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Ethics-Driven Education: Integrating AI Responsibly for Academic Excellence

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Abstract

This study delves into the opportunities and challenges associated with the deployment of AI tools in the education sector. It systematically explores the potential benefits and risks inherent in utilizing these tools while specifically addressing the complexities of identifying and preventing academic dishonesty. Recognizing the ethical dimensions, the paper further outlines strategies that educational institutions can adopt to ensure the ethical and responsible use of AI tools. Emphasizing a proactive stance, the paper suggests that by implementing these strategies, schools can harness the benefits of AI tools while mitigating the risks associated with potential misuse. As the adoption of AI tools in education continues to expand, all stakeholders must stay abreast of the latest developments in the field. This knowledge equips educators to navigate the opportunities and challenges posed by AI tools, fostering a learning environment that is both secure and conducive to empowering students to realize their full potential.

Ethics-Driven Education:
Integrating AI Responsibly for Academic Excellence

Chukwuemeka Ihekweazu, Bing Zhou and Elizabeth Adepeju Adelowo

1. INTRODUCTION

Artificial intelligence (AI) holds the promise of reshaping the landscape of education across multiple dimensions, including personalized learning and automated evaluation. Murphy (2019) underscores AI's potential in aiding educators to pinpoint students grappling with specific concepts, delivering customized assistance tailored to their needs. Additionally, AI's ability to scrutinize extensive datasets facilitates the identification of patterns and forecasting outcomes, empowering educators to base decisions on well-founded, data-driven insights. The integration of AI in education extends to automating administrative tasks like grading and lesson planning, allowing teachers to allocate more time to the instructional aspect. Nevertheless, the infusion of AI into education introduces complexities, particularly in combating academic dishonesty. Cotton et al. (2023) draw attention to the escalating challenges posed by online education, making it more convenient for students to engage in various forms of cheating. While AI can play a role in detecting plagiarism, it concurrently opens doors to novel possibilities for academic misconduct. For instance, students may exploit AI-powered language generators for essay creation or resort to chatbots to manipulate online exams. Despite these hurdles, certain researchers assert that AI can contribute positively to upholding academic integrity within educational environments.

Haye and Kyobe (2020) found that using Turnitin, an AI-powered plagiarism detection tool, can help students improve their writing skills and reduce instances of plagiarism. By providing students with feedback on their writing and identifying areas for improvement, Turnitin can encourage students to engage in ethical writing practices. To effectively use AI in education while promoting academic integrity, educators and administrators need to be aware of the potential risks and benefits of AI, as well as best practices for integrating AI into their teaching practices. Chan and Tsi (2023) suggest that educators should focus on using AI to augment, rather than replace, traditional teaching methods. They also emphasize the importance of transparency and fairness in AI-based assessment systems.

O'neil (2003) asserts that there is undeniable evidence that modern technology has enhanced students' ability to engage in academic dishonesty. While there may not be a definitive solution to addressing breaches of academic integrity, especially in an online environment, there are strategies that must be implemented to instill a sense of responsibility in students. Similar to how PowerPoint transformed classrooms more than two decades ago and how real-time media is currently reshaping them, AI is poised to revolutionize the learning experience in the coming years (Bain, 2015).

Schiff (2022) suggests that ethical considerations must be at the forefront of AI implementation in education. This includes ensuring that AI systems are transparent, explainable, and unbiased. Furthermore, Striepe et al. (2023) argue that educators should prioritize teaching students about the ethical implications of AI and how to use it responsibly. By promoting ethical AI practices, educators can help ensure that the use of AI in education is consistent with academic integrity. It is worth noting that academic dishonesty is not solely the result of AI. Personality traits such as low conscientiousness and high neuroticism are associated with academic dishonesty. Therefore, promoting academic integrity requires a multifaceted approach that considers individual characteristics as well as the technological tools and systems used in education.

As the use of AI in academia becomes more widespread, there is a need to verify that academic work is of human origin. There are several AI detection tools that report a confidence level that a given textual input is of human or AI origin. In this paper, we evaluate the accuracy of these tools and comment on their suitability for detecting academic dishonesty. We use scenario-based testing to design prompts for the two leading AI chatbots, ChatGPT and Google Bard. When their generated output is fed directly into the AI detection tools, it is reliably identified as being of AI origin, suggesting that the tools are indeed suitable for detecting academic dishonesty. However, when the output is further processed using AI paraphrasers, all of the

detection tools examined fail to identify the origin as AI and instead attribute it to humans. Thus, it is impossible to accurately detect AI-generated content when it has also been paraphrased by AI.

