

Analysis of the Phenomenon of ChatGpt Usage on the Creativity of Thinking of Today's Students in Indonesia

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ARTICLE INFO	ABSTRACT
<p>Keywords: ChatGpt; Creativity; Algorithm.</p>	<p><i>This study explains how ChatGpt, which is a sophisticated technology today, is used by Indonesian students to work on various problems on campus, especially in completing daily and final assignments. However, the use of ChatGpt is considered to be able to affect the creativity of thinking of every student who uses it. ChatGpt will limit the creativity of thinking of students because its users will depend on ChatGpt, while ChatGpt has limitations where ChatGpt only depends on the algorithm, so it will only display what is in the algorithm. Through a qualitative case study approach, this study will present and explain the use of ChatGpt by Atma Jaya University Informatics Study Program students in their lectures as well as presentations on the use of ChatGpt, and also present presentations on the use of ChatGpt in the academic world from each generation. From the data displayed, the use of ChatGpt by students will be analyzed which can limit their creativity of thinking in lectures.</i></p>

INTRODUCTION

The history of the development of human life is divided into several periods, starting from prehistoric times, the era when humans did not yet know writing with the living conditions of humans still very simple, until now which is called the modern era. It is called the modern era because during this period there were so many discoveries by scientists in the field of science, especially in the field of technology. The word modern etymologically comes from Latin, namely "moderna" which means now or new. So the modern era can be interpreted as the present era or new era which is marked by changes in every aspect of human life, starting from social change, technology to climate change or natural conditions that are very different from previous eras. (Kumanireng, 2022).

There are three characteristics of modernity, namely;

a. Subjectivity

In this characteristic, humans who are collectively based on race and a group of people in an area that can be called the people, see themselves as the center of the reality of life and even consider themselves as the benchmark of everything in this world. However, in the 13th century in Italy became a milestone in the beginning of what is called modern humans. (Kumanireng 2022) .

In this modern era, humans no longer consider themselves as the center of the reality of life and as the measure of everything from a collective perspective but from an individual perspective. Every human being is the center of the reality of life that agrees with **Descartes' opinion** that says "cogito ergo sum" which means "I think, therefore I am", and is supported by Marx's opinion that humans are subjects of history who will not be swept away in the game of time, but will make their own history. (Kumanireng 2022) .

b. Criticism

In the Middle Ages, criticism was considered an act against God which was manifested in the leaders of the Church at that time. At this time, the Church had full authority in determining attitudes towards the state, conditions and events of nature as well as the social conditions of European society at that time, so that one of the philosophers named Giordano Bruno was punished by being burned in public because he was considered rebellious against the Church. (Kumanireng 2022) .

At that time, Emanuel Kant also conveyed criticism of the Church which thought Theocentrism, assuming that everything was controlled by God. Kant criticized by saying that criticism is a courage to think independently, only by being critical will humans be free from Theocentrism thinking which he considered traditional thinking. So this period Kant named as the period when humans woke up from dogmatic sleep. (Kumanireng, 2022).

c. Progress

Progress is the result of the characteristics of subjectivity and criticism, humans who consider themselves as the center of the reality of life will use their reason and mind in controlling their social life. By thinking critically, humans are able to create new changes by producing new works in every joint of human life. In this era of progress, humans can break the power that will imprison freedom of thought, human thoughts are no longer limited by any power. (Kumanireng, 2022).

ChatGPT is evidence of the progress of today's very rapid technological changes commonly called artificial intelligence (AI), the presence of ChatGPT especially in the field of education in Indonesia has a very big impact, ChatGPT is no longer just an aid but is considered the main tool in making various kinds of reports. ChatGPT is very easy to access and is able to make all the desired reports in just seconds. This convenience and speed are the main attractions of ChatGPT users, besides being easy and fast, the reports made by ChatGPT at first glance look very perfect. However, behind its convenience and speed, ChatGPT worries some parties, especially teachers, lecturers or educators because ChatGPT is considered to have a negative impact on students' critical thinking. (Supandi, 2024).

