Ethics and Improvement: Undergraduate Students' Use of Artificial Intelligence in Academic Endeavors

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Abstract

This study explores ChatGPT's utilization among undergraduate students, examining its prevalence, impact, and ethical dimensions in an evolving educational landscape. While prior research acknowledges technology's increasing role in education, specific patterns of AI tool utilization and ethical dimensions remain less explored. This study aims to bridge that research gap by offering a comprehensive understanding of AI's impact on students and their education.

The findings demonstrate swift ChatGPT integration among undergraduate students. Notably, 65% of surveyed students utilized ChatGPT for academic tasks while 48% employed it for non-academic purposes. Students reported experiencing moderate academic improvements across various classes, with none indicating no perceived improvement from ChatGPT use. Ethical perspectives among students were diverse, as some students regarded AI use in education as ethically acceptable, while others expressed reservations. Moreover, students that actively engaged with ChatGPT exhibited a greater ethical acceptance of its educational use compared to those who did not. A moderate correlation that linked students' ethical views to their perceived academic benefits was also found.

1. Introduction

The integration of artificial intelligence (AI) into the realm of higher education marked the beginning of a period of profound change, with OpenAI's ChatGPT [1] emerging as a leading force in this technological revolution. The tremendous influence of AI is evident in its near-instance transformative effect on education, as it has the ability to reshape traditional paradigms and provide innovative solutions to persistent challenges [2], [3], [4], [5]. Within the corridors of academia and across various social media platforms, both researchers and educators are actively engaging in discussions about the application of ChatGPT in educational contexts. Levine [6] highlights teachers' divergent perspectives on ChatGPT, characterizing it either as a dangerous remedy with incredible side effects or as a powerful remedy with possible negative side effects. In light of these ongoing discussions, this article thoroughly examines the ethical considerations involved in the integration of ChatGPT and its complex ramifications further to understand undergraduate students' interactions with this emerging tool.

2. Literature Review

In the context of rapid technological evolution, artificial intelligence (AI) has emerged as a transformative force in higher education, prominently represented by OpenAI's ChatGPT [1]. Since the most publicly recognized iteration of ChatGPT was launched in 2022, AI's impact has been revolutionary, redefining traditional pedagogical paradigms and offering ingenious solutions to long-standing challenges. While much attention is devoted to evaluating ChatGPT's educational efficacy, the ethical dimensions of AI adoption, particularly within higher education, beckon exploration. Bridging this gap, this review delves into prior research to investigate the ethical considerations enveloping ChatGPT's integration. With a spotlight on undergraduates' engagement with ChatGPT, this review highlights the intricate ethical implications where technological advancement converges with academic pursuit.

2.2. Ethical Dimensions and Perceptions of Artificial Intelligence (ChatGPT)

The integration of advanced AI tools like ChatGPT into educational environments has ignited a profound ethical discourse; however, only a small literature base exists due its emerging nature that discusses students' perceptions of this emerging technology, a component that should be central to the discourse of AI and education. Xiao et al. [7] highlighted the spectrum of these perceptions that underscores the complexity of this issue. Ranging from a recognition of ChatGPT as a potent ally in bolstering academic tasks [7] to concerns that encompass the very essence of academic integrity and genuine learning experiences [8], [7]), this duality of perspectives demonstrates the versatility of AI integration and accentuate the considerations that educators and institutions must grapple with. Student perceptions of ChatGPT's effectiveness exhibit a mixed stance: Some students appreciate its aid in academic tasks and research, others as a necessary resource, yet even those who use it struggle to articulate their own ethical views on this AI's usage. Some express concerns about plagiarism, academic dishonesty, and the potential erosion of genuine learning experiences [8], [7].

Student discourse echoes the broader public sentiment, as García-Peñalvo [4] found reactions to ChatGPT's launch ranging from innovation enthusiasts to those gripped by dystopian fears. Sok

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and Heng [9] emphasized "the convenience of using ChatGPT, students, especially those who work on last-minute assignments, may use this tool as a means to create their work entirely without using their analytical thinking and decision-making skills" (p.7). Yu [3] echoed these concerns, arguing that over-reliance on AI could weaken independent thinking and trigger ethical and privacy dilemmas. Amid ChatGPT's support for research and drafting, apprehensions loom over diminished authorial ownership [10], [9].