2. ETHICAL CONSIDERATIONS IN THE USE OF AI IN ACADEMIA

The integration of artificial intelligence (AI) in scientific practices introduces a myriad of ethical considerations that demand careful examination. These concerns primarily come from the utilization of AI detection tools intertwined with elements of digital forensics involving the scrutiny of digital traces. The ethical considerations encompass the following dimensions:

Bias and Discrimination: The deployment of AI in digital forensics poses a risk of bias and discrimination, as the algorithms utilized for data analysis may inadvertently mirror the biases and prejudices embedded by their developers. This gives rise to the potential for unfair treatment of specific individuals or groups (Narayanan & Reddy, 2019).

Privacy and Surveillance: The application of AI in digital forensics raises apprehensions regarding privacy and surveillance. While AI enhances the efficiency of data analysis, it simultaneously sparks concerns regarding the extent to which personal data is subjected to monitoring and analysis (Narayanan & Reddy, 2019; Koops et al., 2021).

Transparency and Explainability: The opacity and lack of explainability in AI systems employed for digital forensics present challenges. Understanding the decision-making processes of these systems becomes intricate, making it challenging to hold individuals or organizations accountable for their actions (Goodman & Flaxman, 2017).

Intellectual Property and Copyright: The incorporation of AI in digital forensics raises intellectual property and copyright infringement issues. While AI systems facilitate the analysis of extensive data, there exists a risk of unintentional usage of copyrighted material without proper attribution or permission (Azab et al., 2020; Sharma & Baliyan, 2020).

Cybersecurity: The utilization of AI in digital forensics introduces cybersecurity concerns. AI systems may be susceptible to cyberattacks and data breaches, posing a threat to the integrity of the analyzed data (Sharma & Baliyan, 2020). These considerations underscore the importance of ensuring that the use of AI in digital forensics is done ethically and responsibly, with appropriate safeguards and oversight.

3. LITERATURE REVIEW

According to Rutner & Scott (2022), technology offers numerous advantages to society, particularly college students, by granting convenient access to diverse resources. However, with this accessibility comes the allure of utilizing information in ways that bypass the traditional learning process.

Educational institutions have been fighting against dishonest behavior since it became a persistent problem in academia decades ago (Schiff, 2022). With the proliferation of technology, students have access to a wide range of tools and resources that facilitate the dishonest behavior of cheating, such as plagiarism detection software, online forums for sharing answers, and even devices like smartphones that can be used to access information during exams. Largely, academic dishonest behavior is exacerbated by AI-based tools that can generate complete research papers and texts that resemble human speech, making it more difficult for educators to identify and stop such behavior (Sharma & Baliyan, 2020). ChatGPT and Bard are AI chatbots based on large language models that are expected to have a variety of applications in a number of fields.

Over the recent years, AI technologies have been implemented in education for use in assessment and instruction. A recently created artificial intelligence (AI) model called ChatGPT, which performs complex cognitive tasks, has gained popularity among academics in recent months. Due to this technology, the potential for academic dishonesty among students who utilize ChatGPT to generate essays and assignments has been a subject of concern (Murphy, 2019). According to Goodman and Flaxman (2017), ChatGPT has been found to pose a risk to the integrity of submitted essays, particularly in higher education settings where such requirements are common.

Google Bard AI is a newly introduced text-based artificial intelligence chatbot similar to ChatGPT. It uses machine learning and natural language processing to generate responses in real-time. It can be useful for completing creative projects, explaining complicated topics, and gathering knowledge from many online sources. Additionally, Google Bard AI can provide complex answers, such as finding recipes that use your current items in your fridge. It transforms Google

from a simple search engine into a powerful virtual assistant (Azab et al., 2020). The effectiveness of any language model, including ChatGPT and Bard AI, depends on factors such as the size of the model, the quality of training data, and the fine-tuning process. Differences in these factors could lead to variations in performance and accuracy across different tasks and domains. Users can interact with the chatbot just as they would with ChatGPT. It is worth noting that with the ongoing research and development efforts, it's likely that both ChatGPT and Bard AI will continue to evolve, offering even more sophisticated capabilities and applications in the future.