There are several benefits of using ChatGPT in education;

a. Fast and Accurate Learning

With its intelligence, ChatGPT is able to analyze each student's academic performance so that the arrangement of the learning materials is in accordance with each student's needs. As a result, students are able to learn quickly and can understand complex concepts.

b. Time Efficiency

In a short time, ChatGPT is able to make learning plans, assessments and content creation. So that at the same time students are able to make various kinds of assignments.

c. Rich in Information

ChatGPT provides a variety of information and guidance that can be accessed anytime and anywhere, making it very helpful for students who really need educational resources, especially in areas that lack access to educational information.

d. Help Develop Writing Skills

ChatGPT is able to correct every grammar used by the writer in his report in just a short time, so that the report created has the right sentence structure, word choice and language and makes the report perfect. (Supandi, 2024)

Apart from providing positive things, ChatGPT can also have a negative impact on students as its users;

a. Plagiarism and Dependence

Misuse of ChatGPT can damage academic integrity and originality because any student can copy and paste answers directly from ChatGPT, and continued use can reduce the analytical and critical thinking skills of any student who uses it.

b. Creating Gaps

The presence of artificial intelligence, namely ChatGPT, can create a technological gap, because teachers who live in remote areas are not the same as teachers in the city in terms of accessing the internet or using current technology.

c. Having Limitations

Even though ChatGPT is able to provide answers very quickly, in terms of understanding it is unable to understand the deeper context, thus indicating inaccurate and irrelevant answers.

d. Impact on Social Skills

The presence of ChatGPT can reduce social interaction, especially between students and teachers or between students and students, and will produce students who are individualistic and tend to be selfish. (Supandi, 2024)

The rapid evolution of artificial intelligence (AI) has transformed multiple sectors, including education, where tools like ChatGPT have become pivotal in facilitating academic tasks. As AI technologies continue to advance, their integration into academic environments has led to both opportunities and challenges for student development (Fu & Weng, 2024). AI-based tools such as ChatGPT enable students to quickly access information, generate academic content, and even draft research papers with minimal effort. However, this convenience raises concerns about the potential erosion of critical and creative thinking skills, as students may become overly reliant on these systems (Zhang et al., 2024).

Creativity, defined as the ability to produce original and valuable ideas, is a crucial skill for academic success and future professional development (Acar & Runco, 2024). While AI tools can serve as cognitive enhancers, there is growing debate about their impact on students' intrinsic motivation and ability to think creatively. Scholars argue that AI-generated responses, which are based on pre-existing data patterns, might limit the depth and originality of student thought processes (Kleindorfer et al., 2021). This concern is particularly relevant in the Indonesian academic context, where the widespread use of ChatGPT among students has raised alarms about declining engagement in problem-solving and critical inquiry (Yakin, 2024).

Moreover, the cultural dimension of technology use in education cannot be overlooked. In Indonesia, the rapid adoption of digital learning tools has been driven by a combination of increased internet accessibility and the need for remote learning solutions during the COVID-19 pandemic (Andajani et al., 2024). This shift has amplified the reliance on AI platforms like ChatGPT, especially among university students. However, studies

indicate that this dependency could lead to a reduction in student autonomy, diminishing their capacity for independent research and creative expression (Simon, 2025). The Indonesian education system, which has traditionally emphasized rote learning, faces additional challenges in promoting higher-order thinking skills in this evolving digital landscape.

Another critical consideration is the ethical implications of AI usage in education. While ChatGPT offers efficiency in completing assignments and conducting research, it also raises issues regarding academic integrity and plagiarism (Gujjarappa & Chandrashekar, 2024). Students may be tempted to submit AI-generated content as their own work, bypassing the intellectual effort required for genuine learning. This raises concerns about the long-term impact of AI on student ethics and the authenticity of academic achievements. Institutions must, therefore, develop clear guidelines and ethical frameworks to govern AI usage in educational settings (Musolin et al., 2024).

This study aims to explore the broader implications of ChatGPT on student creativity within the Indonesian academic context. By focusing on how ChatGPT influences students' creative thinking abilities, the research seeks to fill a gap in the existing literature that has largely concentrated on its effects on critical thinking and academic performance. The findings will provide valuable insights into the dual role of AI as both an educational tool and a potential barrier to intellectual development. Additionally, the study will offer recommendations for educators and policymakers to balance the integration of AI in academic settings while fostering students' creative and independent thinking skills.

Several studies have examined the role of artificial intelligence, particularly ChatGPT, in education. For instance, research by (Cholvistaria & Gunawan, 2025) investigated the impact of ChatGPT on the critical thinking skills of informatics students, revealing both positive and negative consequences. The study found that while ChatGPT facilitates learning and provides quick access to information, it also diminishes students' ability to think critically and independently. Similarly, (Maharani et al., 2024) highlighted concerns about the potential negative impact of ChatGPT on academic integrity and the development of original thought among students. These studies contribute to the growing body of knowledge on AI's influence on education, but further exploration is necessary to understand its broader implications on student creativity.

