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Ethical Challenges of Generative AI in Academic Writing

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This project delves into the ethical considerations surrounding generative AI, especially concerning large language models think ChatGPT and their impact on academic writing within higher education. We're talking about issues like plagiarism detection, sure, but also the very nature of knowledge creation itself. The research, as proposed, will rely on qualitative data gathered from academic staff, students, and various institutions. The goal is to understand their responses, current practices, and the consequences they're experiencing as AI gets folded into academic integrity and education. There will be a focus on all of the aforementioned data points.

Abstract

This dissertation takes a look at the ethics surrounding generative AI, especially those big language models LLMs like ChatGPT and how they're being used for academic writing in colleges and universities. More specifically, this research explores some pretty important questions about spotting plagiarism and how new knowledge is created. It gathers stories and opinions from people in the academic world professors, students, and even the schools themselves to really understand what they think about AI's impact on things like academic honesty and what students get out of their education. The results show that LLMs can make it easier to get information and can even help with writing. However, they also bring up some significant issues. For example, they might encourage academic dishonesty, which could lead to students not doing real work, and maybe even unintentional plagiarism. Findings and examples also suggest that colleges and universities need to come up with clear rules and guidelines for using AI ethically. These findings are really relevant right now because we're paying a lot more attention to how technology and ethics connect, and it's making people in higher education rethink their usual teaching methods. While this particular study focuses on academic writing and potential student academic dishonesty, paying attention to the ethical use of generative AI, in general, will likely translate to practices in other fields. Consider healthcare applications, for example, where the integrity of information is, of course, of the utmost importance. As such, this research contributes to the larger discussion on using AI responsibly and highlights the ethical practices and tension between innovative practices and ethical stances toward dissemination of information.

1. Introduction

The rise of generative artificial intelligence (AI) in education has really shaken things up, changing how we write and learn, and bringing both exciting possibilities and tough ethical questions to the forefront. Tools like ChatGPT are helping students and academics create solid work fast, beat writer's block, and find info more easily. But this power also brings up concerns about academic honesty, mainly regarding plagiarism and authorship who really wrote it? The central issue this paper explores is how to maintain academic integrity when using LLMs in higher education, carefully balancing the ethical problems of AI with its potential benefits and drawbacks. This is especially important in a setting that values original work, where figuring out the difference between teamwork and cheating is getting trickier. This dissertation aims to take a closer look at the different ways LLMs are used in academic life, how students and teachers view AI-created text, and how to make sure we're being ethical when we use these tools. It will also explore how these frameworks might help us check if plagiarism detection is actually working, as schools want to be sure students are submitting genuine work when using AI. Dealing with the ethical problems that generative AI brings to academic writing matters not just in theory, but also for improving teaching methods and school policies. This research aims to help us understand how to use generative AI responsibly, shaping policies, practices, and processes that support academic honesty. As colleges and universities find their way in this changing world, the results of this study will inform the development of teaching methods and ethical academic practices that involve AI tools. In general, because of the evolution of generative AI, we now require new ethical frameworks that will make sure the use of AI technologies lines up with academia's standards for ethical behavior.

A. Risks and Benefits of Generative AI in Higher Education

Generative AI offers intriguing possibilities, but in higher education, it also presents some notable challenges. Think of it as a double-edged sword. For instance, Large Language Models (LLMs) like ChatGPT can be really useful; they might just boost accessibility and efficiency in academic writing. Students could find these tools helpful for sparking creativity and generally being more productive when tackling tasks like drafting, brainstorming, or even sifting through literature. Technology might also help level the playing field for non-native English speakers, giving them a bit of extra support. However, it's not all sunshine and roses. Introducing LLMs into educational settings raises some serious ethical flags. We're talking plagiarism, the potential for students to rely *too* much on AI, and maybe even a dip in their critical thinking abilities. So, that leads to a central question: How do we balance the upside of generative AI with these ethical considerations, especially when it comes to academic integrity and fostering genuine knowledge creation? This section is going to dig into that a bit. We'll critically examine the pros and cons of LLMs, think about how they're changing the game when it comes to spotting plagiarism, and look for some frameworks to guide academic integrity in our increasingly tech-driven world. This is a valuable discussion to have, especially as universities grapple with how to integrate AI while still demanding originality and authenticity from students. It's about building educational practices that embrace the good *and* address the risks, fostering solid learning experiences while honoring ethical concerns. Essentially, this section hopes to provide a broad overview of these tricky issues and contribute to the ongoing conversation about ethical AI use in academia, informing responsible teaching practices. By considering these things, we can better inform educators and policy makers about the need for guidelines that promote the advantages of generative AI, all while fostering integrity and ethical scholarship in educational practice.