2.3. Diverse Educational Applications of ChatGPT in higher education.

Limited research has investigated students' perceptions regarding the optimal utilization of ChatGPT; however, educators have notably contributed to the discourse by extensively interrogating the potential applications of ChatGPT within the academic realm. ChatGPT its most recognized form has only been available since late 2022 thus, understandably, much peer-reviewed literature is only just emerging. Noteworthy research by Sison et al. [11] stands out within this literature base, which outlined a comprehensive array of optimal uses for ChatGPT, ranging from brainstorming and generating ideas to transforming text styles. Additionally, ChatGPT proved valuable for a range of editing tasks, providing coding assistance, preparing lesson plans, enhancing critical thinking through assessments and evaluations, and serving as a language tutor and benchmark for writing quality. Echoing these findings, Parker et al. [12] noted the uses of ChatGPT in higher education and academic research, particularly in aiding the composition of research articles, generating research article titles and summaries, condensing text, identifying rudimentary analyses and conclusions, and articulating limitations of the research.

As ChatGPT continues its trajectory of advancement and development, the spectrum of its applications is expected to broaden markedly. In the first year following its major release, ChatGPT extended its functionality to include plugins, thereby enabling users to craft bespoke versions suited to their unique requirements. Moreover, it ventured into domains such as image creation and data analytics, indicative of an expanding range of capabilities.

2.4. Conclusion

The integration of OpenAI's ChatGPT in higher education prompts both transformative shifts and ethical deliberations. This review captures diverse perspectives, reflecting the multifaceted nature of ChatGPT implementation. Ethical considerations include plagiarism concerns and other responsible usage discussions [8], [7]. While ChatGPT exhibits potential in academic contexts, variations and limitations persist [13], [14], [15]). Amidst efficiency gains, concerns about critical thinking and genuine learning experiences arise [16], [9]. Balancing benefits and challenges, this review underscores the need for nuanced and responsible ChatGPT integration in higher education. The ongoing discourse on ChatGPT's ethical aspects, academic utility, and impact on learning, exemplified by Parker et al. [12], lays the foundation for future research and policy considerations by emphasizing ethical contemplation, practical integration, and the cultivation of enriching learning environments.

Irrespective of the specific author or the particular aspect of artificial intelligence being scrutinized, the consensus on the need for further research is unmistakable. This need is not a novel assertion but one that has been previously articulated by other scholars in the field. Notably, Pavlik [17] asserts, "Further research is needed to systematically investigate, assess, and critically examine generative AI systems such as ChatGPT" (p. 92). The continuous evolution and rapid advancement inherent in both the realms of technology and education underscore the ongoing necessity for such research. Supporting this perspective, Parker et al. [18] and Parker et al. ([19] both emphasize the critical need for research, particularly to determine if artificial intelligence systems exhibit biases or the potential for discrimination in their application.

3. Methods

This study investigated the following research questions:

- How prevalent is the use of AI (ChatGPT) by undergraduate students when completing non-academic tasks?
- How prevalent is the use of AI (ChatGPT) by undergraduate students when completing academic tasks?
- Do students believe the use of AI (ChatGPT) has improved their academic work?
- Do students believe the use of AI (ChatGPT) to complete academic work is ethical?
- How do the students' ethical beliefs influence their use of AI (ChatGPT) to complete academic tasks?
- Is there a correlation between students' ethical beliefs on AI and the improvement they perceive AI providing on academic tasks?

To answer these questions, a survey was distributed to seven sections of undergraduate students in a variety of courses in the School of Education and Human Sciences at a Midwest University. The 7 selected courses cover a diverse range of subjects, encompassing Mathematics, English pedagogy, Teaching English to Speakers of Other Languages (TESOL), Information and Communications Technology (ICT), and introduction

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to teaching seminars. In Spring 2023, researchers administered the survey to freshmen, sophomores, and juniors enrolled in these courses.