Due to the impact of the COVID-19 pandemic on society and higher education, there is a renewed interest in academic dishonesty (Cotton et al., 2023). The reasons why students intentionally violate standards of academic integrity remain unknown despite a substantial body of research on why and how they do so. Social philosophy can be used to fully address the broad question of why students engage in unethical academic practices. However, according to Hayes and Kyobe (2020), their research shows that online academic dishonesty is indeed pervasive, and the factors that contribute to this behavior include personality, cognition, and instruction. Chan and Tsi (2023) assert that in order to address the problem of students plagiarizing assignments using artificial intelligence tools such as ChatGPT, one must first understand what ChatGPT actually is and the concept of AI. Striepe et al. (2023) suggest strategies that schools can use to ensure the moral and ethical use of these ChatGPT. These approaches include creating policies and procedures, offering assistance and support, and using a variety of tools to identify and stop cheating. They conclude that while the use of AI in higher education presents both opportunities and challenges, universities can successfully address these issues by using these tools in a proactive and moral manner.

The ethical and responsible use of ChatGPT in educational contexts is a complex, multifaceted issue that requires a multidisciplinary, nuanced approach. Recent studies have highlighted the need for responsible and ethical use of artificial intelligence in education. The studies that have been conducted on this particular topic have focused on issues such as privacy, bias, and the potential for AI to widen the digital divide (Narayanan & Reddy, 2019). When using ChatGPT in educational settings, it is important to follow responsible and ethical procedures to ensure that the technology is used in a way that is safe, equitable, and considerate of students, teachers, and all other stakeholders.

Koops et al. (2021) note that the use of AI in education raises important questions, such as what should be taught and how, the changing nature of the teacher, and the social and ethical implications of the technology. There are also many difficulties, including issues of access and equity in education. There is also a growing understanding that the use of AI in education may change the fundamental basis of teaching and learning (Almeida & Apar'ıcio, 2020). An alarming trend of ChatGPT being cited as co-authors on scientific articles began to emerge (OpenAI, 2023). A number of journals quickly responded by enacting policies prohibiting ChatGPT authorship on the grounds of plagiarism, errors, misinformation, and false information, which led to preprint papers in which ChatGPT was later removed as an author.

In contrast, several journals promote the use of ChatGPT to improve writing, especially in cases where English is a second language. According to Google (2023), ethical writing is an important issue in both education and research. Unfortunately, cheating in class happens to undergraduate and graduate students alike. As a result, written essays and articles are subject to specific detection procedures, and the majority of academic institutions use a variety of technologies to combat plagiarism. However, cutting-edge artificial intelligence (AI) offers a new platform for new types of serious academic misconduct that are difficult to detect and even harder to prove.

4. RESEARCH QUESTIONS

Using two AI chatbots, ChatGPT, and Google Bard, and seven AI detection tools, we seek to answer the following questions:

1. How accurate are the AI detection tools?

Based on our research design, we were aware in advance that all input was generated by artificial intelligence.

The AI detection tools report a confidence level as to whether the input is AI-generated or human-generated, which leads to the second research question:

2. Can AI tools aid in academic dishonesty?

5. METHODOLOGY

We employ a scenario-based testing strategy, shown schematically in Figure 1, to assess the accuracy and bias of AI detection tools. We designed appropriate prompts for the two prominent AI chatbots, ChatGPT and Google Bard, to simulate common academic applications of generative AI tools in four distinct scenarios. The four scenarios include: (1) Ask the AI tool to summarize a longer text and then verify the accuracy of the output by comparing it to the original text and confirming that it was written completely by the AI tool; (2) Ask the AI tool to paraphrase a sentence or paragraph from a specific source and then check the output for plagiarism by comparing it to the original text and confirming that it was completely written by the AI tool; (3) Ask the AI tool to provide a personalized answer about its opinion on plagiarism. Sample question; and (4) Ask the AI to confirm that it actually recognizes its own work, we will refer to its individual responses to the scenario.

