

Academic Ethics for Using the ChatGPT AI Platform in Learning in Higher Education

Hasrul Hasrul^a, Hasbullah Malau^b, Rusdi Rusdi^c and Mery Lyani Kusuma Dewi^d
Padang State University, Prof. Dr. Hamka Street, Padang City, Indonesia

Keywords: AI, ChatGPT, Academic Ethics.

Abstract: The invention of AI (Artificial intelligence) ChatGPT becomes a prominent issue in learning in higher education because, on the one hand, it rapidly eases and facilitates both students' and lecturers' tasks such as writing papers or theses, answering exams, even writing scientific articles. On the other hand, it has considerable drawbacks as it becomes a shortcut for college students to complete their tasks without having to study properly. ChatGPT is potential to decline the quality of graduates; therefore, academic ethics of using ChatGPT in learning is required. This research aimed to find scientific conclusions about the benefits, negative impacts and academic ethics of using AI (*Artificial intelligence*) chatGPT in learning. This is a qualitative research using a descriptive method where objects or phenomena are described in depth. The source of primary data of this research were experts in educational technology, information technology, professors of various scientific fields, and students using ChatGPT. While journals, books, videos, and other relevant documents were used as the secondary data. Data analysis was conducted through a descriptive analysis approach, where data were collected, grouped, processed and arranged according to the object or phenomenon observed. This research found that the use of ChatGPT brings great benefits to learning, but at the same time it is believed to have negative impacts to degrade the quality of graduates. Thus, it is crucial to have academic ethics in using ChatGPT in the learning and teaching process in universities.

1 INTRODUCTION

Artificial intelligence has developed rapidly in recent years, causing changes in several disciplines, one of which is education (Xu, L.; Sanders, L.; Li, K.; Chow, 2021). ChatGPT is an AI-based tool developed by Open AI that is able to enable text generation based on user requests. This technology is designed to understand the nature of language so that it produces intelligent and relevant responses to user questions (Halaweh, 2023). Both students and teachers can benefit from these exciting options, which include individualized feedback, enhanced accessibility, interactive discussions, lesson planning, evaluation, and a variety of novel approaches to challenging ideas. ChatGPT is viewed as a tool that may fix writing mistakes and push students to keep improving their writing skills (Hosseini et al., 2023). Only when utilized in a pedagogically sound way can technologies like ChatGPT realize their full potential.

Numerous views assert the significance of a logical process for embracing and modifying technological advancements (Fütterer et al., 2023).

By reducing the negative effects of its use, ChatGPT's educational potential can be fully realized. Utilizing AI responsibly and effectively in order to navigate a world where technological adaptation is happening at an ever-increasing rate (Zhu & Wang, 2023). The use of ChatGPT provides recommendations for students to receive teaching that is tailored to their individual needs. In this case, ChatGPT can provide detailed answers on how to solve various problems asked by students (Su & Yang, 2023).

Although ChatGPT has provided much success in the world of education, in fact ChatGPT brings threats and negative impacts with its ability to provide specific answers to questions submitted by users (Lo, 2023). ChatGPT presents a number of risks to the educational system, including the ability to cheat on online tests, the production of texts that seem human, a decline in critical thinking abilities, and trouble assessing data produced by ChatGPT (Rahman & Watanobe, 2023). A study by Mogali (2023) in (Heng, Kimkong, 2021) found that in the initial evaluation, ChatGPT was inconsistent in responding with accurate information. The same thing was also

stated by (Chinonso, Theresa, & Aduke, 2023), According to their statement, it was discovered that ChatGPT is sensitive to variations in the phrase entered for the same query. The following are some drawbacks that could result from using ChatGPT in higher education: Dependency on technology comes first. Students may become overly reliant on technology as a result of using ChatGPT for learning, losing fundamental abilities like writing and reading. Second, minimizing social contact. Overuse of ChatGPT by students as a source of knowledge can decrease social contact between students and between students and instructors. Privacy issues come in third.

