

AI VS. ACADEMIA: IS THE RESEARCH PAPER DOOMED?

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Abstract

The rise of generative Artificial Intelligence (AI) has raised concerns about its potential impact on academic integrity, especially concerning research papers and academic writing. Some institutions have decided to ban the use of AI, while others are looking for ways to integrate it into their curriculum responsibly. Pennsylvania State University offers a course called "Emerging Technologies in Popular Culture," which explores the ethical implications of AI-generated art. This approach emphasizes critical evaluation and problematization of AI-generated outputs and serves as a model for embracing AI while maintaining academic rigor. As AI reshapes education, educators must prepare students with the necessary skills to navigate this evolving landscape.

Introduction

On November 30, 2022, the world as we knew it changed. Open AI released ChatGPT to the public, and the world has never been the same. The tool quickly went viral. Suddenly, people everywhere were talking about this emerging technology. There were over one million users only five days after the Open AI released Chat GPT (Marr, 2023). With ChatGPT available to the public, academics nationwide began to show signs of worry regarding academic integrity. Those in K-12 and higher education feared this new tool would kill original research and the concept of the research paper. Traditional research papers have been a staple of education for decades, and with the rise of AI, some have questioned their relevance. Despite the trepidation felt by academics, it is important to remember that AI can be a valuable tool in the research process. By adjusting how we design and assign research assignments, academia can ensure that traditional research papers remain an important part of education.

The first instinct of some professors and school districts was to ban the use of AI. This author's son, a student at a prestigious university, was directed by one of his professors to purchase Blue Books.¹ He was informed that exams would be conducted in person instead of online to deter the use of generative AI. Reverting to outdated practices to combat cheating and uphold academic integrity is an ineffective approach to addressing the rise of generative AI. Professors and teachers need to have intellectual conversations about the use of AI and how to maintain academic integrity. Such discussions will help students better understand a professor's trepidation about using AI and how important academic integrity is in the research process and all aspects of their educational lives.

Findings and Discussion

Even in original research and thought, cheating is not a new problem at institutions of higher learning. As a college student at the University of Massachusetts in the late 1980s and early 1990s, one could buy a "completed", or "pre-written" paper, and if they were willing to sacrifice their academic integrity, turn it in to their professor as their work. These practices were not unique to the University of Massachusetts, Amherst. When this author became a new teacher in the late 1990s, she assigned a one-page research paper to the eighth-grade social students in her class. More than one student printed out a page from Microsoft Encarta (Remember Microsoft Encarta?), put their name on it, and turned it in, complete with the Microsoft Encarta mark at the bottom, committing plagiarism by putting their name on something written by another person. Banning a tool as shiny and new as generative AI will not work. The outright banning of AI turns it into an even shinier and brighter new tool that students are dying to use. Students will find ways to skirt the system.

1. A Blue Book is a booklet, usually with a blue cover, with about 20 lined pages inside that students use to answer exam questions, particularly questions in an essay format.

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The answer to the AI problem for academia is not to ban it. The answer is that we must integrate generative AI into academic research. This necessitates a paradigm shift in the evaluation and validation of research outputs, moving beyond traditional measures of authorship and publication to focus on the quality, impact, and reproducibility of AI-assisted research. We must teach students the ethics of information and information literacy and how to deal with the misinformation, disinformation, hallucinations, and bias that come with these shiny new generative AI tools. If we do not, AI remains available, and the people using it will not have the right training for it.

Some institutions are trying to teach their students that AI can be an instructive tool, as opposed to those who are outright banning the use of AI. Pennsylvania State University at University Park is the former. They are offering a course entitled *Emerging Technologies in Popular Culture*. The art department offers this course, which seeks to answer the following questions: "Who owns the art co-created with a machine? When does AI become the artist?" Moreover, "Do we view art created with the aid of AI differently?"² Offering this course to their students puts this university ahead of the curve in incorporating AI into the curriculum. This new course is a model for how universities can handle generative AI. Perhaps the key learning objective of the course will give us a blueprint for handling AI in the academic research paper. That key objective is that students must "problematize and critically evaluate AI-generated art in society."³ Students must critically evaluate every piece of information that comes from generative AI. The critical thinking that results from trying to answer these questions leads to the exact kind of discourse that should be present on college campuses. This course employs good educational pedagogy using a new technological tool to answer philosophical questions.