While existing studies have explored the effects of ChatGPT on students' critical thinking and academic performance, there is a gap in research regarding its impact on the creativity of students, especially in non-technical fields. The current literature primarily focuses on the potential drawbacks of ChatGPT, such as its role in fostering dependence and reducing original thinking (Cholvistaria & Gunawan, 2025; Maharani et al., 2024). However, limited attention has been given to how ChatGPT affects the creative process in students across diverse academic disciplines. This research aims to fill this gap by analyzing the influence of ChatGPT on students' creativity in various learning contexts, particularly among Indonesian students.

The novelty of this study lies in its exploration of how ChatGPT affects the creativity of students, a dimension largely overlooked in previous research. By focusing on Indonesian students, particularly those in the Informatics study program at Atma Jaya University, this study provides a fresh perspective on the interplay between artificial intelligence and creative thinking in educational settings. Unlike existing studies that emphasize critical thinking and academic performance, this research uniquely examines how the use of ChatGPT may either stimulate or limit students' creative abilities, offering new insights into the broader educational implications of AI technologies.

The primary objective of this research is to investigate the impact of ChatGPT on the creativity of Indonesian students, specifically within the context of their academic work. By examining the positive and negative effects of ChatGPT on student creativity, this study aims to provide a deeper understanding of how AI tools can enhance or hinder creative thinking in academic environments. The findings will benefit educators and policymakers by offering recommendations for effectively integrating AI into the learning process while mitigating potential risks. Additionally, the study will contribute to the ongoing discourse on the role of technology in shaping the future of education, helping institutions create more effective teaching strategies that balance technological tools with the development of critical and creative thinking skills.

METHOD

In collecting data, the author uses a literature review *where* the author takes previous research as a source of data for the author which is certainly relevant to the topic the author raises. The research sources that the author takes are almost all from credible journals or websites, so that the truth of the data taken can be accounted for.

RESULTS AND DISCUSSION

In this study, the author uses data from the research results of Arwinda Pratama et al. at Atma Jaya University Yogyakarta in 2023 entitled "The Influence of ChatGPT on Critical Thinking of Class D Informatics Students, Class of 2023, Atma Jaya University Yogyakarta". (Pratama 2024) .

In the results of his research, it was found that the use of ChatGpt had an effect on the student learning process. ChatGpt is very helpful for students in solving college assignment problems, the use of ChatGpt makes students independent in finding out new material so that ChatGpt is considered to have a positive impact on students who

use it. However, the use of ChatGpt is considered to have to use regulations with the aim of preventing excessive use of ChatGpt which makes its users dependent. (Pratama 2024) .

The study also explains that although ChatGpt is a tool that is quite helpful in the world of education, it still needs to be careful in its use, there needs to be guidelines for procedures (*ethics*) in using ChatGpt in the world of education. Quoted from the study " *Holy or Unholy? Interview With Open AI's ChatGpt* " it is said that ChatGpt can inhibit critical thinking for each user, although on the other hand it can also help in generating new ideas. The originality and quality of writing using ChaGpt are considered very doubtful, because ChaGpt has limitations that are only based on algorithms. ChaGpt uses a *Machine Learning* (ML) system, namely imitating human behavior in solving every problem automatically. (Pratama 2024) .

The use of ChaGpt is considered to provide positive and negative aspects to the critical thinking skills of students as its users, it will produce positive results when used wisely which will provide new ideas. But it will provide negative things if not used wisely because it can hinder students' skills in terms of research and independent reasoning. Dependence on ChaGpt can result in a decrease in students' critical thinking skills because the need to dig deeper and develop understanding independently can be neglected. (Pratama 2024) .

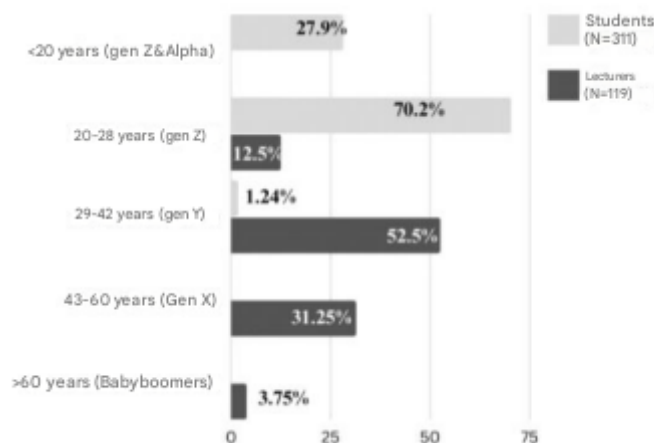
Figure 1 Use of ChatGpt by Informatics Students Class D Class 2023 Atma Jaya University Yogyakarta.