Chat GPT is a chatbot feature developed by Open AI, an American research company to develop artificial intelligence. Chat GPT (*Generative Pre-training Transformer*) is an artificial intelligence that operates through dialogue. It uses straightforward methods, like questioning a teacher in class, however Chat GPT allows for quick and automatic answers (Hutapea & Rantung, 2024). Through the use of Chat GPT, users can interact, ask questions, and receive answers quickly. The advantages of Chat GPT include providing accurate and relevant information to the preferences of its users. A fast response can provide all the answers users need, can filter negative requests, is able to use natural grammar, so that the answers produced are correct even though they use different questions. The disadvantages of Chat GPT are that it has limited understanding, has not been able to shift creative work, has not been able to distinguish between facts and opinions, and requires a stable internet network. That is one of the reasons why students use Chat GPT in creating scientific works such as essays, articles, and articles. Utilizing GPT Chat for article creation has a big impact on how GPT Chat is used in the educational field (Fatoni, Ferdinand, Sajidin, & Kurnia, 2024).

However, uncontrolled use of ChatGPT can endanger student privacy and can allow the collection of personal data by third parties. (Sallam, nd) reviewed 60 articles about ChatGPT, one of which was in the world of education, found that ChatGPT can cause plagiarism to incorrect responses and inaccurate citations. As a result, a policy that governs ChatGPT use in higher education is required. Based on the description above, the formulation of the research problem is as follows:

1. How is the use of the AI ChatGPT platform beneficial for students? In learning process?
2. What are the possible threats from the use of AI?
3. How are academic ethics in the use of AI ChatGPT by students in learning process?

2 METHOD

The type of research planned is qualitative descriptive research with an emphasis on the grounded theory model. This type of research was chosen with the aim that the data obtained in more depth. Through this approach, the researcher wants to deeply link one data with another data in analyzing the use of chatGPT in the learning process by students and its relationship to the applicable academic ethics standards at Padang State University. The research informants were determined by purposive sampling, namely: (1) Educational Technology Experts (2) Character and Value Education Experts and (3) Educational Psychology Experts, (4) Elements of university leadership, and (5) UNP students. In-depth interviews, focus group discussions (FGD), and documentation studies were used to gather data (Fiantika et al., 2022). To ensure the validity of the data, in addition to using grounded theory steps, namely: (1) open coding; (2) axial coding; (3) selective coding. In this regard, the research process that will be carried out can be described as follows:

3 RESULT AND DISCUSSION

3.1 Benefits of Using the ChatGPT Platform in Learning

In 2018, OpenAI created the deep learning model known as ChatGPT (*Generative Pre-trained Transformer*). Compared to humans, who are limited in their ability to read extensive literature and discern relationships between seemingly disparate pieces of information, ChatGPT, as an AI, has superior advantages in terms of rapidly comprehending information in depth and connecting evidence to reach conclusions. Originally designed as a generative model, ChatGPT can be used to produce text that is suitable for the conversational context (Setiawan, 2023b).

Table 1: Research Process.

No	Activity	Outcomes to be Achieved	Method
1	Early Stage Analysis dan memetakan pengetahuan dan pemahaman informan tentang AI chatGPT terutama sekali terkait dengan penggunaan chatGPT sebagai tehknolgi yang dapat berperan dalam Pembelajaran	The results of the analysis and mapping of AI chatGPT are obtained, especially in relation to the use of chatGPT as a technology that can play a role in learning.	<ul style="list-style-type: none"> - Indepth interview - Documentation study - Content analysis
2	Positive and Negative Impact Analysis	Obtained factual impact of the positive impact and negative impact of the use of chatGPT by students in the learning process.	<ul style="list-style-type: none"> - Indepth interview - FGD - Documentation study - Literature study
3	Academic Ethics Analysis	Obtaining factual data on academy ethical guidelines in the use of chatGPT	<ul style="list-style-type: none"> - Indepth interview - FGD - Documentation study - Literature study
4	Analysis of ChatGPT Usage	Obtained a conceptualization of the use of chatGPT in accordance with the academic ethics of learning in higher education (UNP)	<ul style="list-style-type: none"> - Indepth interview - FGD - Documentation study - Literature study