All 124 unique undergraduate students in these courses were asked to participate in the study. Researchers communicated in both written and verbal communication that student participation would not impact their grades or relationship with their course instructor; 68 (55%) of the students chose to complete the survey. This survey consisted of multiple-choice and Likert-type items. The survey was distributed and completed using Qualtrics software. The data was analyzed using Jamovi software and all statistical analyses were performed at the .05 level of significance. It should be acknowledged that the employment of a convenience sampling methodology in this study as highlighted above potentially constrains the extent to which the ensuing results can be generalized.

4. Results and Discussion

The Results and Discussion sections have been integrated to present a comprehensive overview and analysis of the study's findings. Each of the six research questions have been examined to facilitate a more in-depth discussion of the outcomes.

4.1. Research Questions One and Two

The first section of the results and discussion will begin to answer the following two research questions, including how prevalent is the use of AI (ChatGPT) by undergraduate students when completing non-academic tasks? and how prevalent is the use of AI (ChatGPT) by undergraduate students when completing academic tasks?

Table 1. Self-reported prevalence of ChatGPT usage among undergraduate students

	Yes	**No**
Have you used AI (ChatGPT) for purposes outside of school this semester?	33	35
Have you used AI (ChatGPT) for the purpose of studying this semester?	30	38
Have you used AI (ChatGPT) for help completing an assignment this semester?	39	29

Table 1 provides a snapshot of the prevalence of ChatGPT usage among the surveyed undergraduate students, offering valuable insights into the integration of AI tools into undergraduate student's academic routines. It is evident from the data that a notable proportion of respondents, specifically 30 out of 68 students, had actively engaged with ChatGPT for the purpose of studying during the semester. Additionally, a slightly higher number, 39 out of 68 students, reported using ChatGPT to seek assistance in completing assignments. This observation underscores the growing significance of AI tools, like ChatGPT, as educational aids within the academic sphere. The fact that a substantial portion of students have incorporated ChatGPT into their academic practices suggests that these tools are playing a role beyond mere novelty. Instead, they are actively contributing to students' learning experiences.

This finding underscores a significant trend: Within just 6 months of widespread adoption, nearly half of the students (48%) had already incorporated AI, specifically ChatGPT, into their non-academic tasks. Considering the relatively short time frame between the adoption of this technology and the study, it raises an intriguing question: will this percentage continue to rise over time, potentially extending its usage beyond educational contexts to non-academic realms? Conversely, there is also the possibility that as the initial excitement and novelty surrounding ChatGPT subside, its utilization for non-academic purposes may decrease. This phenomenon prompts us to ponder the future trajectory of AI integration into daily life and its evolving role in both educational and non-educational spheres.

Table 2 further breaks down the overlap of the use of ChatGPT when completing academic tasks.

Table 2. Overlap in ChatGPT Usage Among Undergraduate Students for Studying and Assignment Completion

	Use of ChatGPT for studying		
	Yes	No	Total
Use of ChatGPT for Assignments: Yes	37%	7%	44%
Use of ChatGPT for Assignments: No	21%	35%	56%
Total	58%	42%	100%

This Table presents the usage patterns of ChatGPT among undergraduate students, revealing the extent of its combined use for both studying and assignments, as well as its isolated application for either task, while also providing specific breakdowns for each category. In the surveyed population, 44% of students reported using ChatGPT for studying, while 56% did not utilize this AI tool for this purpose. This statistic underscores that ChatGPT is actively employed by a substantial portion of the student body as a study aid. Interestingly, there's a notable contrast in the surveyed population when considering ChatGPT's use for non-academic work, where 48% of students have embraced its utility, suggesting that ChatGPT's adoption for non-academic tasks slightly surpasses its use for studying.

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It is worth emphasizing that this level of adoption (44%) is particularly noteworthy, given that ChatGPT is a relatively new tool that many students were unfamiliar with prior to 2023. The tool's appeal likely lies in its perceived ability to enhance the learning experience by providing explanations, clarifications, or supplementary information to aid in comprehension.