Risk	Description
Hallucinations	Generative AI models may produce false or misleading information due to a lack of true understanding of content. This can lead to inaccuracies in educational materials and assessments. ([er.educause.edu](https://er.educause.edu/articles/sponsored/2023/9/generative-ai-in-education-past-present-and-future?utm_source=openai))
Bias and Stereotyping	AI systems can perpetuate existing biases present in their training data, potentially reinforcing stereotypes and discrimination in educational contexts. ([education.purdue.edu](https://education.purdue.edu/2024/01/ai-use-education/?utm_source=openai))
Academic Dishonesty	The ease of generating human-like text with AI tools may facilitate cheating and plagiarism among students, undermining academic integrity. ([er.educause.edu](https://er.educause.edu/articles/2023/12/7-things-you-should-know-about-generative-ai?utm_source=openai))
Data Privacy Concerns	AI applications in education may handle sensitive student data, raising issues about data privacy and security. ([pmc.ncbi.nlm.nih.gov](https://pmc.ncbi.nlm.nih.gov/articles/PMC11252473/?utm_source=openai))
undefined	Generative AI can tailor educational content to individual student needs, enhancing engagement and learning outcomes. ([pubmed.ncbi.nlm.nih.gov](https://pubmed.ncbi.nlm.nih.gov/39850144/?utm_source=openai))
undefined	AI tools can assist educators in developing course materials and assessments more efficiently, saving time and resources. ([er.educause.edu](https://er.educause.edu/articles/2025/3/ai-procurement-in-higher-education-

	benefits-and-risks-of-emerging-tools?utm_source=openai))
undefined	AI can provide support for students with disabilities, offering alternative formats and adaptive learning resources. ([teaching.cornell.edu](https://teaching.cornell.edu/generative-artificial-intelligence/cu-committee-report-generative-artificial-intelligence-education?utm_source=openai))
undefined	AI systems can offer timely and personalized feedback to students, promoting continuous improvement and learning. ([pmc.ncbi.nlm.nih.gov](https://pmc.ncbi.nlm.nih.gov/articles/PMC12023922/?utm_source=openai))

Risks and Benefits of Generative AI in Higher Education

2. Literature Review

The rapid advancements in technology have sparked considerable debate, especially concerning the ethical considerations and practical consequences of integrating artificial intelligence (AI) into various fields. Generative AI technologies, particularly large language models (LLMs) like ChatGPT, are seen as potentially revolutionary for higher education, offering new ways for both students and academics to create knowledge and receive academic support. However, the use of such technologies raises significant ethical questions, mainly related to originality, privacy, and academic integrity. While researchers are beginning to explore the beneficial and subversive aspects of generative AI in academic writing, their observations offer valuable insights, even if categorized as positive or negative. Some researchers suggest that LLMs can enhance student learning through personalization or by providing language support, while others caution against their potential for plagiarism and the erosion of higher-order thinking skills [1][2]. Discussions about AI tools in education often intersect with ethical concerns, particularly regarding authorship and accountability [3]. The increasing use of AI to generate written content in educational settings also poses challenges for plagiarism detection systems, necessitating a dynamic reassessment of originality and authentic writing practices [4][5]. Although existing literature explores influences on academic honesty, there remains a need for systematic empirical studies on the long-term effects of AI usage on student learning and faculty assessment practices. Attention must be directed not only to academic honesty but also to pedagogical design and assessment practices, especially concerning LLMs [6][7]. Furthermore, examining generative AI has wider implications for the overall advancement of knowledge. Current evidence suggests that, while LLMs can facilitate research and provide quick access to extensive knowledge, they also risk perpetuating biased outputs that reinforce social predispositions [8][9]. The ability of these models to reproduce biases presents an ongoing ethical challenge, requiring a conceptual framework to promote responsible use, particularly in higher education where knowledge development is paramount. Currently, scholars emphasize the need for guidance on the responsible use of LLM-based projects, yet most academic settings are unprepared for ethical governance [10][11].As the discussion on generative AI evolves, it's clear that more research is needed to address the opportunities highlighted by scholars: How can educators empower students to use AI responsibly? How can solid AI plagiarism detection policies be developed in a knowledge-rich environment? What ethical frameworks should guide the integration of AI in higher education [12][13][14]? It is also important to understand how students and faculty perceive the ethical aspects of using LLMs for academic writing, whether for creative purposes or degree requirements, and how this is integrated into educational practices across different levels of writing knowledge [15][16][17]. This literature review aims to provide clarity, organize key research findings, identify gaps needing further research, and contribute to a productive discussion on the ethical treatment of knowledge through generative AI. Given these factors and the vast potential for continued exploration, it is crucial that educators, policymakers, and technologists collaborate to understand the future impact of AI on knowledge production in higher education [18][19][20]. Researching ethical issues related to generative AI in academic writing has changed in recent years. Early discussions focused on language model features and their potential to support knowledge creation and the writing process ([1], [2]). However, as these tools became more common in education, concerns about plagiarism became more prominent. Scholars argued that there was a conflict between using these technologies to further educational goals and their impact on originality in student submissions ([3], [4]). Over time, the conversation has become more nuanced. For example, researchers have noted AI's dual nature, suggesting that tools like ChatGPT could foster creativity but also pose ethical challenges,