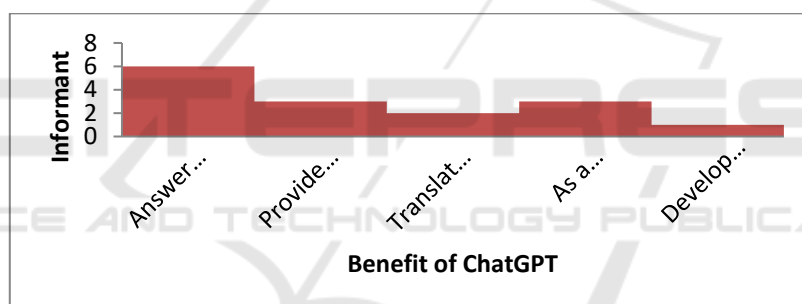


Figure 1: Benefits of Using ChatGPT.

The Chat GPT dataset is a natural language powered by OpenAI using pre-training and fine-tuning techniques on a large dataset. The dataset used to train Chat GPT is a collection of texts from various sources on the internet, such as news articles, books, blogs, and other websites (Setiawan, 2023a). Chat GPT has become one of the technologies used as a weapon by several groups, one of which is students because it can help them to do assignments or get information easily (Hasim, 2023). The following is a description of the statement of attitude regarding the use of ChatGPT in the world of education:

According to the study's findings, academics and intellectuals in Indonesia and overseas-more especially, those in Malaysia, a neighboring country-consider the use of AI ChatGPT in education to be

beneficial. According to the study's findings, academics and intellectuals in Indonesia and overseas view the use of AI ChatGPT in education favorably. Based on seven informants who provided statements regarding the positive impact of using ChatGPT, six of them stated that the benefits of ChatGPT were able to answer questions with a high level of accuracy. Meanwhile, three of the other seven informants stated that chatGPT had been able to provide information for its users. Based on the chart above, a number of benefits have been found that can be obtained from using ChatGPT. This is consistent with the findings of studies conducted by (Oranga, 2023) which explains that AI technology makes it simple for people to find different kinds of information. Artificial intelligence



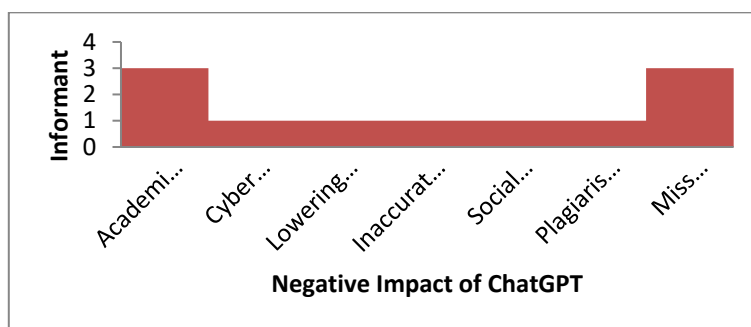


Figure 2: Negative Impact of ChatGPT.

will respond to your inquiries based on the relevant queries. The existence of ChatGPT technology creates chances to use this AI chatbot in Indonesian education, particularly in fostering the competencies (skills) that students will require in the twenty-first century. Critical thinking, teamwork, communication, and creativity are the six characteristics that students in the Era Education 4.0 must possess. Two more supporting competencies are character education and citizenship (Suhawarman, 2023).

ChatGPT has the potential to significantly improve academics and librarianship in novel ways. However, in order to collaborate using this technology to enhance the caliber of work in order to generate new scientific information and instruct future experts, it is crucial to think about how to use it responsibly and ethically.