Pennsylvania State University is going in what this author believes to be the proper direction with generative AI by adding it to the curriculum in a productive way. They offer a course that seeks to educate their student body on the ethical issues surrounding the use of generative AI. Their course delves into important questions about using and interacting with this new technology.

According to Duke University, "every course should have an AI policy. Instructors should update their plagiarism policies to include guidance on using generative AI text in their class."⁴ They even go one step further and say that professors need to guide their students with this new source of information and support AI literacy. In *The Chronicle of Higher Education*, Kevin Gannon states, "Students are telling us, the use of ChatGPT and other AI tools is ubiquitous - and the days of brushing them aside in our course and assessment planning are over."⁵ So, the question remains: will higher education put their collective heads in the sand and continue to ban the use of AI, or will teachers and professors show their students how to use this technology ethically and with a critical eye, ensuring their students are ready when their future employers ask them to use this technology?

This author believes that both K-12 education systems and institutions of higher learning must learn to embrace this technology. Understandably, teachers and professors need more time to accept and encourage the use of a technology that allows their students to enter a prompt, have it spit out a research paper complete with citations, and turn it in, thus committing plagiarism. "The growth of artificial intelligence (AI) technologies has affected higher education in a dramatic way, shifting the norms of teaching and learning. With these shifts come major ethical questions."⁶ As educators, we need to find a way to answer the ethical questions that generative AI brings along with it. Some ethical questions surrounding generative AI in the research process include questions such as, what bias may be present in the results? How trustworthy are the results? Are students using AI with academic integrity throughout the research process?⁷

AI is nascent and has already begun to disrupt and revolutionize how we teach and learn. Now, academia must revolutionize its teaching model to include AI. The only way to manage AI in K-12 schools and on college campuses is to teach the students how to use it properly. We must teach students how to use AI as a tool akin to a calculator. Calculator technology has emerged as a universally recognized and valued tool through several transformative phases.

2-3. Pennsylvania State University

4. Duke University, "Artificial intelligence policies"

5. Gannon, K, "Should you add an AI policy to your syllabus?"

6. Huang and Shiri, "AI and Ethics"

7. Slimi and Villarejo, "Navigating the Ethical Challenges of AI"

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These phases include the teacher being confident in their mathematical skills and their skills as an educator capable of teaching complex mathematical concepts, understanding the limitations of the calculator and that if students do not understand the mathematical concepts, the calculator will not provide them with the correct answer; the calculator is used for basic tasks like “confirming and checking mathematical ideas which allowed students to see its value and usefulness”; and finally, the acceptance that they must teach understanding of mathematical concepts, and without that understanding the calculator is not a source of “mathematical authority” but simply a tool that the students use.⁸

Conclusion

As librarians, we need to be at the forefront of training the faculty on our campuses to manage AI and coexist with its presence in their classrooms. Faculty must fully understand the benefits and drawbacks of using and learning with AI. As educators, we must always be mindful not to lose out on human interaction with our students. We must remind our faculty that this innovative technology does not replace cognitive reasoning and cannot create and engage a community of learners as humans can. We are uniquely poised to help the faculty on our campuses handle artificial intelligence. The first step is helping our faculty craft policies for the ethical use of AI within their classrooms. These policies must be in the syllabus at the beginning of the semester or the year so that students understand what is and is not acceptable in their classrooms. Professors must decide how and if they will allow their students to use AI. Students may use it on some assignments while not on others. They must make these requirements clear in the syllabus and for each assignment.