Although only 44% of the surveyed students used ChatGPT for studying, more than half (58%) used AI for assistance when completing assignments. Table 2 provides insight into the overlap of ChatGPT usage between studying and assignments. Notably, 37% of the total surveyed students reported using ChatGPT for both studying and assignments, demonstrating a significant intersection of these two academic functions. Conversely, only 7% of students used ChatGPT solely for studying without applying it to assignments. This finding suggests that the initial engagement with ChatGPT, particularly when students begin using it for some form of academic task like studying, may serve as a crucial bridge to more extensive AI usage. Once students have integrated ChatGPT into their academic routines, they appear more likely to employ it for various academic tasks, including assignments. In total, 65% of the students surveyed have used ChatGPT for some academic purpose, yet only 37% used it for both studying and completing assignments.

For future research, it would be advantageous to closely observe the evolving intersection of these two domains: the use of AI in academic contexts. This involves assessing whether AI continues to be predominantly utilized for assignments over studying, in comparison to the baseline results of this study. Additionally, exploring whether AI's application for studying might surpass its use for assignments and contemplating the possibility of a complete convergence between these two spheres would provide valuable insights.

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4.2. Research Question Three

This section will unpack the research question: do students believe the use of AI (ChatGPT) has improved their academic work? Table 3 shows the descriptive statistics of students when asked if they believe their academic work has improved by using ChatGPT (1=No Improvement, 5= Much Improvement). Only those students who previously answered "Yes" to using ChatGPT for studying or assignments were presented with this question during the survey.

Table 3. Students' Belief in the Improvement of Academic Work through the use of AI (ChatGPT)

Descriptive	Value
N	34
Mean	3.353
Median	3
Standard Deviation	0.917
Minimum	2
Maximum	5

Thirty-four students engaged in this segment of the survey, representing a diverse cross-section of the cohort under study. The mean score of 3.353 suggests a moderate level of perceived improvement in academic work attributed to ChatGPT's assistance. The median score of 3 further underscores this trend, indicating that a significant proportion of students view ChatGPT as a tool that has a moderately positive impact on their academic performance. It is noteworthy that none of the 34 students selected the lowest rating of "No Improvement" (1), as shown in Figure 1 below, reinforcing the overarching sentiment that ChatGPT has contributed positively to their academic endeavors. The data's consistency, as reflected in the relatively low standard deviation of 0.917, underscores the reliability of these findings.

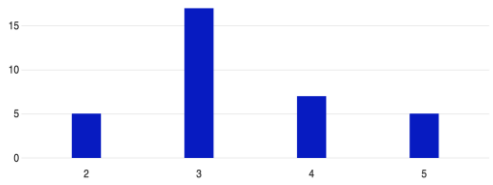

Figure 1. Students' rankings (1-5) on the perceived improvement of their academic work through ChatGPT usage

Note: Of the 34 students who responded to this question, no students selected 1 (no improvement).

Digging deeper into this data, an independent samples t-test was conducted to explore the connection between students who actively utilize ChatGPT for studying and those who believe that AI contributes to an enhancement in their academic performance.

The findings depicted in Figure 2 are striking. Students who have integrated AI into their study routines (M = 3.591, SD = 0.959) demonstrate a more robust belief that AI enhances academic performance

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in comparison to their peers who have not yet incorporated AI into their study routines (M = 2.917, SD = 0.669).

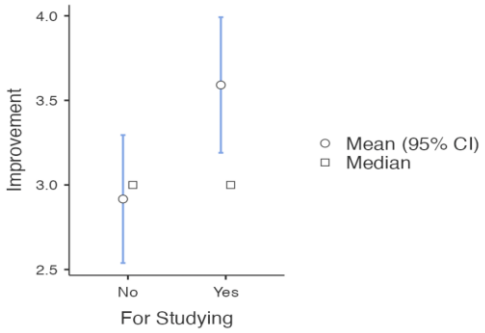

Figure 2. Independent sample t-test on the relationship between AI usage and perceived academic performance enhancement

This observed difference between the two groups prompted the application of a t-test that did not assume homogeneity of variance, as indicated by a violation of Levene's Homogeneity of Variance test, $F(1, 32) = 5.035$, $p = 0.032$. The ensuing Welch's t-test continued to yield significant results, $t(29.853) = -2.398$, $p = 0.023$, further affirming the link between AI usage for studying and an enhanced perception of academic improvement.