Chat GPT can also provide a more flexible experience, such as providing solutions or recommendations to users for daily tasks. With this feature, students can ask for advice or recommendations for answers to their college assignments, another ability is the ability to learn different language patterns and styles from various sources of information. Chat GPT can provide a variety of responses and imitate many different language styles. With this feature, Chat GPT can be used as a reference source for completing student assignments (Fuchs, 2023). Based on all aspects that play a role in achieving learning objectives, ChatGPT can be relied on as a new learning technology, Abna gave an example, courses in the form of concepts such as the basics of communication. When studying something conceptual, chatGPT can be a reference for students. However, in the next process when it comes to the stage of high-level thinking, it requires elaboration assisted by lecturers or teachers. From the practical side of the learning process, chatGPT also has indirect benefits, namely it can be a reference for students. The benefits of ChatGPT allow students to

collect data, analyze, simulate, experiment so as to produce more innovative results (Zhai, 2023).

3.2 Negative Impacts of Using ChatGPT in Learning in Higher Education

Teachers are debating ChatGPT's remarkable capacity to carry out challenging educational activities (Baidoo-Anu And Owusu Ansah 2023). Here, researchers report on their investigation of the potential drawbacks of using chatGPT during the higher education learning process.

Based on the description of the statement above, it was found that from six informants it was found that the highest negative impact of using chatGPT was that it resulted in academic dishonesty and the main cause of misinformation. The use of ChatGPT and AI can save time in making assignments, papers and papers, but the use of ChatGPT is very prone to plagiarism and students become uncreative and lazy to think. In the end, students will become accustomed to committing academic dishonesty by continuously plagiarizing in order to achieve ease in completing the tasks given (Sullivan, Kelly, & McLaughlan, 2023). ChatGPT can only respond to user inquiries, in contrast to humans who are able to look up reliable information from a variety of sources. Therefore, human supervision and interaction are still required even if this feature can deliver solutions based on user demands. Furthermore, there is a chance that false information will be provided. Training data is the foundation of ChatGPT, and if the training data is biased or not representative, the model's output results may likewise be skewed. Users may not always grasp the output of the ChatGPT model, and if they base their decisions incorrectly, this could result in more serious mistakes and issues. This will undoubtedly have an impact on the responses, which might include inaccurate information (M. Mijwil et al., 2023).

According to a poll, 53% of American students use ChatGPT to compose papers, while nearly 89% utilize it to finish tasks. Furthermore, 22% of students utilize Chat GPT to write scientific papers, and 48% of students use it for tests (McGee, 2023). Due to this phenomena, ChatGPT has been outlawed by a number of foreign colleges and schools, which view it as a "*threat*" and a "*educational plague*." As quoted in the article (Setiawan, A., & Luthfiyani, 2023), according to Rosenzweig, in Los Angeles, the Unified School District and the New York City Department of Education banned ChatGPT use in their schools in December 2022, citing the fact that ChatGPT negatively affects students' development of critical thinking and problem-solving skills, which are essential for their future academic success.

Some experts have raised concerns about the negative impacts of using ChatGPT and other AI technologies in academia. Here are some of the views that are often expressed:

1. **Reduction in Critical Thinking Skills**
According to Ethan Mollick, a professor at the Wharton School at the University of Pennsylvania, AI like ChatGPT risks making students too dependent on the tool to complete their academic assignments, which could ultimately reduce critical and analytical thinking skills. Mollick emphasized that students should continue to develop their own thinking without relying entirely on AI.
2. **Increased Risk of Plagiarism**
Sarah Elaine Eaton, an academic ethics expert at the University of Calgary, argues that the use of AI can increase the risk of plagiarism, both intentional and unintentional. ChatGPT can produce text that looks like the original writing, and if students do not provide proper attribution, this can violate academic ethics and tarnish the reputation of educational institutions.
3. **Decreased Ability to Write and Express Ideas**
Mark Warschauer, a professor at the University of California, Irvine, suggests that relying on ChatGPT could undermine students' writing skills. He says students may be missing out on developing their skills in constructing arguments and communicating ideas well if they are accustomed to leaving the process to AI.
4. **Risk of Spreading Inaccurate Information**

Gary Marcus, an AI researcher and author, stated that ChatGPT has limitations in filtering accurate information. In an academic context, this can be dangerous because students may use incorrect or unverified information from ChatGPT, which can affect the quality and academic accuracy of their assignments or research.