Type of Use	Respondent	Percentage
Carry out a task	15	50%
Learning Assistance	12	40%
Looking for Inspiration	25	83%
Search Engine	9	30%
Other	1	3%

In 2023, Arwindo et al. conducted a study on 39 Informatics study program students at Atma Jaya Yogyakarta University, class D, in terms of using ChatGpt. The results of the study showed that 15 out of 39 students used ChatGpt in doing assignments or 50 percent, while 12 people or 40 percent used chatGpt in learning assistance, 25 students or 83 percent of students used chatgpt to simply seek inspiration, 9 people or 30 percent used chatgpt as a search engine, and 1 person or 3 percent of the rest. (Pratama 2024) .

So, from the results of the study above, it shows that Atma Jaya Yogyakarta informatics study program students are very active in using chatgpt, even the results of the study show that 50 percent of students do their assignments using chatgpt. This shows that students no longer use creative thinking in doing college assignments, but have begun to rely on AI in the form of chatgpt. It is possible that in the next few years students will no longer use creative thinking in completing school assignments but only rely on AI in the form of chatgpt, this will have a major impact on students' thinking power which becomes rigid, loses creativity, and loses critical thinking.

Figure 2 Demographics of ChatGpt Usage 2023 in the Academic World.



From the data image above, it shows that Gen Z students or today's students use ChatGpt in their lectures with a presentation of 70.2 percent compared to Gen Y and Baby Boomer students. This shows that today's students or known as Gen Z are very dependent on ChatGpt in their lectures. (Niyu et al. 2024) .

ChatGPT is an artificial intelligence technology where the way it works is by processing data into a language that can be understood by humans by answering every question typed by its users. ChatGPT is designed to be an intelligent bot that can communicate similarly to humans. This paradigm shift occurs not only in the world of education but also in almost all aspects of human life. Artificial intelligence in the form of ChatGPT has undergone training in collecting big data from various sources on the internet in order to provide relevant and contextual responses when communicating with humans through conversation. (Pratama 2024) .

Some Types of Artificial Intelligence (AI)

a. Narrow artificial intelligence (ANI)

Narrow artificial intelligence is also called weak intelligence or special intelligence. It is called "narrow" or "weak" because this artificial intelligence still combines traditional software and AI. There are several weak or narrow artificial intelligences, namely; **First, Virtual Assistant**, an example of using a virtual assistant is setting reminders and answering simple questions. **Second, Computer Playing Batur**, an AI system *Deep Blue* for example, developed by IBM, in its use the AI system can analyze millions of possible steps and predict the best steps in just seconds. **Third, the Facial Recognition System**, this system is made to identify and verify each person's face based on facial features either through photos or videos. **Fourth, Autonomous Vehicles**, this system functions to drive cars automatically on the road, this system can navigate the road and avoid obstacles in front based on data collected through sensors. (Adacomputerscience 2024) .

b. Artificial General Intelligence (AGI)

This artificial intelligence is also called strong intelligence or strong AI, the name "strong" is attached because this intelligence is able to do different things at the same time, for example this system is able to coordinate information from various fields such as biology, meteorology, and economics. However, this intelligence is still a theoretical goal that has not been realized. (Adacomputerscience 2024) .

c. Super Artificial Intelligence (ASI)

This artificial intelligence is an artificial intelligence that is designed to surpass human cognitive abilities in almost all aspects of life. Artificial general intelligence and super artificial intelligence are interrelated with each other. Theoretically, this super artificial intelligence can operate independently like humans, can solve problems and find solutions by itself. This super artificial intelligence is being developed both in terms of storage capacity and processing power so that it is considered that it will be able to match humans and even exceed humans. (Adacomputerscience 2024) .

Analysis

Artificial intelligence is evidence of the progress of human civilization on earth, artificial intelligence is also evidence that humans will always develop over time. Human ability in the form of creative thinking in producing various kinds of technology should be grateful, because thanks to this creative thinking humans can be in the modern civilization phase like today.

But on the other hand, technological advances, one of which is artificial intelligence, not only provide positive things for the development of human life in the future but can also provide negative things. Artificial intelligence will provide positive things if humans use it according to its portion and according to its function and also do not depend on the system. ChatGPT for example will be very positive when students or students use it as a learning tool both in composing writing, creating interesting topics, and also as a tool to test the ability of creative thinking.

On the other hand, ChatGPT will have a negative impact when students or college students depend on it, where in terms of work assignments for example always relying on ChatGPT, just by entering the title into ChatGPT it will automatically compile into a neatly arranged assignment or writing. This will have an impact on the creativity of students and humans, where students or college students are no longer able to think, will experience limitations in terms of critical power and will even make students very lazy.