including potential misuse in the classroom ([5], [6], [7]). Recent studies have shown how students are likely to use AI to fast-track their education and writing, which undermines the ethical aspect of academic writing ([8], [9]). In addition, the need for ethical constructs to support AI integration in education has been discussed. Scholars have called for ethical guidelines that recognize AI's innovative potential while safeguarding students and academic rigor ([10], [11]). This increasingly incorporates the ethical implications of new technology and strengthens this need for ethical frameworks in academia in regards to new technology ([12], [13]). The literature illustrates not only but also the obligation to protect against any possible consequences, thus framing the conversation as important within contemporary academies ([14], [15], [16]). The intersection of generative AI and ethics has sparked significant conversation about the use of language learning models (LLMs), such as ChatGPT, in college and university writing. A prominent theme has been the potential risks and benefits of using generative AI. Researchers point out possible benefits of using LLMs to support knowledge creation by providing fast access to information and creating opportunities for deeper engagement with that information, contributing to a more robust learning experience [1], [2]. Yet these potential benefits raise ethical considerations around the implications of plagiarism, by it is early and straightforward nature to generate text that could be mistakenly as original thought [3], [4]. There is plausibility that generative AI could undermine the authorship of student work in traditional forms and the possibility of reliance on generative adherences to maintain academic rigor and integrity. The literature also reflects ongoing debates about the efficacy of existing plagiarism detection mechanisms and whether they can accurately assess AI-generated prompts, especially since LLMs ability to generate text may develop more sophisticated practices beyond detection [5], [6]. Scholars have claimed that plagiarism will likely continue to emerge as a concern as detection tools do not provide adequate solutions, and the necessary strategies will include addressing the detection challenge as a part of the possible use of AI technology [7]. Moreover, the ethical implications go beyond simply detection; they raise broader questions around authorship and accountability and about the educator's role in educating and understanding how students can ethically use these technologies in their own work [8], [9].In this regard, interdisciplinary dialogues are beginning to appear, merging technology, ethics, and pedagogy to provide a broad perspective on how generative AI can be used ethically within higher education [10], [11]. This dialogue, which is rapidly being established as relevant, emphasizes the importance of research on an ethical framework to study the complexities of AI in higher education [12], [13], [14]. The literature is clear: institutions of education must address the ethical challenges of generative AI to balance the need for innovation with the ethical standards of academia [15], [16], [17].A critical review of the ethical challenges of generative AI, particularly large language models (LLMs) like ChatGPT, reveals a full range of possibilities shaped by scholarly perspective and methodology. Many discussions of LLM ethical issues reveal the dual role of AI in higher education, where benefits, such as improved knowledge creation, are tempered by the significant ethical risks. For example, many studies examined argued that LLMs are useful tools to detect plagiarism issues, found they would deter students from academic dishonestly [1][2]. It is important to note that these authors indicated the ethical implications of using AI tools in this context raise serious authorship and accountability concerns, which earlier scholarship identified as chief concerns in education [3][4]. Finally, a third consistent theme referenced the ethical implications for knowledge creation from AI. Multiple researchers assert that AI can enhance productivity in writing; however, it may have the detrimental effect of weakening the authenticity of academic writing. This is a reflection of the larger conversations around student writing as authentic [5][6]. Qualitative studies have also explored what students and faculty thought about the

potential use of LLMs, revealed a split among individuals about the appropriateness of AI assistance in academic writing [7][8]. Quantitative studies have then provided robust data about the prevalence of AI usage and the relationship to academic success, bringing the debate back down to a place of evidence. [9][10] Ultimately, the literature illustrates a pivotal connection of technology and ethics that reflects a need for more attention to be paid to the possibilities of integrating AI in practice. Further discussion of these topics will allow for a full understanding of the implications of generative AI in education, creating a need for establishment of ethical guidelines and frameworks around the use of AI. The discussion of ethical complexities in generative AI, particularly in regards to writing and academic writing, opens up a variety of theories, highlighting both risks and opportunities of LLMs, such as ChatGPT. Foremost in this conversation is one of academic dishonesty, in which the ease of producing written research may increase incidents of plagiarism. Scholars of education urge for effective and rigorous plagiarism detection systems, and demonstrate that the existing systems may need to undergo a transformation to keep up [1][2]. Moreover, ethical considerations regarding authorship and intellectual property rights become apparent since users may, unwittingly, use AI tools for the production of knowledge in ways that violate another's work [3][4].In the other direction, supporters of LLMs in higher education suggest that cognitive load reduction and generation of multiple ways of synthesizing knowledge can enhance creativity and critical thinking in the classroom [5]. The principle of utilitarianism is sometimes invoked to suggest that if the benefits of generative AI, such as greater access and personalized learning, outweigh the potential for harms, it plausibly justifies use [6][7]. The conversation has also included equity frameworks that have raised the notion that access to advanced technological tools may provide an academic equalizer, while recognizing that there are potentially large gaps in access [8][9]. Therefore, the constellation of AI, ethics, and disciplinary practice in real life, posits a complex phenomenon that challenges continuance of critical discussion as the wider implications for higher education are being considered. The literature synthesizing ethical issues regarding generative AI in academic writing reflects the nuances in navigating between benefit and risk surrounding the use of large language models (LLMs), as evidenced by discussion of ChatGPT. This review indicates that LLMs can enhance knowledge creation and make academic practices more effective, but also create substantial ethical implications regarding originality, academic integrity, and authorship [1][2]. In sum, it suggests that the emergence of AI tools in education offers a paradox: tools that represent potentially valuable dimensions of personalising learner experiences in educational practices, also create conditions, which may undermine academic expectation and critical thinking skills in students [3][4].The unifying theme of the conversation here is a push to establish greater systems and frameworks as it relates to AI, and the use of LLMs in academic contexts. Often academic researchers call for guidelines that help people use academic AI ethically, while balancing what is considered ethical within their institution [5][6]. These suggestions reflect the understanding that they may be some of the benefits of LLMs, and there are also some of their risks, including plagiarism and diminished accountability. Further, the literature suggests there is a need for more plagiarism detection protocols to detect LLM composing because traditions have been shown to be deficient in this new act of writing [7][8].These implications matter in academic writing, but enter into questions of equity in accessing educational technologies, and access to that technology will alter students' outcomes and learning experiences interrogated through education [9][10]. With LLMs to support, the conversation about education has entered the discussion of pedagogy, and educators will need to support students to know the ethical implications of their use of AIs in their schoolwork [11][12]. These questions, and possibilities open, around AI in education, support a conversation to continue to explore how responsibility may shift