5. **Limiting the Development of Research Capabilities**

Sam Wineburg, a digital literacy expert from Stanford University, said that the use of AI can reduce the urge to do thorough research. Students who frequently use ChatGPT may tend to look for instant answers rather than trying to understand the process of research and deep exploration of information, which is important in the academic world.

These expert views underline the importance of caution in using ChatGPT in the academic world so that its negative impacts can be minimized.

3.3 Ethics of Using ChatGPT in Learning at Universities

The use of ChatGPT in educational settings in an ethical and responsible manner is a complicated, multifaceted topic that calls for various strategies in each transdisciplinary field (Mhlana, 2023). Chat GPT actually provides convenience for students in compiling this paper, it needs to be considered and continue to use ethics in writing the appropriate paper. Prof. Nurul Huda said that it cannot be said that there will be no misuse of AI chatGPT by students or students in fulfilling the demands of their college assignments, such as imitation of academic reports and others. Therefore, there must be guidelines for the use of AI that must be determined and adhered to. Mechanisms and systems to prevent and monitor the implementation of imitation require good planning. Nurul said that in general, Universities in Malaysia have taken a wise stance on the use of AI, and have socialized the use of AI to their citizens.

Prof. Abna Hidayati, an educational technology expert from Padang State University, emphasized the importance of having academic ethics regulations so that the use of ChatGPT remains positively beneficial and can avoid its negative impacts. More simply, Abna gave an example of academic ethics that must be created by universities, namely that students are allowed to use ChatGPT by providing a discussion space. It becomes important when AI chatGPT has become a daily part of the learning process, to ensure that students understand the lecture material, for

example, by offering tests that evaluate how well people recall things like specific dates, topics, or historical occurrences, assessing the quality of the references used, and boosting group projects and conversation. Prof. Abna came to what he thought was very urgent, namely, universities need to immediately create clear and measurable ethical rules for using chatGPT. Lecturers are also required to understand and get used to using AI chatGPT so that they can detect students who are being dishonest by using chatGPT in doing their college assignments.

Chair of the University of Indonesia's Board of Professors, Prof. Tuti Krisnowo, revealed that several universities have also taken policies related to regulating the use of AI. For example, lecturers at George Washington University have stopped giving written homework and they have returned to the traditional mechanism. All is done by writing papers and exams in class with pen and paper. Thousands of lecturers at Harvard University, University of Oxford, and even proposed the implementation of the GPT Zero policy, a program that can quickly detect text generated by artificial intelligence. Turnitin was initially also unable to detect GPT. However, at this time there is the latest Turnitin AI which is claimed to be able to detect GPT.

According to Dr. Fuad Abdul Ghani, in responding to GPT chat wisely, a discussion is needed regarding the ethics of using GPT chat, establishing clear and correct guidelines in using GPT, using tools that produce realistic text through plagiarism detection. Here there is turnitin with a new feature that is able to detect that the work is real and not a copy paste from GPT chat, to test students' ability to master the material, a presentation process is carried out, providing space for students to link several fields such as social, economic and others even though this is additional work for the Lecturer. Students may find ChatGPT to be a helpful resource in overcoming these obstacles. ChatGPT can be used to communicate, ask questions, or have discussions with students, as well as to help them understand the material, answer inquiries, or offer guidance on how to solve academic challenges because of its capacity to produce realistic and complicated language. Nevertheless, there are barriers and moral dilemmas associated with students using ChatGPT. For instance, worries about learning automation, the veracity of the text produced, and user data privacy and security. Consequently, a thorough comprehension of Chat GPT's application in an academic setting, as well as its possible advantages and consequences for students.