The results from this section imply that students who have incorporated ChatGPT into their academic routines generally perceive it as a tool that improves their academic work. This observation underscores the potential utility of AI tools such as ChatGPT in enhancing the educational experience. It is crucial, however, to underscore the necessity of responsible and ethical AI usage while further investigations and discussions are warranted to delve deeper into the multifaceted implications of AI integration in academia.

4.3. Research Question Four

This section will investigate the following question: do students believe the use of AI (ChatGPT) to complete academic work is ethical?

Table 4 shows the descriptive statistics of students when asked if the use of AI (ChatGPT) when completing academic tasks is ethical (1=very unethical, 5=very ethical). The data paints a portrait of the ethical landscape surrounding AI adoption in education. With a mean score of 2.938, the findings indicate a complex array of ethical perspectives on the use of AI to complete academic work.

The median score of 3 further underscores the intricacies of students' ethical considerations. Positioned at the midpoint, this score reflects a balance in the cohort's perspectives. Some students view AI use in education as ethically sound, while others harbor reservations. The standard deviation of 1.014 highlights the variability in these ethical viewpoints, emphasizing the multifaceted nature of ethical deliberations in the context of AI integration in education.

Table 4. Students' perception of the ethicality of using AI (ChatGPT) for academic work

Descriptive	Value
N	65
Mean	2.938
Median	3
Standard Deviation	1.014
Minimum	1
Maximum	5

The range of scores spanning from 1 to 5 captures the full spectrum of ethical stances within the cohort. Figure 3, which provides a visual display of the data, shows the breadth of perspectives and the coexistence of pronounced ethical concerns alongside endorsements of AI's ethical use. These data underscore the diversity of viewpoints that shape the academic community's ethical stance toward AI.

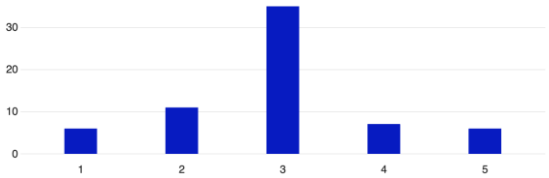

Figure 3. Student Rankings on the Ethicality of AI (ChatGPT) Usage in Academic Tasks (1=Very Unethical, 5=Very Ethical)

These findings prompt consideration of the ethical complexities inherent in AI integration in education. While AI technologies hold great potential for enhancing learning experiences, students' ethical concerns must be addressed. Responsible AI implementation requires a delicate balance between harnessing AI's capabilities and ensuring that ethical principles, academic integrity, and critical thinking are upheld. The coexistence of varying ethical viewpoints reinforces the importance of an ongoing dialogue among educators, students, and policymakers to guide the responsible and ethical integration of AI tools into educational practices. Such discussions should not only acknowledge the diverse ethical landscape but also actively seek to establish ethical guidelines that safeguard the educational process while harnessing the benefits of AI-driven support.

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4.4. Research Question Five

Research question 5 seeks to understand the research question, how do the students' ethical beliefs influence their use of AI (ChatGPT) to complete academic tasks?

To ascertain the relationship between AI utilization in educational contexts and the ethical views held by undergraduate students, an independent samples t-test was conducted. The data, as depicted above in Figure 4, yields valuable insights into the relationship between AI usage and ethical considerations.

Those students who utilize AI for studying (M = 3.414, SD = 0.867), perceive this usage as more ethical than their counterparts who do not employ AI for this purpose (M = 2.556, SD = 0.969). This finding, signified by a significant t-value of t(63) = -3.718, p < .001, underscores a distinct association between AI usage for studying and an ethical endorsement of such usage.