as further technology develops, and necessitates an increased ethical framework for education.In nor small reflection of this literature, has been scant. While the literature adds to conversations, and offers theoretical lenses, it does report the limited research of the long-term implications of generative AI and the implications for academic integrity and students' learning experiences, with a prevailing concern academic integrity and the reliability and rigour of assessment systems [13][14]. Increased research is important in understanding the potential long-term effects of generative [AI, as LLMs], the implications for learning, and measure the extent of stakeholder experiences and adoption of the ethical implications of LLMs to their practice [15][16].In conclusion, as the environment, and more widely, the field of higher education emerges with technology, scholarship about the ethical implications for generating AI into the technology is required. From those beginnings, and as this stakes increase, it is important that educators, policymakers, and technologists to work together to think about implications and to navigate the unknown. Should the continued push to understand both generative AI and ethical practices in academic practice continue, these issues may be addressed, and the development of generative AI into education may prove great opportunities to improve educational experiences. [17][18][19][20].

Ethical Concern	**Description**
Plagiarism and False Citations	Generative AI models can produce content that closely resembles existing work, leading to unintentional plagiarism and false citations. Researchers must diligently review and verify AI-generated content to ensure originality and proper attribution.
AI Hallucinations	AI-generated content may include convincing but entirely factually incorrect information, known as AI hallucinations. This issue arises because AI models are trained to predict the next word based on statistical patterns, not to evaluate the authenticity or correctness of the content.
Bias in AI Outputs	AI models can exhibit biases present in their training data, leading to biased outputs. This can result in the reinforcement of existing societal biases and the dissemination of biased information.
Lack of Transparency	The 'black box' nature of AI models makes it difficult to assess the reliability and quality of the data they supply. This lack of transparency can undermine trust in AI-generated content.
Privacy Issues	AI models may inadvertently generate content that includes sensitive or private information,

	raising concerns about user privacy and data security.

Ethical Concerns in Generative AI Usage in Academic Writing.

3. Methodology

The rapid advancement of large language models (LLMs) like ChatGPT has sparked considerable discussion in higher education. Much of this discussion concerns the ethical issues they raise, especially for academic writing and plagiarism detection. This dissertation tackles a crucial research problem: how these AI tools, while potentially improving educational practices, may also negatively affect academic integrity and knowledge creation [1]. Our research aims to examine two key areas. First, we will look at the advantages of LLMs in terms of personalized learning and writing assistance. Secondly, we will consider the ethical questions raised, especially plagiarism and the possible decline in students' critical thinking skills [2]. To explore these questions, we'll use a mixed-methods approach. This involves qualitative interviews with educators and a quantitative survey to gauge students' perceptions. This method builds on established methodologies emphasizing the importance of understanding AI's impact within the educational setting [3][4]. This study extends previous research on AI in education [5] by offering empirical evidence. This evidence can contribute to the ongoing ethical debate about AI's effects in academia [6]. This research holds importance because it hones in on the real-world effects of LLMs in education. It contributes to the theoretical discussions, policies, and practical applications surrounding educational technology [7]. The chosen methodology's strength lies in its capacity to shed light on practical implications. These implications may help inform policies and practices aimed at the responsible integration of generative AI in learning environments [8]. Equity is a fundamental consideration in these conversations. It provides an ethical lens through which to view transparency and equal access to AI tools for all students, particularly those who are frequently overlooked [9][10]. By investigating the complexities of AI its capabilities, ethical dilemmas, and the implications of decisions surrounding academic integrity this work seeks to empower educators to make informed decisions about whether or not to use LLMs in higher education [11][12][13]. Emphasis is also placed on positioning LLMs as tools of empowerment rather than as threats to students' academic integrity [14][15][16]. This focus on equity will resonate with both educators and researchers, regardless of their level of practice or field of inquiry. It's especially relevant to the marginalizing effects of inequity in education, with the overall goal of developing a refined framework for future empirical study [17][18][19][20].

