

**‘Write a paper on AI Plagiarism’: An Analysis on ChatGPT and its impact on Academic
Dishonesty in Higher Education**

Alexis Tatzel

WRT 102

Lasell University

Debbie Mael

April 12, 2023

Abstract

ChatGPT is the newest player in the digital world of Artificial Intelligence. While ChatGPT is a remarkable Large Language Model, students have been exploiting its power to use in plagiarizing assignments. AI plagiarism is a new issue that many educators are unfamiliar with navigating. However, this does not mean that technology should be removed from the classroom. Instead, ChatGPT and other forms of AI should be introduced into lesson plans, with strict consequences for students who use the AI to plagiarize.

Keywords: ChatGPT, AI, Tokenization, Plagiarism, Watermark

‘Write a paper on AI Plagiarism’: An Analysis on ChatGPT and its impact on Academic Dishonesty in Higher Education

“Plagiarism, the act of using someone else's work or ideas without giving proper credit, has been a concern in academic communities for centuries. With the rapid advancement of technology and the increasing availability of digital information, plagiarism has become even more prevalent and challenging to detect. Artificial intelligence (AI) offers new opportunities for addressing the problem of plagiarism but also raises new ethical and practical concerns. A new, prevalent issue that is concerning academic communities is how easy and accessible AI and AI plagiarism is for students in higher education.”

For example, the paragraph above was not written by a human, but by OpenAI’s newest Large Language model, ChatGPT. Simply by entering a prompt, such as “Write a paper on AI plagiarism” ChatGPT can give the end user the paper they need in seconds. Due to rapid technological advancements like chatbots in the past few years, academic dishonesty has skyrocketed. Data from the Virginia Commonwealth University shows that academic dishonesty has increased during the 2020-21 school year to 1,077 cases, more than three times the previous year's (Dey, 2021). OpenAI’s advancements in artificial intelligence make it even easier for students to access resources to plagiarize assignments. While this issue is a definite ethical concern and should be addressed, technology should not be abandoned in higher education. Rather, advancing technology such as AI should instead be incorporated into classrooms and higher learning institutions, to aid students' learning instead of hindering it.

To mitigate the issue of students using artificial intelligence such as ChatGPT to plagiarize assignments, first the concept of AI and what ChatGPT really is needs to be understood. ChatGPT, the latest creation of OpenAI, was designed to be a tool that would benefit

humanity. Taking prompts from users (such as the one used in the opening paragraph) ChatGPT can then use a process called ‘tokenization’, which breaks down the text “that can be used in machine learning” (Montti, 2022). Tokenization is the process where the user inputs their request for the AI, then the AI breaks their request into specific keywords, such as “write” and “essay.” Those keywords are then broken down to a level that the AI can understand in hopes of providing an output. When the AI understands what the user is asking for, then the AI will randomly produce text depending on which token the AI guesses is coming next, based upon the previous token (Montti, 2022; Wiggers, 2022).

Sometimes these guesses can lead to biased and incorrect information, which is why there are algorithms in place to verify that the information the AI is generating to the user is both truthful and accurate. Of course, these algorithms are not 100% accurate, and mistakes will occur. While tokenization is not the only component that goes into deciphering a user's request, it is a fundamental part of the process and the part of the process that is most important regarding the use of AI plagiarism.

With students abusing ChatGPT to plagiarize assignments, OpenAI has responded to complaints from faculty and academic administrators. Their potential solution comes in the form of their own watermark, which plagiarism detection software companies such as TurnItIn and Chegg can use to verify that the essay submitted was made by a human and not an AI. To do this OpenAI is inserting their watermark into the responses they give their users (Hern, 2022). In this scenario, the user would type their prompt (ex. Write an essay on dogs), then ChatGPT would use the tokenization process to pinpoint the words ‘essay’ and ‘dogs’ and then begin to ‘write’ the essay. However, with the watermark in place, instead of ChatGPT selecting each token randomly, the function used to select tokens would be altered to insert a hidden key into the

paper, which would only be accessible to OpenAI's development team (Wiggers, 2022). In theory, this would mean that in the paper itself would be a string of words that seem ordinary to the human eye, but when placed under a plagiarism checker would be flagged as ChatGPT's key.

While this seems like an obvious and easily achieved solution considering OpenAI has already developed the watermark, technology is not that simple. OpenAI's AI Safety and Alignment researcher, Scott Anderson, pointed out that this watermark could be easily removed. "Now, this can all be defeated with enough effort. For example, if you used another AI to paraphrase GPT's output-well okay, we're not going to be able to detect that," (Montti, 2022). With how popular ChatGPT is, it is very likely that another AI designed to detect ChatGPT's watermark or alter the text to make the watermark disappear could exist mere weeks after the watermark is released, if it doesn't already. People do not like being traceable, and OpenAI publicly boasting about a solution to ease the worries of academic faculty only makes a countersolution easier to obtain.

Of course, just because students have begun cheating on their assignments with ChatGPT doesn't mean that they weren't able to plagiarize assignments beforehand. The issue of academic integrity being violated by students is not an issue of AI, but of the integrity of the students and the value they put into their work. Theresa Ashford says it best in her research on academic students and the use of technology in plagiarizing: "Clearly, students cannot claim 'Google made me do it': or that the functionality of their computer to easily 'cut and paste' suggests it must be a morally appropriate practice. These two technological features, search engines and digital affordances, are not in themselves moral actors, but they are considerable" (Verbeek, cited in Ashford, 2021). Ashford's main conclusion in her research is that technology, while the tool used to commit academic dishonesty, is not the key factor in plagiarism. The students who feel

burnt out, stressed, or feel as if there is too much work being assigned is the key factor, as they are the ones who use websites and applications as tools for plagiarism (Ashford, 2020).