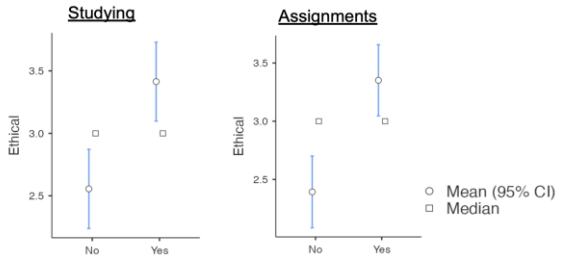

Figure 4. Relationship between AI Ethical Perspective and Its Use for Studying and Assignments

Similarly, when considering the use of AI for assignments, students who integrate AI into this facet of their academic endeavors (M = 3.351, SD = 0.949) exhibit a belief that it is more ethical compared to those who refrain from such usage (M = 2.393, SD = 0.832). This association is underscored by a significant t-value of t(63) = -4.248, p < .001, suggesting a notable linkage between AI utilization for assignments and a favorable ethical perception.

These findings emphasize a notable interaction between students' practical use of AI, whether for studying or assignments, and their ethical perspectives on AI. Furthermore, these findings highlight the importance of considering the ethical dimension when exploring AI adoption in academia, suggesting that students who use AI are more inclined to perceive such usage as ethically sound. It is imperative to recognize that these findings merely scratch the surface of the intricate ethical complexities that underpin AI integration in education. As technology continues to advance and AI becomes increasingly integrated into academic practices, ongoing examination and discussions are essential to gain a deeper understanding of the ethical dimensions, responsibilities, and challenges that emerge within this evolving educational landscape.

This research highlights the entwined relationship between AI utilization, ethical beliefs, and academic tasks, emphasizing the importance of ethical considerations in shaping students' perspectives and decisions regarding AI adoption. These findings serve as a foundation for continued exploration of the ethical dimensions of AI integration in education, with the aim of fostering responsible and thoughtful AI usage in academic settings.

4.5. Research Question Six

This research investigates if there is a correlation between students' ethical beliefs on AI and the improvement they perceive AI providing on academic tasks. The analysis below aimed to uncover the interplay between ethical considerations and the perceived impact of AI, specifically ChatGPT, on academic performance.

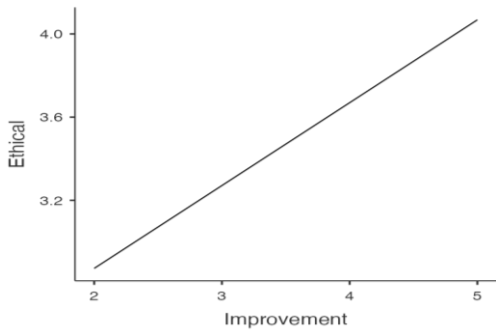

Figure 5. Bivariate Linear Regression Analysis of Students' Ethical Perspectives on AI and Perceived Academic Task Improvement Facilitated by AI

Figure 5 showcases the results of a bivariate linear regression analysis purposed with scrutinizing the intricate relationship between students' ethical perspectives on AI and their perceived improvement in academic tasks facilitated by AI. This linear regression analysis revealed a moderate correlation between the two variables, as evidenced by an R^2 value of 0.146. The accompanying statistical analysis, F(1, 32) = 5.457, p = 0.026, reveals that approximately 14.6% of the variance surrounding students' ethical viewpoints on AI within academic contexts can be attributed to the variation in their perceptions of AI's academic benefits. These results collectively underscore the intricate nature of students' ethical beliefs and their assessments of AI's impact on academic work. The findings suggest that students who embrace AI in their educational pursuits tend to perceive it as a valuable tool for improving their academic performance. Furthermore, this correlation underscores the significance of all stakeholders, including students, schools, and beyond, needing to

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conscientiously consider ethical dimensions when integrating AI into education.

Further exploration and nuanced discussions are imperative to unravel the intricacies and complexities of this relationship. Ethical considerations, alongside technical, pedagogical, and practical aspects, should be integral to future endeavors in AI integration within educational settings. Ultimately, fostering a holistic and responsible approach to AI adoption in education is essential for both educators and students alike.