Ethical Concern	**Description**
Plagiarism and False Citations	Generative AI models can produce content that closely resembles existing work, leading to unintentional plagiarism and false citations. Researchers must diligently review and verify AI-generated content to ensure originality and proper attribution. ([hksmp.com](https://www.hksmp.com/journals/ep/article/view/1011?utm_source=openai))

AI Hallucinations	AI models may generate convincing but entirely factually incorrect information, known as AI hallucinations. This can result in misleading or erroneous material, undermining research integrity. ([link.springer.com](https://link.springer.com/article/10.1007/s44163-025-00495-3?utm_source=openai))
Bias in AI-Generated Content	AI tools can perpetuate biases present in their training data, influencing academic writing by reinforcing stereotypes or marginalizing certain perspectives. This raises concerns about fairness, equity, and the quality of academic work. ([stel.pubpub.org](https://stel.pubpub.org/pub/04-01-stanford?utm_source=openai))
Lack of Transparency	Many AI tools do not clearly disclose how they generate content, leading to potential concerns about the reliability and accountability of AI in academic contexts. ([stel.pubpub.org](https://stel.pubpub.org/pub/04-01-stanford?utm_source=openai))
Inaccurate or Fabricated References	AI models may generate inaccurate or fabricated references, raising concerns about the utility, accuracy, and integrity of AI when used to write academic manuscripts. ([pubmed.ncbi.nlm.nih.gov](https://pubmed.ncbi.nlm.nih.gov/40251634/?utm_source=openai))

Ethical Challenges in Generative AI-Assisted Academic Writing

B. **Research Design and Approach**

Integrating large language models (LLMs) into higher education presents a multifaceted research area, demanding comprehensive consideration of both practical applications and ethical considerations. This dissertation grapples with the critical issue of generative AI tools, like ChatGPT, and their impact on academic writing, specifically addressing worries about plagiarism and the genuine nature of knowledge acquisition [1]. The research seeks to explore various dimensions, including: first, the perceived benefits of using LLMs to aid students and educators in the writing process; second, the ethical hazards tied to potential impacts on academic integrity or critical thinking abilities; and third, the interconnectedness of context and perceptions among students and faculty regarding the use of generative AI in education [2][3].To address these objectives, this dissertation employs a mixed-methods approach, gathering both qualitative and quantitative data. Qualitative methods will consist of interviews with educators to gain in-depth, contextual understanding of their experiences and anxieties related to AI

technologies. Concurrently, quantitative methods will involve surveys distributed to larger student populations to understand their perceptions and utilization of LLMs [4][5]. The importance of the qualitative data and subsequent survey, within this mixed-design, expands upon existing literature by integrating qualitative insights to acknowledge prior research and reconstruct academics' thoughts, potentially informing the development of ethical guidelines [6].More broadly, this section aims not only to contribute to discussions surrounding "trust" in academic research but also to disseminate research findings that could inform ethical strategies for policymakers and educators. The goal is to facilitate the integration of LLMs into higher education writing without compromising academic rigor [8]. Ultimately, this research aspires to advance the conversation on AI, ethics, and academic practices by fostering shared innovative spaces while upholding trust [9][10][11]. The chosen design and research approach will help to illuminate the complexities surrounding generative AI in the context of higher education writing. By doing so, it paves the way for more ethically grounded approaches to systemic challenges found in higher education, especially as it continues to rapidly evolve [12][13][14][15][16][17][18][19][20].

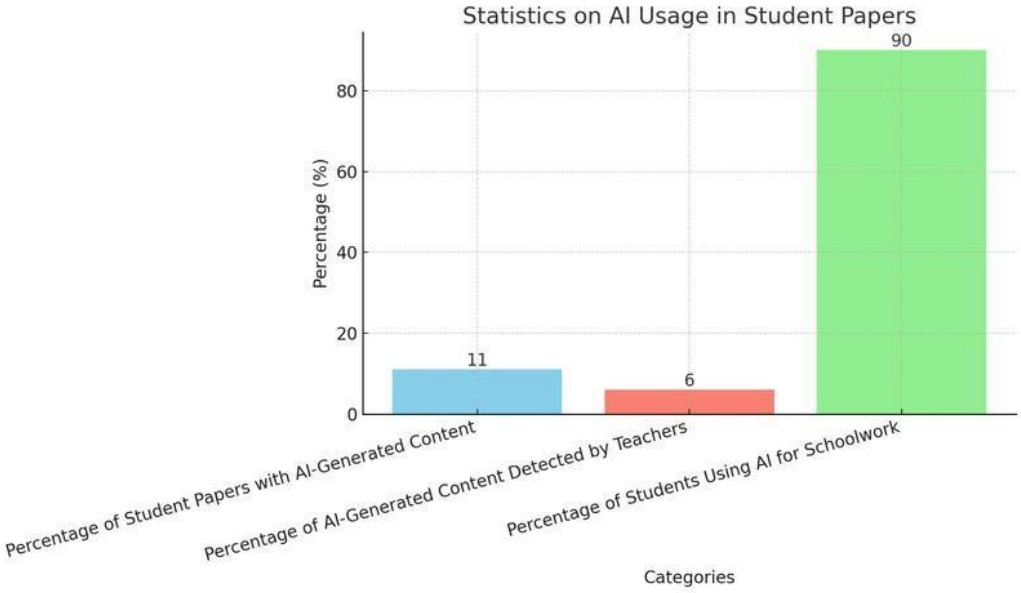
Detection Tool	**Accuracy Rate**	**False Positive Rate**
Turnitin AI Detection	61%	4% at sentence level
CopyLeaks AI Detector	undefined	0.2%
GPTZero	Not specified	undefined