If students are going to use ChatGPT to plagiarize, and OpenAI's watermark is going to be easy to reverse, how do teachers make sure AI isn't used in students' assignments?

Unfortunately, there's not a lot teachers can do. In a study done by research students Mohammad and Erkan (2023) at the University of Bergen, Norway, findings showed that "Of the 50 essays inspected, the plagiarism-detection software considered 40 of them with a high level of originality, as evidenced by a similarity score of 20% or less." This means that plagiarism checkers that teachers and other academic staff have grown to rely on in verifying their student's work as their own will no longer be accurate. Thus, there is no technological way for staff to ensure that the use of AI plagiarism is not occurring in their classrooms. With no other option, many school districts are looking to ban ChatGPT from their school devices and networks (Needleman, 2023). However, most students have a cell phone, and their own home network, so this may not prove to be effective against AI plagiarism. Outside of banning ChatGPT from schools, teachers have begun resorting back to handwritten essays for their students.

On paper this seems like a good idea, with no technology, students are unable to cheat. However, much like technology, real life is never that simple. Thinking practically first, if the students are forced to write handwritten essays, they will have to be done in class to avoid students copying down essays by hand that were generated from ChatGPT. Handwriting takes significantly longer than typing, so classrooms will fall behind handwriting essays rather than learning new material. Educating students on proper handwriting techniques has also taken a back burner in public school systems. Many schools have switched to digital applications to teach students, such as Google Classroom and Canvas, which means that many young students'

handwriting may not be legible or easy to read. Then there's the issue of students with disabilities who are unable to handwrite. Does the school make an exception for the student? Does the student turn around and cheat using ChatGPT when given that exception? If school districts ban technology in the classroom, it will lead to more issues than if the students are educated on what ChatGPT and AI are and know the consequences if they use it to plagiarize assignments.

There is no simple solution for this issue. There is no magical watermark that can pinpoint with one hundred percent accuracy when a student is plagiarizing an assignment. Even if that watermark existed, it's only a matter of time before another AI development company creates an even more powerful AI bot that users can trick into removing that watermark. Technology is a constant battle of wills between those that want to use it for education and the advancement of society, and those that want to use it as a shortcut. The only way that academic faculty and administration can begin to change the number of their students cheating is by educating them, not only on the consequences of using ChatGPT and AI to plagiarize assignments, but on how to use them to enhance their learning. David Chrisinger, a Director of Writing at the University of Chicago, incorporates ChatGPT into his lesson plans. In one instance, he asked his students to generate a 600 word essay using a prompt given to ChatGPT. Their assignment was to take ChatGPT's response and come up with more complex questions to make a stronger essay. When they were satisfied, they needed to edit the essay to tailor it to their audience (Belkin, 2023). In doing this, Chrisinger not only shows students that he is aware of the AI and its power, but that he knows it enough to utilize it in the classroom, meaning he knows enough to catch his students using it as well.

Chrisinger may be leading the pack, but other academic administrators and faculty will not be far behind. New assignments and curriculums, even classes centered around ChatGPT and AI will appear in school systems around the country. While this may be a big and scary change for staff, especially those who did not grow up in a generation of computers, they cannot view it as a bad thing, or a simple “cheating tool.” This new and rapid advancement in artificial intelligence means new discoveries, new ways for students to show off their creativity, and ultimately is a powerful tool that can be used to enhance learning, when done correctly. It is important for institutions to not immediately ban AI, but learn to master, implement, and control it. Only then can they take back the reins on academic dishonesty while furthering their students' education.

References

- Ashford, T. (2021). App-centric students and academic integrity: A proposal for assembling socio-technical responsibility. *Journal of Academic Ethics*.
<https://doi.org/10.1007/s10805-020-09387-w>
- Belkin, D. (2023, January 25). Professors turn to ChatGPT to teach students a lesson. *Wall Street Journal*.https://www.wsj.com/articles/professors-turn-to-chatgpt-to-teach-students-a-lesson-11674657460?mod=Searchresults_pos3&page=1
- Dey, S. (2021, August 27). *Reports of cheating at colleges soar during the pandemic*. NPR.
<https://www.npr.org/2021/08/27/1031255390/reports-of-cheating-at-colleges-soar-during-the-pandemic>
- Hern, A. (2022, December 31). Ai-assisted plagiarism? ChatGPT bot says it has an answer for that. *The Guardian*. <https://www.theguardian.com/technology/2022/dec/31/ai-assisted-plagiarism-chatgpt-bot-says-it-has-an-answer-for-that>
- Mohammad, K., Er, E. (2023, February 8). Will ChatGPT get you caught? Rethinking of plagiarism detection. Cornell University. ArXiv:2302.04335.
- Montti, R. (2022, December 30). How the ChatGPT watermark works and why it could be defeated. Search Engine Journal. <https://www.searchenginejournal.com/chatgpt-watermark/475366/#close>
- Needleman, S. (2023, January 23) ChatGPT creator releases tool to detect AI-generated text, calls it 'unreliable'. *Wall Street Journal*. https://www.wsj.com/articles/chatgpt-creator-releases-tool-to-detect-ai-generated-text-calls-it-unreliable-11675204820?mod=Searchresults_pos7&page=1

Wiggers, K. (2022, December 10). *OpenAI's attempts to watermark AI text hit limits.*

TechCrunch.[https://techcrunch.com/2022/12/10/openais-attempts-to-watermark-ai-text-hi](https://techcrunch.com/2022/12/10/openais-attempts-to-watermark-ai-text-hit-limits)

t-limits