In terms of the use of ChatGPT in the educational realm, it is necessary to prepare a regulations and policies based on ethics and morals. Here are some examples of academic ethics formulations in the use of ChatGPT in a university environment. This formulation can be a guide in ensuring that the use of ChatGPT is carried out ethically and supports the development of knowledge and academic integrity in higher education.

1. Use as an Aid, Not a Substitute for Understanding

ChatGPT should be used as a tool to help understand concepts or develop ideas, not as a substitute for independent study or personal understanding. Students must remain responsible for understanding and developing the material themselves.

2. Avoid Plagiarism

Every time students use text or ideas produced by ChatGPT, they must cite it as a source. The use of information produced by ChatGPT without attribution is considered plagiarism and violates academic integrity.

3. Implementation in the Task and Assessment Framework

Students must always comply with the rules and instructions of lecturers or universities regarding the use of AI tools. If an assignment requires original work without the help of AI tools, students should avoid using ChatGPT.

4. Development of Critical Thinking

Students are expected to use ChatGPT critically, evaluate the information provided, and not accept every result without review. Students must verify the accuracy of the information and judge its relevance based on the academic context.

5. Restrictions on Use for Sensitive or Covert Research

ChatGPT should not be used to generate or access sensitive, confidential, or personal information related to research without permission. Students must ensure that the use of AI tools remains in accordance with academic privacy and security rules.

6. Acknowledgement of ChatGPT Limitations

Students need to understand that ChatGPT is not a perfect source and may produce inaccurate information. Therefore, the information given must always be checked and confirmed for accuracy from trusted academic sources.

The use of ChatGPT as a learning aid in higher education has great potential to enrich the learning experience and improve student understanding. However, the importance of ethics in its use cannot be ignored. Here are some reasons why ethics must be upheld in the use of ChatGPT in academic environments:

1. Encourage the Originality of Academic Work

ChatGPT can be a source of inspiration and reference, but students must ensure that their work remains original. Relying on ChatGPT to produce work without personal understanding and interpretation can cloud the academic value and integrity of the work.

2. Minimize Over-Dependence

ChatGPT is an effective tool, but its use must be wise so as not to reduce students' critical thinking skills and analytical abilities. Students still need to try to understand the material and complete assignments independently, using ChatGPT only as an addition, not the main source.

3. Avoiding Plagiarism Violations

Using text generated by ChatGPT without proper acknowledgement can be considered plagiarism. Therefore, it is important for students to always cite sources if they use ideas or information provided by ChatGPT, maintaining academic ethics and the credibility of their writing.

4. Developing Academic Responsibility

By implementing ethics of use, students learn to be responsible for how they use technology in learning. This will shape good habits in seeking information, processing data, and producing work that truly reflects their own understanding.

By implementing ethics in the use of ChatGPT, students can utilize this technology positively and responsibly, supporting academic development with integrity and meaning in higher education.

Therefore, using ChatGPT can speed up and enhance learning through comprehension of the benefits and hazards as well as the prudent application of AI. Students are able to make good use of modern technology while avoiding any possible hazards. One way to ensure proper use is to understand the limitations of ChatGPT's capabilities. Despite having excellent capabilities in producing text, ChatGPT cannot replace human interaction in decision making, complex. Therefore, users should

use ChatGPT only as an aid and continue to rely on human judgment for decisions. important. In addition, users must also pay attention to the data sources used by ChatGPT. ChatGPT learns human language through data provided by humans. Therefore, the data sources used by ChatGPT can affect the results produced. It is important for users to ensure that the data sources used are credible and accountable.