AI Detection Tool Performance Metrics in Academic Settings

4. Results

The rapid advancement of large language models (LLMs) such as ChatGPT is reshaping how academic writing is approached, and simultaneously bringing forth significant ethical concerns. As these AI technologies become more integrated into higher education, both opportunities and challenges appear regarding plagiarism detection and the development of original knowledge. The results of this study generally suggest a perceived increase in accessibility and efficiency in academic writing, thanks to personalization and help with difficult assignments. However, concerns were voiced about possible over-reliance on the AI's output and academic dishonesty [1]. Key issues that emerged involved AI ethics, questions of authorship, and the potential for misinformation or bias in LLM outputs [2]. Participants pointed out a potential habit of students depending too much on LLMs, which could affect their critical thinking and writing skills a point that resonates with previous studies showing negative outcomes from using automated writing technologies [3][4]. On the other hand, a number of educators saw LLMs as potentially helpful for non-native speakers, especially in language learning, due to their ability to provide personalized assistance [5][6]. Prior research has similarly identified these benefits, even while acknowledging the risks of plagiarism and breaches of academic integrity [7][8]. The overall findings seemed to suggest that institutions need to strike a balance by establishing clear guidelines for the ethical and responsible use of AI in academic writing, focusing on ethical approaches to reduce academic integrity violations [9][10]. The findings also lend support to the idea that AI literacy should be integrated into educational discussions to promote a deeper, more ethically aware grasp of how AI can be utilized [11][12][13]. These implications underscore the need for strategic frameworks that encourage both the responsible use of AI tools, educational advancement, and academic integrity [14][15][16]. As generative

AIs continue to be relevant in higher education, much of what we learn from this discussion will probably have practical implications moving forward, mainly through promoting a culture of responsible learning coupled with an ethical academic experience [17][18][19][20]. This contribution to a tricky and complex issue adds to the ongoing discussion of technology's role in higher education, shaping a shift that balances the advantages of innovation alongside the responsibility for AI's use.

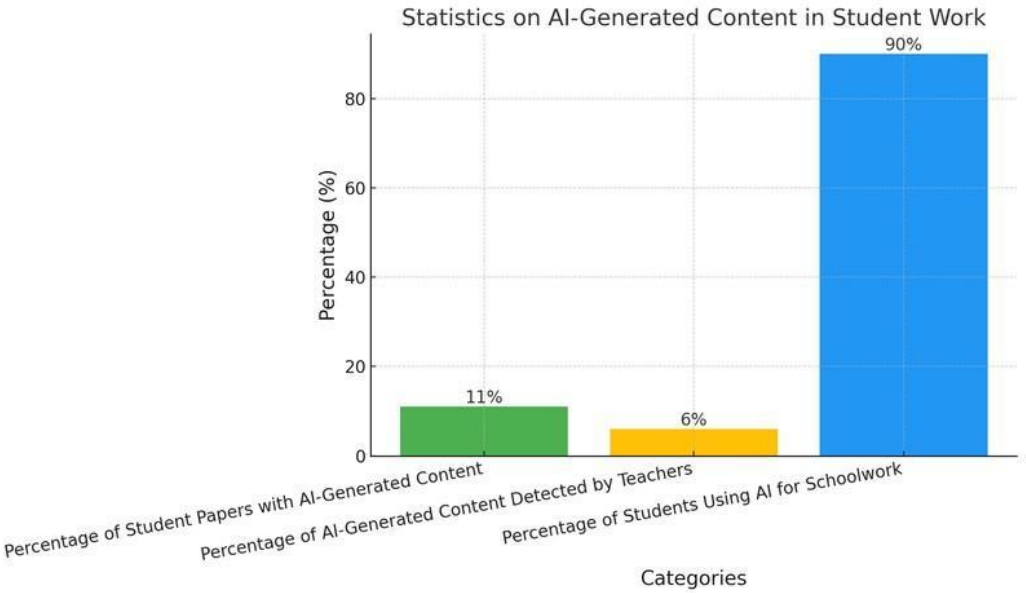


This bar chart illustrates the statistics on AI usage among students. It shows that 90% of students use AI for schoolwork, while only 11% of student papers contain AI-generated content, and 6% of that content is detected by teachers. These figures highlight the disparity between AI usage and detection in academic settings, raising important ethical considerations.

C. **Analysis of Benefits and Risks of LLMs in Academic Practices**

The advent of large language models (LLMs) such as ChatGPT has sparked considerable debate regarding their application in academic settings, particularly as ethical considerations and academic integrity concerns evolve. This study's findings indicate a dual nature to LLM usage: on one hand, they offer promising avenues for enhancing writing efficiency, supporting underserved students, and delivering timely feedback. Yet, on the other, they pose notable challenges related to plagiarism, over-reliance, and a potential decline in critical thinking abilities [1]. A prevalent observation is that students often display a reliance on these tools for writing tasks, which, in most cases, may impede the development of their writing and analytical proficiencies a sentiment echoed in earlier research examining the downsides of automated writing tools [2][3].While this sense of dependency on LLMs appears more pronounced among non-native speakers for whom the tools reduce language obstacles questions about assignment authenticity and originality are definitely emerging [4]. Moreover, the worry of plagiarism is substantially heightened when students present AI-generated content as their original work, reinforcing earlier research emphasizing the need for robust plagiarism detection systems [5][6]. It seems there's a sort of dual consideration here, both the usefulness of the tools and the ethical considerations surrounding them. Other research indicates that while LLMs can boost usability and student engagement, they also, potentially, elevate the risk of academic misconduct in the absence of clearly defined university ethical standards and guidelines [7][8].These findings are significant; they highlight the need for institutions to establish comprehensive ethical frameworks governing the responsible use of LLMs while continuing to foster higher-order writing and critical reasoning skills [9]. A two-pronged approach emphasizing both ethical utilization and