5. Key Findings

The integration of AI, particularly ChatGPT, into the lives of undergraduate students has unveiled a dynamic landscape that must be navigated thoughtfully and responsibly. Researchers delved into six crucial research questions examining AI prevalence, its influence on academic tasks, ethical dimensions, and the intricate connection between ethical beliefs and academic enhancements. The study's key findings underscore the following components:

AI Prevalence: In the span of just six months following ChatGPT's public release nearly half of the surveyed students (48%) had already incorporated ChatGPT into their non-academic tasks, highlighting the rapid integration of AI into daily life.

Academic AI Adoption: A significant proportion of students actively engaged with ChatGPT for academic purposes, with 30 students using it for studying and 39 for completing assignments. Overall, 65% of the students surveyed used AI for academic purposes. This suggests that AI tools like ChatGPT are actively contributing to students' learning experiences.

Overlap in Academic Usage: The overlap in ChatGPT usage for studying and assignments was notable, with 37% of students using it for both purposes. This indicates that once students integrate AI into their academic routines, they are more likely to employ it for various academic tasks, showcasing a pivotal bridge in their AI adoption journey.

Perceived Academic Improvement: Students who incorporated ChatGPT into their academic routines generally perceived it as a tool that brought about improvement in their academic work. The findings emphasize the potential utility of AI tools like ChatGPT in enhancing the educational experience.

Ethical Dilemmas: Students exhibited diverse ethical viewpoints on the use of AI for completing academic tasks, indicating a complex array of ethical perspectives. This landscape underscores the necessity of addressing ethical concerns when integrating AI into education.

Ethical Influence on AI Usage: Students who actively engaged with AI for studying or assignments were more inclined to perceive such usage as ethically sound. These findings emphasize the interplay between students' actual AI utilization and their ethical viewpoints, highlighting the need for ongoing discussions and ethical guidelines in AI integration within education.

Ethical Beliefs and Academic Improvement: There exists a moderate correlation between students' ethical perspectives on AI and their perceived improvement in academic tasks.

6. Significance

The significance of the study lies in its contribution to deepening comprehension regarding the swift integration of AI, specifically ChatGPT, within the academic experiences of undergraduate students, as well as the many ramifications this integration has for higher education. This study looks to narrow the significant gap in the current body of literature by examining the frequency, consequences, and ethical considerations associated with the utilization of ChatGPT. Existing studies have largely focused on broader technological developments, neglecting to explore the particular ways in which AI tools are used by students. Additionally, the findings of this study emphasize the significant impact that artificial intelligence may have on the field of education. This highlights the need for educators, policymakers, and researchers to carefully deliberate on how these technological advancements might be effectively used to improve the quality of learning experiences while simultaneously taking into account ethical concerns that may arise.

This research underscores the importance for higher education professors to remain alert to evolving trends in educational technology and to judiciously incorporate AI into teaching methodologies. This is underscored by the finding that over 50% of the students surveyed have already integrated ChatGPT into their daily routines.

The investigation performed by this study may be of great use to educational institutions seeking to establish ethical rules and frameworks for the integration of AI. Furthermore, it is important to note that the modest link shown between ethical perspectives and perceived academic advantages implies that it is important to comprehend students' ethical deliberations in order to optimize the beneficial effects of AI in the field of education. In summary, the significance of this study lies in its comprehensive examination of the incorporation of AI into undergraduate education. This research provides valuable insights that might contribute to the development of future educational policies, practices, and research agendas within the context of a more

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technology-oriented educational environment.

7. Conclusion

Often attributed to Albert Einstein, the quote “The only source of knowledge is experience” resonates in the context of AI. Engaging with and academically exploring AI facilitates the acquisition of knowledge about this relatively novel software.

The endeavor of this research was to understand undergraduate student use of AI, particularly ChatGPT. The findings made clear that this study is part of the needed literature base to fully comprehend the major impact AI has and will continue to have on education. This study revealed that AI is not just a tool, but is emerging as a transformative force necessitating a nuanced understanding. Its capacity to enrich learning experiences, bridge academic gaps, and broaden knowledge horizons could be unparalleled in education since the advent of the internet. In striving to comprehend and utilize AI's power in education, it is imperative to continue exploring students' perceptions to grasp their underlying motivations. Remaining vigilant and anchored in ethical considerations is essential to ensure this journey leads to enlightenment and avoids peril.