Their responses were either fed directly into seven different AI detection tools or post-processed by one of three AI paraphrasing tools before being sent to the detection tool. The AI detection tools report confidence, expressed as a percentage, that the input was generated by either a human or an AI. Based on this reported confidence, we provide an assessment of whether or not the specific tool is suitable for detecting generative AI output.
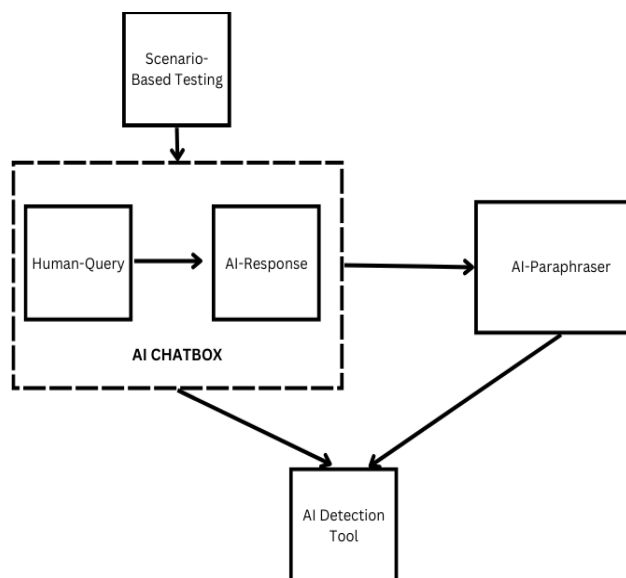

Figure 1: Proposed Methodology

AI Chat-Box

AI chatbots are computer programs that use artificial intelligence and natural language processing to simulate human conversations with users. They can be used for customer service, information retrieval, and personal assistance. There are two types of chatbots: rule-based and machine learning-based. Rule-based chatbots use rules and scripts to respond to user input, while machine-learning chatbots use algorithms to learn from user interactions. Chatbots positively impact the customer experience, increasing satisfaction and loyalty (Almeida & Apar'ıcio, 2020).

ChatGPT: ChatGPT is a large language model developed by OpenAI based on the Generative Pre-trained Transformers (GPT) architecture. It is designed to generate human-like responses to text-based prompts and can be accessed via the OpenAI API or online chat platforms (OpenAI, 2023).

Bard: Google Bard is a Large Language Model (LLM) chatbot developed by Google AI and powered by the Language Model for Dialogue Applications (LaMDA) language model. It can generate text, translate languages, write creative content, and answer questions in an informative manner. It has the potential to be a powerful tool for communication, creativity, and learning (Google, 2023).

The main difference between ChatGPT and Google Bard is the LLMs used to build them. The better the data LLMs are trained on, the better their ability to generate accurate and readable content. Bard and ChatGPT are run on different LLMs, each trained on different datasets: Bard uses PaLM 2 while ChatGPT uses GPT-3.5 and GPT-4, a larger and more updated version of GPT-3.5. Bard is free to use, while ChatGPT is free to access GPT-3.5, but access to GPT-4 costs $20 per month.

While Bard and ChatGPT may be used interchangeably in most instances, Bard excels at responding to user concerns and providing more decisive answers. ChatGPT, on the other hand, is better at creating long-form material and responding to user inputs more extensively and nuancedly. Bard also gives more up-to-date information due to its up-to-date LLM and access to the internet. ChatGPT, on the other hand, struggles to provide accurate information on events after 2021. However, it is worth noting that ChatGPT and Bard are still under development, and their capabilities are continuously expanding.

AI Paraphraser
AI paraphrasers are software programs that use AI and NLP techniques to automatically rewrite the text in a different but equivalent way. Using AI-powered paraphrase tools, authors may quickly generate alternate versions of their text in order to avoid plagiarism or improve readability. However, it is important to review and edit the output to ensure that it is suitable for the intended purpose.

Over the recent years, different AI paraphrasers have been developed for academic, business, and personal purposes. Some of the popular AI paraphrasers include:

QuillBot: QuillBot is an AI-powered paraphrasing and writing tool that uses NLP and machine learning algorithms to automatically rewrite text. It offers different modes and allows users to adjust the level of paraphrasing to suit their needs.

Grammarly: Grammarly is an AI-powered writing tool that uses NLP technology to provide real-time grammar and spelling checks, punctuation suggestions, and style recommendations to help users create clear, error-free writing.

WordTune: WordTune is an AI-powered writing tool that uses NLP and machine learning algorithms to suggest alternative phrases for written text to improve clarity, conciseness, and effectiveness. WordTune is developed by the AI writing technology company, AI21 Labs.

The three paraphrasing tools have a free version with limited features and a premium version with unlocked features. QuillBot and Wordtune can both generate high-quality rewrites. However, they may not always be correct. However, QuillBot offers a full set of writing tools for editing and improving paraphrased material. For example, you may utilize QuillBot's grammatical check to receive rewrite ideas. Additionally, the ability to freeze words and limit synonym usage contributes to more desirable outcomes. These additional capabilities make QuillBot a more powerful paraphrasing tool.