4 CONCLUSION

Apart from the benefits or positive impacts, there are also weaknesses which are the negative impacts of using GPT in the world of education, including causing violation of academic rules and ethics, plagiarism issues and decreased reasoning power, critical and creative attitudes. In the world of education, especially for students in Higher Education, the use of GPT chat will have a fatal impact if not managed properly. This is proven by the existence of GPT chat, students can get faster and more accurate work results without considering the creative ideas or ideas that exist in them. In addition, this also allows for plagiarism of other people's work because students copy-paste data that has been inputted into AI. If this is not addressed immediately, it will affect the profile of academic graduates who are incompetent and unprofessional. In addition, the use of AI technology can also cause cyber crime. The emergence of applications such as deepfake, voice cloning does provide benefits on the one hand but on the other hand it can actually be misused by certain individuals so that cyber crime arises in the form of fraud cases from the results of modifying the victim's face or voice forgery which can harm many parties.

The use of GPT chat is something that cannot be avoided because it is in accordance with the development of the times and technological advances that are increasingly sophisticated every decade. The use of GPT chat can advance the next generation if used in the right way and rules but can also destroy the next generation if not used properly. In terms of educational progress that prioritizes technology in every learning process, ethics are needed in the use of AI technology, including providing limitations in the use of AI for students through presentation sessions in class to improve students' reasoning and creativity in understanding the material through delivery in front of the class, opening discussions on each material by linking it to issues or problems that are relevant to the topic of study. Not only that, this discussion can also be done in groups so that students

can develop their own ideas and thoughts so that creative thinking arises from the results together.

