous research is needed as a reinforcement of the arguments put forward in this study. In national journals, the author found a study entitled "Analysis of the Effect of ChatGPT on Student Productivity" (Suryono et al. 2023), this study discusses the effect of the presence of ChatGPT as AI (Artificial Intelligence) technology that provides assistance for students in increasing productivity. The author also found a study entitled "Analysis of the Effect of ChatGPT on the Laziness Level of ITS Students Thinking in the Process of Working on Assignments" (Saraswati et al. 2023), this study discusses ChatGPT in the process of working on assignments can affect motivation, behavior, and the possibility of increasing student laziness levels over the use of ChatGPT.

The purpose of this study is to determine and analyze the positive and negative impacts of using ChatGPT as a new technology facility in the context of adaptive learning methods for Information Science students at Universitas Pembangunan Nasional "VETERAN" Jakarta. The results of this study are expected to be a valuable insight into the impact of using AI in adaptive learning methods.

METHOD

The research uses quantitative descriptive methods, in line with Sugiyono's opinion (2018:13) that defines it as a method of research based on positivist paradigms. In this paradigm, the data collected is concrete and measurable. The data is then analyzed using statistics as a measurement and calculation tool to answer research questions and produce valid and objective conclusions. The use of quantitative data allows researchers to generalize research results to a wider population. To obtain information relevant to this research, data was collected through online surveys distributed to active students of UPN "Veteran" Jakarta Information Science. The survey was conducted on June 1, 2024, using the Google Forms platform. The questionnaire consists of 11 questions, divided into three main sections:

1. Part One: Consists of 5 general questions about adaptive learning, aimed at understanding the respondent's experience of adaptive learning using AI.
2. Part Two: Consists of 3 questions about the negative impact of the use of AI in adaptive learning, and aims to dig into the obstacles or challenges faced by respondents.
3. Part Three: Consists of three questions on the positive impact of using AI in adaptive education, aiming to identify the benefits perceived by the respondents

RESULT AND DISCUSSION (12 pt, bold)

The research was conducted using online quantitative descriptive methods. The data collected in this study using questionnaires through the Google Forms platform will be distributed to the students of the Information Science major UPN "Veteran" Jakarta starting from 1 June 2024. Questionnaire answers are then analyzed to obtain answers from research questions using Likert scale calculations

TABLE 1. Likert Scale

No	Question	VDA	DA	D	A	SA
1.	ChatGPT helps customize the learning material according to my needs	0%	0%	18,2%	72,7%	9,1%
2.	I feel ChatGPT makes learning more personal and fits my learning style	0%	0%	36,4%	54,5%	9,1
3.	The use of ChatGPT motivated me to be more active in the learning process	0%	9,1%	31,8%	50%	9,1%
4.	ChatGPT helps me understand learning better and faster	0%	4,6%	9,1%	72,7%	13,6%
5.	ChatGPT provides learning recommendations that match my skill level and skills	0%	9,1%	27,3	63,6	0%

The results of this questionnaire will use a percentage with the Likert scale method. The calculation of the data is done by summing the percentages into two parts, i.e. the agreed part consisting of the A + SA scale, and the disagreed part which consists of the VDA + DA + D

TABLE 2. General Question Questionnaire Results

No	Symbol	Keterangan	Skor
1	VDA	Very Disagreeable	1
2	DA	Disagreeably	2
3	D	Disagreed	3
4	A	Agreed	4
5	SA	Strongly Agreed	5

The findings from this survey show that ChatGPT plays a positive role in facilitating adaptive learning for UPN "Veteran" Jakarta Information Science students. This was proved by the majority of respondents who gave a positive response to various aspects of the use of ChatGPT in learning. A total of 72.7% of respondents agreed that ChatGPT helped them obtain learning materials that matched their needs. This shows that ChatGPT is able to promote personalized learning by providing material that is relevant to each individual. A majority of 54.5% of respondents agreed that ChatGPT makes learning more personal and fits their learning styles. Then half of the respondents, 50% agreed that using ChatGPT motivated them to be more active in the learning process. Then 72.7% of respondents agreed that ChatGPT helped them understand learning better and faster. ChatGPT's ability to answer questions clearly can speed up the process of understanding. Lastly, a majority of respondents 63.6% agreed that ChatGPT provides learning recommendations that match their level of understanding and skills. Proper advice can help students learn optimally to improve their abilities.

TABLE 3. Positive Impact questionnaire results

No	Question	VDA	DA	D	A	SA
1.	I feel more confident in doing my job after using ChatGPT	4,5%	22,7%	31,8%	40,9%	0%
2.	ChatGPT helped me prepare myself better for exams and final tasks	0%	4,5%	9,1%	86,4%	0%
3	Using ChatGPT reduces the time I spend looking for and studying learning materials	0%	4,5%	18,2%	59,1%	18,2%

Based on a positive impact questionnaire on the use of ChatGPT's specialty AI in the learning methods of Information Science students, UPN "Veteran" Jakarta, showed that a majority of 40,9% of respondents agreed that using ChatGPT improved their confidence in doing their job. However, there were also some who disagreed or disagreed, indicating that not all students felt the same improvement in confidence. Then the majority, 86.4% agreed That chatGPT helped them in preparing themselves for exams and final tasks. This suggested that chatGPT played a significant role in helping students' learning and academic preparation. Finally, a large proportion of 59.1% said that using ChatGPT reduced the time they spent searching and studying materials. This shows that ChatGPT is effective in improving the efficiency of student learning time.