AI Detection Tool
AI detection tools use artificial intelligence techniques to identify patterns, objects, or behaviors in data. Examples include image recognition, speech recognition, fraud detection, malware detection, sentiment analysis, and object detection. Here, we will use seven different AI detectors, listed in Table 1, some of which use

different machine learning (ML) algorithms such as GPT, Robustly Optimized Bidirectional Encoder Representations from Transformers Pretraining Approach (RoBERTa), and Large Language Model Meta AI (LLaMa).

AI Detector	Machine Learning Algorithm	Platform
Zero GPT	GPT-4	Web-Based
GPT Radar	GPT-3	Web-Based
Content at Scale AI Content Detection	Semantic analysis	Web-Based
GPT-Zero	GPT-3, GPT-2, LLaMA	Web-Based
Writers AI Content Detector	GPT-3	Web-Based
OpenAI GPT2 Output Detector	RoBERTa	Web-Based
Writefull	GPT-3, GPT-4	Web-Based

Table 1: AI Detectors Comparison

6. IMPLEMENTATION

This study employs an inductive research methodology to generate the findings from the scenarios. In inductive research methodology, the researcher starts with data and observations and then uses data patterns to develop theories or generalizations (Goyal & Bengio, 2022). In this case, the researcher prompts the AI tools ChatGPT and Google Bard and analyzes the output.

The four scenarios in this study include:

Scenario 1: Ask the AI tool to summarize a longer text and then validate the accuracy of the output by comparing it to the original text and confirming that it was written completely by the AI tool. Example question: Can you summarize the main points of this article in a few sentences? "Teaching in the Online Classroom: Surviving and Thriving in the New Normal" (Education Next, 2023).

Scenario 2: Ask the AI tool to paraphrase a sentence or paragraph from a specific source and then check the output for plagiarism by comparing it to the original text and confirming that it was completely written by the AI tool. Example question: Can you give me an article about cybersecurity and paraphrase it?

Scenario 3: Ask the AI tool to provide a personalized answer about its opinion on plagiarism. Sample question: Can AI plagiarize?

Scenario 4: Ask the AI to confirm that it actually recognizes its own work, we will refer to its individual responses to scenario 1. Example question: Did you write this?

7. TESTING

Scenario 1
ChatGPT: A Survival Guide for Distance Teaching is a book that focuses on how a teacher can make the world of distance learning as much like the real world of teaching and learning as possible. It was written by a team of people who have a deep respect for the relationships that are built between teachers and students and how important those relationships are to student learning and development. The book does not try to sugarcoat the problems inherent in distance learning, but it does offer some techniques that teachers can use to make the experience as positive as possible for both themselves and their students.

Google Bard: The article is a review of the book "Teach Like a Champion: A Survival Guide for Distance Teaching" by Doug Lemov. The book provides practical strategies and techniques for instructors who teach at a distance. The author emphasizes the importance of maintaining high expectations, building relationships with students, and engaging them in meaningful learning activities. The book also includes examples of successful distance learning practices and guidance on how to adapt teaching techniques to an online environment. Overall, the article concludes that the book is a valuable resource for teachers facing the challenges of distance education.
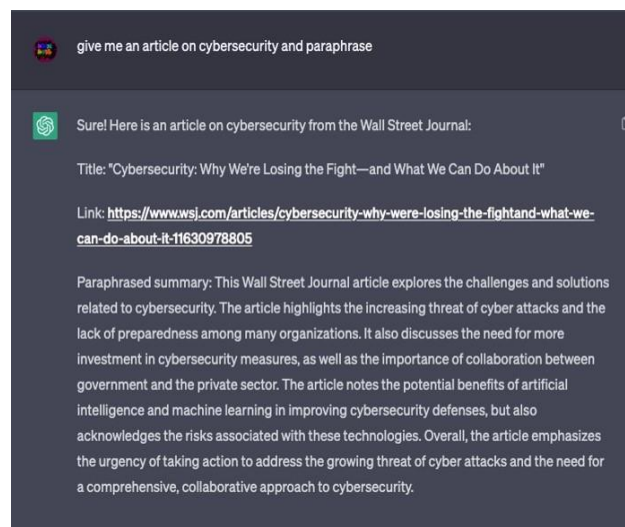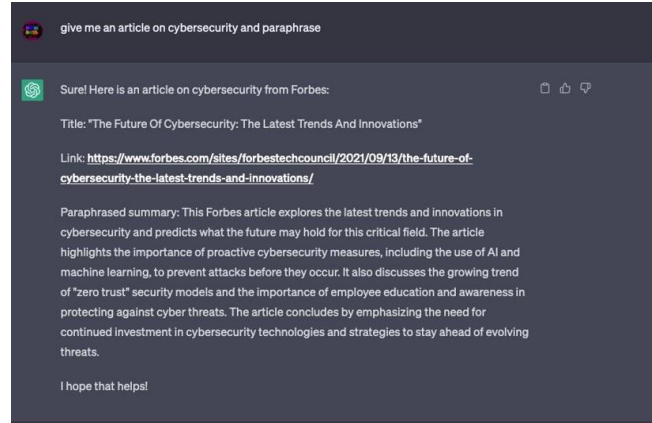