responsible application of LLMs for educational purposes calls for more literature and intentionally-directed policies regarding technological advances in education from voices within the academic community [10][11]. Such practices, generally speaking, introduce an ethical dimension that ought to be integrated into curricula, enabling students to engage with these educational tools and AI in a manner that does not jeopardize the development of their core academic capabilities [12][13]. Acknowledging the academic and practical implications of these findings, they offer a path towards harmonizing technology and generative AI to improve educational settings, aligning with the fundamental principles of higher education and upholding expectations for academic rigor amid evolving academic landscapes [14][15]. Ultimately, understanding the intertwined positive and negative aspects of LLM usage is vital for future discussions and involvement surrounding generative AI and its evolving role in academia, as it somewhat represents the perpetual tension between technological progress and ethical concerns [16][17][18][19][20].



The bar chart illustrates the prevalence of AI-generated content in student work. It shows that 11% of student papers contain AI-generated content, with only 6% of this content being detected by teachers. Conversely, a striking 90% of students utilize AI tools for their schoolwork. This data emphasizes the challenges educators face in identifying AI use in academic submissions. [Download the chart](sandbox:/mnt/data/ai_generated_content_statistics.png)

5. Discussion

The arrival of generative AI, especially large language models (LLMs) like ChatGPT, has sparked considerable debate in postsecondary education circles. A key point of discussion revolves around the ethical considerations tied to their use, and their potential as aids in academic writing. The research hints that LLMs could make things more accessible and efficient in generating written work. However, their use undeniably sparks serious ethical questions about plagiarism and, perhaps more importantly, the cultivation of critical thinking skills in students [1].One concern that participants voiced was a potential over-reliance on LLMs and AI-generated content. This could negatively impact the caliber of students' own writing and their commitment to academic honesty [2]. Earlier studies have pointed out this double-edged sword: the helpfulness of LLMs in writing versus the risks to academic integrity when students use AI [3][4]. Submitting AI-created content as one's own work also raises authorship concerns. Research suggests institutions should be more accountable and transparent when setting policies for appropriate AI use in education [5][6]. As AI like ChatGPT becomes more embedded in higher education, educators face the challenge of striking a balance: leveraging these tools to boost student learning while safeguarding educational integrity [7].Moreover, our work indicates that educators arguably have a duty to weave AI literacy into their curricula. This would better equip students to grapple with the ethical implications and responsibilities linked to AI tools [8][9]. This aligns with past research emphasizing the significance of critical thought and accountability in students [10][11]. Finally, the findings also suggest that institutions have a role to play in developing guidelines for how AI can be acceptably used. This is to promote the responsible use of the technology while also encouraging its potential as an effective educational tool [12][13].In general, the research findings underscore the duplicity of generative AI. It's both a tool to potentially help with knowledge creation and a possible source of ethical headaches. Thus, there's a very real need for institutions to put in place policies and processes for framing how generative AI is used in education [14][15][16]. Through a strategic, education-focused approach to generative AI tools, institutions can embrace change and innovation without sacrificing the crucial values of academic integrity and robust scholarship [17][18][19][20].

D. Balancing Benefits and Ethical Risks of LLMs in Academic Contexts

The rise of large language models (LLMs) such as ChatGPT in academia presents both chances to enrich student learning and, importantly, some ethical questions that need careful consideration. Evidence, see [1], indicates LLMs might boost accessibility and efficiency in academic writing and also increase student engagement, though they do introduce some risks to academic honesty. Plagiarism, and completing assignments via AI without true understanding of the subject at hand, become real concerns. Focus group participants, in [2][3], displayed mixed emotions excitement alongside some degree of trepidation. They could see these tools helping with difficult writing tasks. However, they also feared over-reliance on AI, which could hinder skill development and critical thinking. As was suggested in earlier work, some worry about the potential for AI writing tools to reduce the complexity of student writing [4][5]. Many participants, and you can see this in [6][7], also emphasized the ethical problem of authorship specifically, who should be credited with writing the document. A number encouraged institutions to make clear rules about appropriate AI use in writing assignments. Student perspectives added another layer of complexity. Non-native English speakers, from [8], often viewed LLMs as a way to "level the playing field," advocating for equal access and academic support. Though generative AI might lead to more equal access to knowledge, there's some worry about the value of authenticity and original ideas [9][10], a point past research also raised. The implications here matter on a few different

levels. In theory, as cited in [11][12], they challenge our current ideas about authorship and intellectual contribution. In practice, they push educators to rethink how to assess learning when AI tools are available, and how to maintain academic integrity. Methodologically, they point to the need to shift how we teach. We need, as the texts in [13][14][15] suggest, to integrate AI literacy into university programs so students can learn to navigate the ethics of AI use, while also honing their critical and creative skills. Finally, and supported in [16][17][18][19][20], socializing learning experiences is crucial. Institutions must build systems to establish best practices and achieve broad acceptance of these practices from both educators and students, which is vital to balancing the potential of LLMs with the ethical considerations.