TABLE 4. Negative impact questionnaire results

No	Pertanyaan	VDA	DA	D	A	SA
1.	The use of ChatGPT made me less trying to understand the material in depth.	9,1%	13,6%	27,3%	45,5%	4,5%
2.	I feel my ability to think critically decreases because of too often using ChatGPT	4,5%	4,5%	45,5%	36,4%	9,1%
3.	I tend to delay work because I feel I can finish it quickly using ChatGPT	9,1%	31,8%	18,2%	36,4%	4,5%

The table of results of the negative impact questionnaire above regarding the use of AI, especially ChatGPT in the learning method of UPN "Veteran" Jakarta Information Science students, shows that most respondents as much as 45.5% agree that the use of ChatGPT makes them less trying to understand the material in depth. This shows the potential risk of dependence on technology that can reduce motivation to understand the material more deeply. Then most respondents as much as 45.5% disagreed that their critical thinking skills decreased due to the overuse of ChatGPT. However, 36.4% agreed and 9.1% strongly agreed, indicating that there were some students who felt the use of ChatGPT affected their critical thinking skills. Finally, most respondents as much as 36.4% agreed that they tended to procrastinate work because they felt they could finish it quickly using ChatGPT. However, 31.8% disagreed and 18.2% disagreed, indicating that not all students experienced work delays due to the use of ChatGPT. This statement shows that the negative impact of using ChatGPT as an auxiliary tool in

student adaptive learning varies depending on the character of the individual, the majority of respondents chose not to agree that there was a negative impact of using ChatGPT. However, there are some respondents who agree that the use of ChatGPT has a negative impact on adaptive learning.

The rise of AI, particularly ChatGPT, promises a revolution in education by offering a highly personalized and engaging learning experience for students. However, it's crucial to acknowledge the potential impact this technology may have on individual learners. The effects of ChatGPT can vary depending on a student's learning style and personality. In today's dynamic learning landscape, where students are no longer confined to a single textbook or source, ChatGPT can be a powerful tool that empowers them to explore knowledge in their own unique and customized way. ChatGPT can provide students with immediate feedback on their writing, suggest relevant learning resources based on their progress, and tailor exercises to their strengths and weaknesses. Overreliance on AI for information could hinder students' critical thinking skills. Unequal access to technology could exacerbate educational inequalities.

The results of this study indicate that the use of ChatGPT in students' adaptive learning methods received a positive response. ChatGPT helps students in finding information according to their needs, this is also stated in research (A, Bau, & Bouty, 2024) which states that the content provided by ChatGPT suits their needs. Furthermore, ChatGPT makes learning more personalized and in accordance with the student's style. (Suharmawan, W. 2023) stated that the use of ChatGPT made the learning method more personalized. Then ChatGPT motivates them to be more active in the learning process. Then ChatGPT helps them understand learning better and faster. ChatGPT's ability to answer questions clearly can speed up the understanding process. Finally, ChatGPT provides learning recommendations that match their level of understanding and skills. The right recommendations can help students learn optimally to improve their skills.

In addition, the impact of using ChatGPT in student adaptive learning, such that students are more confident in doing assignments, more helpful in preparing for exams and final assignments, and reducing the time used to find the material needed. In addition, the use of ChatGPT in student adaptive learning has an impact on students being too fast in finding answers so that some students are reluctant to look for deeper material, decreasing some of the quality of student thinking, and delayed assignments carried out by some students due to the presence of AI. this was also conveyed by (Sholihatin et al., 2023) who stated that ChatGPT is a tool that can be used by students to find answers, 2023) which stated that ChatGPT increases efficiency and helps students find quite complicated materials, and also (Haidir et al., 2024) that by using ChatGPT in their learning there are some respondents who feel an increase in critical thinking skills and some feel a decrease in critical thinking skills due to the ease of finding answers with ChatGPT.

CONCLUSION

The study explores the impact of the use of AI (ChatGPT) for information science students at UPN "VETERAN" Jakarta in the context of adaptive learning. Research findings suggest that ChatGPT has significant potential to improve the quality of learning for information science students. ChatGPT can help students learn in a more personal, effective, and rewarding way. ChatGPT can provide real-time feedback and assessments, tailor learning content to individual needs, and provide access to relevant learning resources. The findings of this research have important implications for the future of information science education. ChatGPT can be used to develop more personal and effective learning aids, improve learning motivation, and accelerate understanding and retention of information. However, it is important to note that ChatGPT is just a tool, and its use should be well integrated into traditional curricula and teaching methods. It is also important to ensure that ChatGPT is used responsibly and ethically. Overall, this research shows that ChatGPT has the potential to be a valuable tool for improving the quality of learning for information science students. With proper development and use, ChatGPT can help students reach their maximum potential and prepare them well for the challenges of the future.

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