Figure 2: Output From WSJ

Figure 3: Output From Forbes
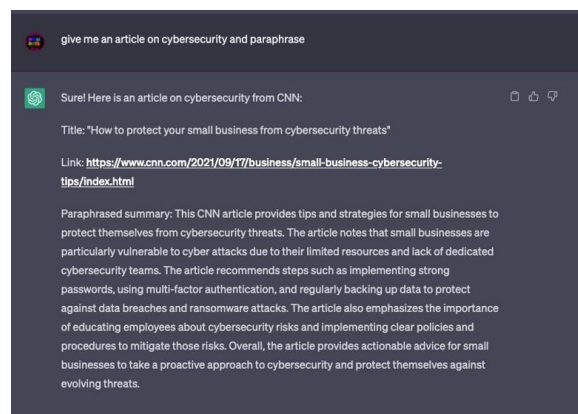
Figure 4: Output From CNN

Scenario 2
ChatGPT: Paraphrased Summary: This CNN article provides tips and strategies for small businesses to protect themselves from cybersecurity threats. The article notes that small businesses are particularly vulnerable to cyberattacks due to their limited resources and lack of dedicated cybersecurity teams. The article recommends steps such as implementing strong passwords, using multi-factor authentication, and backing up data regularly to protect against data breaches and ransomware attacks. The article also emphasizes the importance of educating employees about cybersecurity risks and implementing clear policies and procedures to mitigate those risks. Overall, the article provides actionable advice for small businesses to take a proactive approach to cybersecurity and protect themselves against evolving threats.

Google Bard: Cybersecurity is the practice of protecting systems, networks, and data from unauthorized access, use, disclosure, disruption, modification, or destruction. A cybersecurity professional is someone who is responsible for protecting an organization's information assets

from cyber threats.

Cybersecurity is a critical issue for organizations of all sizes. In recent years, there has been a significant increase in the number and sophistication of cyber-attacks. These attacks can have a devastating impact on businesses, costing them millions of dollars in lost revenue, damaged reputations, and legal fees. There are a number of things companies can do to protect themselves from cyber-attacks. These include Implementing strong security measures such as firewalls, intrusion detection systems, and data encryption. Training employees on cybersecurity best practices, such as how to recognize phishing emails and avoid clicking on malicious links. Conduct regular security audits to identify and remediate vulnerabilities. Have a plan in place to respond to a cyberattack. Cybersecurity is an ongoing challenge, but one that organizations must take seriously. By implementing strong security measures and educating employees on cybersecurity best practices, businesses can help protect themselves from cyber-attacks. Here are some additional tips for businesses to improve their cybersecurity: Use strong passwords and change them regularly. Keep software up to date. Be careful about the information you share online. Use a firewall and anti-virus software. Back up your data regularly. Stay informed about the latest cyber threats. By following these tips, businesses can help protect themselves from cyber-attacks and keep their data safe.

For Google Bard, they had no links or citations to suggest further research on their answer.

Scenario 3

In this scenario, we want to evaluate how ChatGPT and Google Bard evaluate the ability of AI tools to plagiarize, i.e., copy verbatim the work of others. This question is particularly interesting for generative AI tools trained exclusively on external sources such as book texts, news articles, and academic papers. The responses of ChatGPT and Google Bard to the question "Can AI plagiarize?" are shown in Figures 5 and 6, respectively. In the initial image, the assertion regarding AI's capacity for plagiarism lacks direct confirmation.

However, it appears to suggest that such a perception should be acknowledged if one perceives AI as capable of plagiarism. The statement underscores the distinction between AI, a neutral tool, and the human user, thereby implying that the moral responsibility for plagiarism resides with the latter.