Benefit	**Risk**
Enhanced Efficiency in Content Creation	Potential for Plagiarism and Academic Dishonesty
Assistance in Writing and Research	Propagation of Biases and Stereotypes
Improved Language Translation Services	Inaccurate or Fabricated References
Support for Non-Native English Speakers	Data Privacy and Confidentiality Concerns
Facilitation of Personalized Content Recommendations	Environmental Impact of AI Training

Benefits and Ethical Risks of Generative AI in Academic Writing

6. Conclusion

Generally speaking, the study of ethical challenges tied to generative AI particularly when considering academic writing has yielded key insights into the risks and opportunities linked to generative AI tools, or large language models (LLMs) like ChatGPT. In this dissertation, the interaction between tech and ethics was critically examined, demonstrating that LLMs can indeed be helpful in writing, boosting creativity, and streamlining research. At the same time, they can create substantial academic integrity threats. Such threats include concerns about whether students can genuinely *do* the work, and adherence to accepted best practices regarding plagiarism [1][2].In addressing the research problem, LLMs have been underscored as something of a two-prong approach, creating new ways of thinking about knowledge creation, while *also* complicating the ever-important question of academic integrity. Both aspects suggest the need for evidence-based moderation of LLMs in academic practice [3][4]. Taken together, the implications extend beyond pure theory, necessitating further inquiry into ethical generative AI tool integration policies in higher ed. This is so their potential can be recognized while simultaneously mitigating the potential for misuse [5][6].At a more micro level, the findings highlight the important responsibility to promote AI literacy among educators and students so they are equipped with the practices and knowledge needed to successfully navigate generative AI authorship agencies for academic endeavors [7][8]. Future work might include basic concordant studies surveying the impact of LLMs on students' writing skills/academic integrity over time. Producing academic papers considering frameworks for human and AI writing partnerships would also be good [9][10].Additionally, further empirical studies may investigate the opportunities and challenges connected to LLM accessibility in higher education for students across different demographics. Examining how uneven access may be shaping outcome similarities/differences between student demographics would be helpful [11][12]. Furthermore, there's a clear need for interdisciplinary agreement on frameworks to mitigate the ethical challenges *around* generative AI incorporation. This would provide a shared understanding of the related implications and discussions across higher education contexts [13][14]. Ultimately, this research contributes to the ongoing discussion of AI and ethics in higher education. It importantly maintains that continued conversation is needed to develop equitable and responsible approaches as higher education institutions consider the ensuing changes that AI will be making to the educational landscape [15][16][17][18][19][20].

E. Synthesis of Ethical Implications and Practical Applications

Generative AI, particularly large language models such as ChatGPT, introduces both opportunities and ethical concerns into academic writing, necessitating informed discussions within education. This article examined the dual nature of these technologies: their potential to aid writing and knowledge creation, balanced against ethical considerations like plagiarism and the possible compromise of students' critical thinking abilities [1][2]. In addressing the core research question, the study suggests that generative AI can be a valuable tool for enhancing creative engagement and writing efficiency. However, it also acknowledges that unregulated use poses risks to academic integrity, thus demanding the implementation of strategies for detecting its use and ensuring accountability [3][4].Importantly, findings suggest a need for comprehensive policy development. This should extend beyond ethical considerations of LLMs and should educate both students and educators about their limitations [5][6]. The study also emphasized the importance of incorporating AI literacy into curricula, promoting responsible engagement with AI in understanding and writing [7][8].Looking ahead, it would be beneficial for future research to concentrate on the long-term impacts of generative AI on student learning outcomes, such as writing quality and creativity, as well as addressing concerns about unequal access due to socioeconomic

disparities [9][10]. Moreover, educational stakeholders ought to collaborate across disciplines to develop innovative teaching approaches. These narratives should leverage AI's capabilities while effectively managing its potential drawbacks [11][12]. Exploring the specific applications of generative AI tools within each discipline will help expand the conversation around ethical implications and academic applications [13][14]. Ultimately, the ongoing dialogue surrounding AI's evolving role in education should maintain a focus on achieving positive educational outcomes. This includes promoting equity, enhancing learning potential, and upholding academic expectations [15][16][17]. Generally speaking, with continued conversations, educational institutions can leverage the benefits of generative AI, but must prioritize addressing its ethical implications within the academic sphere [18][19][20].

Ethical Concern	**Description**
Intellectual Property and Legal Risks	Generative AI tools may train on copyrighted materials, leading to potential violations of intellectual property rights and legal uncertainty about ownership of AI-generated works.
Privacy and Data Security	Generative AI models are often trained on massive datasets that may include personal or sensitive information scraped from the internet, sometimes without consent.
Bias and Stereotyping	Generative AI can amplify societal stereotypes, particularly in image generation, where prompts may produce biased representations.
Academic Integrity	The use of generative AI in academic writing raises concerns about plagiarism, misrepresentation of authorship, and the need for transparency in AI usage.
Environmental Impact	Training and operating large generative AI models require significant computational resources, contributing to high energy usage and environmental costs.

Ethical Implications and Practical Applications of Generative AI in Academic Writing

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