CONCLUSION

ChatGPT is one of the artificial intelligences that is currently developing among students and college students, ChatGPT is often used by students and college students when they do assignments. ChatGPT provides convenience for its users, where just by entering a title for example, it will automatically arrange the words into a writing exactly as if it were composed or worked on by humans. Or just asking for example, with the intelligence system will provide answers that are considered very accurate.

ChatGPT has limitations and shortcomings, because ChatGPT is based on algorithmic data, when the words we enter, for example, are not in the algorithm, it will give the wrong or even nonsense answer, and also often ChatGPT displays words that are difficult to understand or not found in everyday life, so that users will feel confused.

REFERENCES

- Acar, S., & Runco, M. A. (2024). Creativity assessment: reactions, reflections, and directions for future research. In *Handbook of Creativity Assessment* (pp. 335–361). Edward Elgar Publishing.
- Adacomputerscience. (2024). *Kategori Kecerdasan Buatan*. Adacomputerscience.Org.
- Andajani, K., Karmina, S., & Rahmania, L. A. (2024). *Inclusive, Sustainable, and Transformational Education in Arts and Literature: Proceedings of the 7th International Seminar on Language, Education, and Culture, (ISOLEC, 2023), July 07–08, 2023, Malang, Indonesia*. Taylor & Francis.
- Cholvistaria, M., & Gunawan, A. (2025). Pengaruh artificial intelligence (AI) terhadap Berpikir Kritis Mahasiswa. *POACE: Jurnal Program Studi Adminitrasi Pendidikan*, 5(1), 1–8.
- Fu, Y., & Weng, Z. (2024). Navigating the ethical terrain of AI in education: A systematic review on framing responsible human-centered AI practices. *Computers and Education: Artificial Intelligence*, 100306.
- Gujjarappa, N. L., & Chandrashekar, M. (2024). Trends in Plagiarism: A Bibliometric Approach. *DESIDOC Journal of Library & Information Technology*, 44(4).
- Kleindorfer, D. O., Towfighi, A., Chaturvedi, S., Cockcroft, K. M., Gutierrez, J., Lombardi-Hill, D., Kamel, H., Kernan, W. N., Kittner, S. J., & Leira, E. C. (2021). 2021 guideline for the prevention of stroke in patients with stroke and transient ischemic attack: a guideline from the American Heart Association/American Stroke Association. *Stroke*.
- Kumanireng, H. Y. N. L. (2022). *Periode dan Ciri Zaman Modern*. Kompasiana.Com.
- Maharani, D. A., Adelina, R., & Aini, A. Q. (2024). Supandi.(2024). Molecular Docking and Dynamic Simulation of Erythrina fusca Lour Chemical Compounds Targeting VEGFR-2 Receptor for Anti-Liver Cancer Activity. *Jurnal Kimia Valensi*, 10(1), 106–114.
- Musolin, M. H., Serour, R. O. H., Siregar, M., Hamid, S. A., Ismail, A., Huda, M., & Rohim, M. A. (2024). Developing personalised Islamic learning in digital age: pedagogical and technological integration for open learning resources (olr). *International Congress on Information and Communication Technology*, 11–25.
- Niyu, Desideria Dwihadiah, Azalia Gerungan, & Herman Purba. (2024). Penggunaan ChatGPT di Kalangan Mahasiswa dan Dosen Perguruan Tinggi Indonesia. *CoverAge: Journal of Strategic Communication*, 14(2), 130–145. <https://doi.org/10.35814/coverage.v14i2.6058>
- Pratama, A. S. (2024). *Pengaruh ChatGPT Terhadap Berpikir Kritis Mahasiswa Informatika Kelas D Angkatan 2023 Universitas Atma Jaya Yogyakarta Arwinda Sendy Pratama, Gracia Putri Aura, Matius Abimanyu DA, Yoseph Delimda. December 2023, 0–9*. <https://doi.org/10.13140/RG.2.2.14841.89443>
- Simon, C. (2025). Controlling Repurchase by Increasing Service Excellent in Education Sectors. *Journal of Current Research in Business and Economics*, 4(1), 43–72.
- Supandi. (2024). *ChatGPT dalam Pendidikan: Pro dan Kontra serta Dampak Sosialnya*. Readmore.
- Yakin, M. (2024). Exploring role of perceived value of technology and brand recognition on purchase intention of Japan electronic products. *Journal of Current Research in Business and Economics*, 3(1), 246–278.
- Zhang, X., Yu, P., Ma, L., & Liang, Y. (2024). How the human-like characteristics of AI assistants affect employee creativity: a social network ties perspective. *International Journal of Human–Computer Interaction*, 1–19.