8. References

[1] Parker, L., Carter, C., Karakas, A., Loper, A. J., and Sokkar, A. (2024a). Graduate Instructors Navigating the AI Frontier: The Role of ChatGPT in Higher Education. Computers and Education Open.

[2] Tlili, A., Shehata, B., Adarkwah, M. A., Bozkurt, A., Hickey, D. T., Huang, R., and Agyemang, B. (2023). What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education. Smart Learning Environments, 10(1), 15.

[3] Yu, H. (2023). Reflection on whether Chat GPT should be banned by academia from the perspective of education and teaching. Frontiers in Psychology, 14, 1181712.

[4] García-Peñalvo, F. J. (2023). The perception of Artificial Intelligence in educational contexts after the launch of ChatGPT: Disruption or Panic?. University of Salamanca Editions.

[5] Zhai, X. (2022). ChatGPT and its potential in revolutionizing education. Journal of Educational Technology Integration, 46(3), 345-367.

[6] Levine, S. (2022, December 20). Stanford faculty weigh in on ChatGPT’s shake-up in education. Stanford Education. [https://ed.stanford.edu/news/stanford-faculty-weigh-new-ai-chatbot-s-shake-learning-and-eaching?sf173917745=1].

[7] Xiao, J., Wang, Q., and Liu, H. (2023). ChatGPT policies in higher education institutions: A global perspective. Journal of Educational Policy and Planning, 28(1), 34-56.

[8] Cotton, A., Smith, B., and Williams, C. (2023). Ethical considerations of AI in higher education: Student viewpoints on ChatGPT. Ethics in Education Journal, 12(1), 45-67.

[9] Sok, S., and Heng, L. K. (2023). Unveiling the ethical implications of ChatGPT in higher education. International Journal of Ethics in Education, 25(4), 567-589.

[10] Kasneci, E., Seßler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., ... and Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. Learning and Individual Differences, 103, 102274.

[11] Sison, A. J. G., Daza, M. T., Gozalo-Brizuela, R., and Garrido-Merchán, E. C. (2023). ChatGPT: More than a weapon of mass deception, ethical challenges and responses from the human-Centered artificial intelligence (HCAI) perspective. arXiv preprint arXiv:2304.11215.

[12] Parker, L., Carter, C., Karakas, A., Loper, A. J., and Sokkar, A. (2024b). Artificial intelligence in undergraduate assignments: An exploration of the effectiveness and ethics of ChatGPT in academic work. In R. Chan and S. Sharma (Eds.), ChatGPT and Global Higher Education. STAR Scholar Books.

[13] Chia, M. Y., and Theo, R. T. (2023). Assessing the role of ChatGPT in academic performance: A comparative study. Journal of Educational Computing Research, 40(2), 213-230. DOI:10.1177/0735633123456789.

[14] OpenAI. (2023). GPT-4 technical report.https://www.openai.com/gpt-4/technical-report (Access Date: 12 November 2022).

[15] Terwiesch, C. (2023). Exploring the potential of ChatGPT in education: An empirical analysis. Journal of Higher Education Technology, 42(2), 210-230.

[16] Baidoo-Anu, A. K., and Ansah, J. A. (2023). Enhancing learning experiences through ChatGPT: Student perspectives. Journal of Educational Technology, 21(3), 56-78.

[17] Pavlik, J. V. (2023). Collaborating with ChatGPT: Considering the implications of generative artificial intelligence for journalism and media education. Journalism and Mass Communication Educator, 78(1), 84-93.

[18] Parker, L., Carter, C., Karakas, A., Loper, A. J., and Sokkar, A. (2023). Ethics and Improvement: Undergraduate Students’ Use of Artificial Intelligence in Academic Endeavors. International Journal of Intelligent Computing Research (IJICR), 13(2).

[19] Parker, L., Karakas, A., White, S., and Ward, D. (2024c). Graduate Instructors Navigating the AI Frontier: The Role of ChatGPT in Higher Education. In M. Lahby (Ed.), Empowering Digital Education with ChatGPT Tool: From Theoretical to Practical Applications. CRC Press, Taylor and Francis.

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