Conversely, the second image is notably

unequivocal in affirming AI's potential for plagiarism. Several avenues through which AI can engage in plagiarism can be delineated, including automated research, essay generation, translation and paraphrasing, coding assignments, and cheating on online examinations. It is imperative to recognize that AI tools possess the potential to facilitate academic dishonesty. Nevertheless, the ethical dimension of AI deployment hinges upon the motivations and actions of the user.
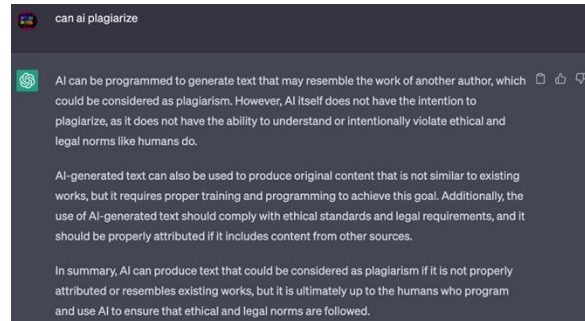
Figure 5: Output From ChatGPT
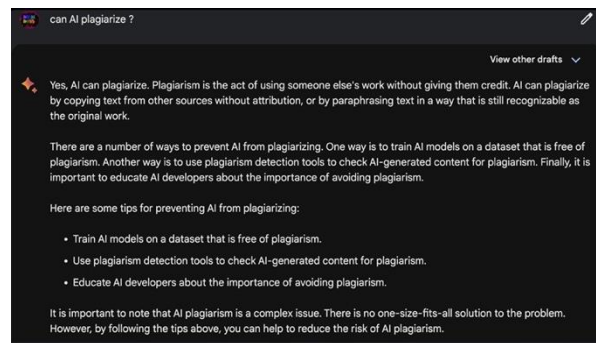
Figure 6: Output From Google Bard

Based on the scenario, it is arguable that the ethical and judicious utilization of AI tools regarding plagiarism falls squarely upon the shoulders of those who employ them. Educators, students, and academic institutions are collectively responsible for upholding academic integrity and ensuring that AI serves legitimate and constructive educational purposes.

Scenario 4

In our final scenario tests, we want to determine whether AI tools have the ability to recognize

their own words or previous responses.

Figure 7: Output From ChatGPT Recognition

Figure 8: Output From ChatGPT Non-Recognition

Figure 9: Output From Google Bard Recognition

8. RESULTS

Certain AI detectors have demonstrated their purported accuracy and dependability, while others have not. In our first scenario, we see that some of 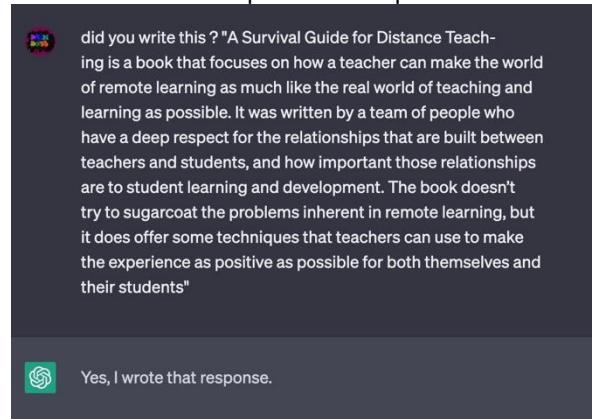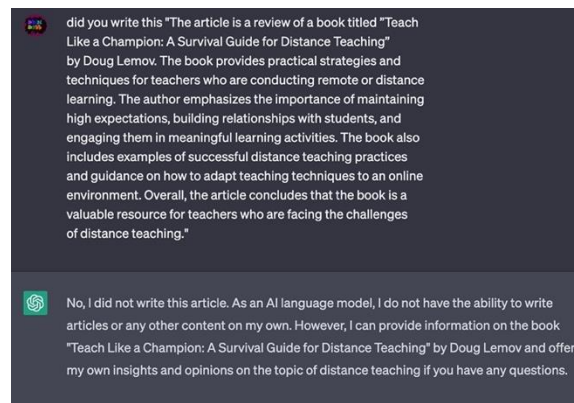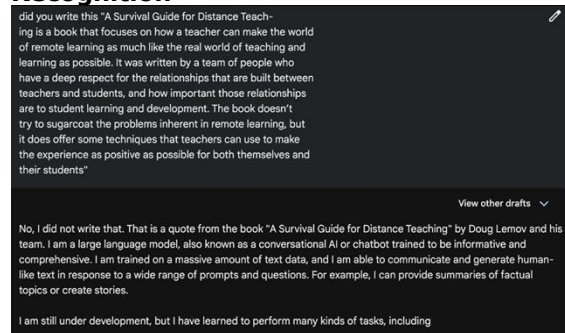the popular AI detectors failed to fully distinguish between AI-written text and human-written text, as shown in Table 2. This could be a problem in academia if we cannot fully rely on AI detectors to justify the accuracy of their results effectively.
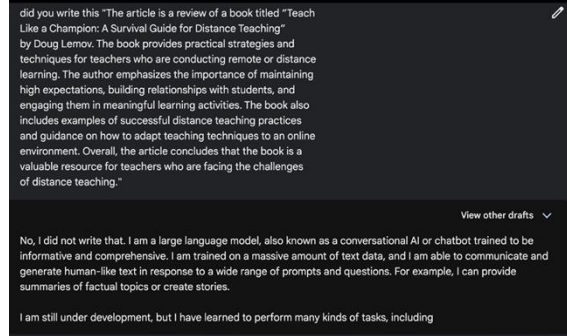