REFERENCES

- BAIDOO-ANU, D., & OWUSU ANSAH, L. (2023). Education in the Era of Generative Artificial Intelligence (AI): Understanding the Potential Benefits of ChatGPT in Promoting Teaching and Learning. *Journal of AI*, 7(1), 52–62. <https://doi.org/10.61969/jai.1337500>
- Chinonso, O. E., Theresa, A. M.-E., & Aduke, T. C. (2023). ChatGPT for Teaching, Learning and Research: Prospects and Challenges. *Global Academic Journal of Humanities and Social Sciences*, 5(02), 33–40. <https://doi.org/10.36348/gajhss.2023.v05i02.001>
- Fatoni, P., Ferdinand, I., Sajidin, F., & Kurnia, M. D. (2024). Pemanfaatan Teknologi AI dan Chat GPT dalam Penulisan Artikel Mahasiswa. *Jurnal Bahasa, Sastra Dan Pengajaran*, 3(April 2024), 144–149.
- Fuchs, K. (2023). Exploring the opportunities and challenges of NLP models in higher education: is Chat GPT a blessing or a curse? *Frontiers in Education*, 8. <https://doi.org/10.3389/educ.2023.1166682>
- Fütterer, T., Fischer, C., Alekseeva, A., Chen, X., Tate, T., Warschauer, M., & Gerjets, P. (2023). ChatGPT in education: global reactions to AI innovations. *Scientific Reports*, 13(1), 1–14. <https://doi.org/10.1038/s41598-023-42227-6>
- Halaweh, M. (2023). ChatGPT in education : Strategies for responsible implementation. 15(2).
- Hasim, dkk. (2023). PENGARUH PENGGUNAAN CHAT GPT TERHADAP MINAT BACA MAHASISWA. *Edutech: Jurnal Teknologi Pendidikan*, 2(3).
- Heng, Kimkong, K. S. (2021). of Educational Research. *Cambodian Journal of Educational Research*, 3(1).
- Hosseini, M., Gao, C. A., Liebovitz, D. M., Carvalho, A. M., Ahmad, F. S., Luo, Y., ... Kho, A. (2023). An exploratory survey about using ChatGPT in education, healthcare, and research. *PLoS ONE*, 18(10 October), 1–14. <https://doi.org/10.1371/journal.pone.0292216>
- Hutapea, G. L., & Rantung, J. (2024). Hubungan Persepsi Mahasiswa Keperawatan dengan Sikap Penggunaan Chat GPT. *Jurnal Penelitian Inovatif*, 4(2), 519–528. <https://doi.org/10.54082/jupin.350>
- Lo, C. K. (2023). What Is the Impact of ChatGPT on Education? A Rapid Review of the Literature. *Education Sciences*, 13(4). <https://doi.org/10.3390/educsci13040410>
- M. Mijwil, M., Hiran, K. K., Doshi, R., Dadhich, M., Al-Mistarehi, A.-H., & Bala, I. (2023). ChatGPT and the Future of Academic Integrity in the Artificial Intelligence Era: A New Frontier. *Al-Salam Journal for Engineering and Technology*, 2(2), 116–127. <https://doi.org/10.55145/ajest.2023.02.02.015>
- McGee, R. W. (2023). Is Chat Gpt Biased Against Conservatives? An Empirical Study. In *An Empirical Study*.
- Mhlanga, D. (2023). Open AI in Education, the Responsible and Ethical Use of ChatGPT Towards Lifelong Learning. *SSRN Electronic Journal*, (February). <https://doi.org/10.2139/ssrn.4354422>
- Oranga, J. (2023). Benefits of Artificial Intelligence (ChatGPT) in Education and Learning: Is Chat GPT Helpful? *International Review of Practical Innovation, Technology And Green Energy*, 3(3), 46–50. Retrieved from <https://radjapublika.com/index.php/IRPITAGE>
- Rahman, M. M., & Watanobe, Y. (2023). ChatGPT for Education and Research: Opportunities, Threats, and Strategies. *Applied Sciences (Switzerland)*, 13(9). <https://doi.org/10.3390/app13095783>
- Sallam, M. (n.d.). The Utility of ChatGPT as an Example of Large Language Models in Healthcare Education, Research and Practice: Systematic Review on the Future Perspectives and Potential Limitations.
- Setiawan, A., & Luthfiyani, U. K. (2023). Penggunaan ChatGPT Untuk Pendidikan di Era Education 4.0: Usulan Inovasi Meningkatkan Keterampilan Menulis. *JURNAL PETISI (Pendidikan Teknologi Informasi)*, 4(1), 49–58.
- Setiawan, dkk. (2023a). Meningkatkan Keterampilan Menulis. *Jurnal PETISI*. 4(1) Setiawan, dkk. (2023). Peran Chat Gpt (Generative Pre-Training Transformer) Dalam Implementasi Ditinjau Dari Dataset. *INNOVATIVE: Journal Of Social Science Research*, 3(3).
- Setiawan, dkk. (2023b). Penggunaan ChatGPT Untuk Pendidikan di Era Education 4.0: Usulan Inovasi Meningkatkan Keterampilan Menulis. . . *Jurnal PETISI*, 4(1).
- Su, J., & Yang, W. (2023). Unlocking the Power of ChatGPT: A Framework for Applying Generative AI in Education. *ECNU Review of Education*, 6(3), 355–366. <https://doi.org/10.1177/20965311231168423>
- Suhawarman, W. (2023). Pemanfaatan Chat GPT dalam Dunia Pendidikan. *Journal Education Research and Development*, 7(2).
- Sullivan, M., Kelly, A., & McLaughlan, P. (2023). ChatGPT in higher education: Considerations for academic integrity and student learning. *Journal of Applied Learning and Teaching*, 6(1), 31–40. <https://doi.org/10.37074/jalt.2023.6.1.17>
- Xu, L.; Sanders, L.; Li, K.; Chow, J. C. L. (2021). Chatbot for Health Care and Oncology Applications Using Artificial Intelligence and Machine Learning: Systematic Review. *JMIR Cancer*, 7, e27850.
- Zhai, X. (2023). ChatGPT and AI: The Game Changer for Education. *AI4STEM Education Center*, (March), 1–5. Retrieved from <https://ssrn.com/abstract=4389098>
- Zhu, C., & Wang, M. (2023). How to harness the potential of ChatGPT in education ? Recommended citation : Zhu , C ., Sun , M ., Luo , J ., Li , T ., & Wang , M . (2023). How to harness the How to harness the potential of ChatGPT in education ? Chenjia Zhu Jiutong Luo Tianyi Li Min. 15(2), 133–152.