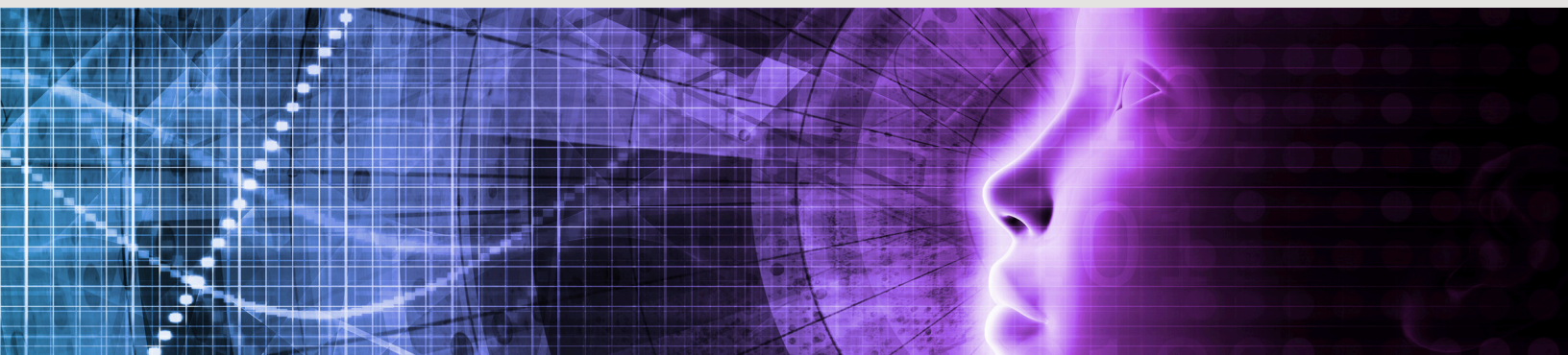
8. Doerr and Zangor, “Creating meaning for and with the graphing calculator”

9. Pisica, et. al., “Implementing artificial intelligence in higher education”

This author believes “AI can facilitate learning, and it can offer that AI can facilitate learning, and it can offer both students and teachers a personalized approach.”⁹ Pisica et al. further state:

The benefits of the implementation of AI in HE are appreciated in relation to the research process. AI offers exceptional opportunities to increase interdisciplinary, multidisciplinary, and transdisciplinary research, as AI facilitates searching through a huge number of sources, selecting eclectic topics, and transferring methods from one field to another.

In their paper “Implementing Artificial Intelligence in higher education: Pros and cons from the perspectives of academics,” Pisica et al. discuss inclusion in education as a benefit of using AI in higher education and speak about AI-powered personalized learning approaches that will open doors for students of diverse abilities and backgrounds, enabling them to progress academically through customized learning pathways that cater to their unique needs. When discussing inclusion in education, it is not hard to imagine how using generative AI will enhance student education. It is not hard to imagine a situation where you have a student who does not understand a concept you just taught, and that student can go to ChatGPT, Google Bard, or any other AI Large Language Model and type in the concept and ask for it to be explained to them. AI can be a powerful learning companion when used correctly and ethically. Another scenario could be a teacher has a student who just moved from Belgium and needs help understanding what they are reading. AI can translate the text so students can learn with their English-speaking peers. These two examples show how effective AI can be as a learning companion.



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Regarding research, we must be careful to teach our students how to use AI as a tool in the same way we allow our students to use calculators to solve math problems (those of us of a certain age may remember being told we were not to use calculators for our math homework and tests; that does not age well). AI can be a tool students have in their pockets when conducting research. AI can be a brainstorming partner, helping the fledgling researcher create an outline for their paper, devise search terms to plug into legitimate research databases (that we, as librarians, help them find), edit their thesis statement, and more.¹⁰ These uses are ethical in the research process so long as, just like any other source, citations are provided when AI is involved in research. Both MLA and APA have guidelines on how the researchers should cite AI use in research papers.

As with anything, AI has drawbacks in the research process. Researchers must be careful when using AI as a research tool. As with any tool, there is often the temptation to use AI unethically.¹¹ But the temptation to cheat is not a problem with AI chatbots so much as it is human nature. Students must be wary of any source obtained directly through an AI chatbot and should fully vet any source retrieved through AI to ensure that it is indeed a real and credible source. That is what we can and must teach.

AI is an ever-evolving technology that will be present everywhere in our lives for many years to come. Academia must accept AI as it has embraced the calculator, the internet, and other educational technology tools. With proper guidance and policies, AI can make the learning experience richer and more valuable if we teach our students the information literacy skills needed to be successful consumers of information from AI and the internet, and provide them with clear policies on how and when they may use AI.

10-11. Pisica, et. al., "Implementing artificial intelligence in higher education"

By incorporating AI in research assignments, students can access a wealth of information that was once unimaginable. At the same time, it is important to acknowledge the limitations of AI-generated information and ensure that students understand this and use it ethically. This can be achieved by teaching students to use AI-generated information responsibly, by teaching proper citations, and by adapting research assignments to ethical considerations.

Despite the initial fears, traditional research papers are far from dead. Instead, AI has the potential to enhance them. By incorporating AI in research assignments and teaching students to use AI-generated information ethically, we can ensure that traditional research papers remain a valuable part of education.

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