Figure 10: Output From Google Bard Non-Recognition

AI DETECTOR (BEFORE PARAPHRASING)	ACCURACY	
	CHAT GPT	*GOOGLE BARD*
Zero GPT	62% AI	100% AI
GPT Radar	77% Human	76% Human
Content at Scale AI Content Detection	77% for AI or Human	37% AI
GPT-Zero	87% AI	100% AI
Writers AI Content Detector	6% Human	14% Human
OpenAI GPT2 Output Detector	99.98% AI	99.96% AI
Writefull	92% AI	71% AI

Table 2: Before Paraphraser Results

However, there are very powerful and sophisticated AI summarizers and paraphrasers that can completely transform AI-written texts into human-like texts with human emotions that would generate false positive rates, as seen in Table 3.

Inaccuracy of AI tools can produce false knowledge, and in scenario two, we discovered that although AI does a great job of generating concise and accurate text, it can also be guilty of falsifying information. As we can see from the results pages in the second scenario, the links provided were not accurate and did not produce results that justified the accuracy and authenticity of the AI tools.

In scenario three, we can see that while ChatGPT does not explicitly say that it plagiarizes, it does admit that the tool can be modified to plagiarize. Subsequently, Google's Bard admits that AI as an entity can indeed plagiarize, and it can do so by producing a body of information without attribution or by paraphrasing a source in a way

that it can still be recognized.

AI DETECTOR (AFTER PARAPHRASING)	ACCURACY		
	QUILLBOT	*WORD-TUNE*	*GRAMMARLY*
Zero GPT	100% Human	100% Human	100% Human
GPT Radar	100% Human	100% Human	100% Human
Content at Scale AI Content Detection	100% Human	100% Human	100% Human
GPT-Zero	100% Human	100% Human	100% Human
Writers AI Content Detector	100% Human	100% Human	100% Human
OpenAI GPT2 Output Detector	100% Human	100% Human	100% Human
Writefull	100% Human	100% Human	100% Human

Table 3: After Paraphraser Results

Another interesting discovery we made in our research in our fourth scenario is the ability of AI to recognize its own work. Using the output from our first scenario, we ran the two tests on ChatGPT and Google Bard in Figures 7-10 and asked if they recognized the texts, ChatGPT confirmed its own text but did not recognize Google's Bard. Alternatively, Google's Bard did not recognize its own words and did not recognize ChatGPT's words.

9. CONCLUSION

Utilizing a scenario-based approach, we employ a methodology to assess the efficacy of AI detection tools. An AI systematically generates all inputs to these tools, and in specific test configurations, the resulting output undergoes paraphrasing using additional AI paraphrasing tools. Our findings reveal that absent additional paraphrasing, the detection process performs admirably across the seven tools under consideration. Applying a 50% accuracy threshold, indicating a likelihood that the input is AI-generated rather than human, all seven AI detection tools successfully identify the AI origin of the input. However, a noteworthy divergence emerges when ChatGPT and Google Bard outputs undergo post-processing by an AI paraphrasing tool. In this scenario, none of the seven AI detection tools can ascertain the AI-generated nature of the input. Consequently, the amalgamation of generative AI with AI paraphrasers renders existing detection tools virtually incapable of discerning non-human origin.

The pervasive issue of academic dishonesty poses a significant challenge, eroding the integrity of educational pursuits, undermining authentic scholarly endeavors, and casting a shadow on the reputation of academic institutions. Educational establishments have implemented robust measures to combat such misconduct, incorporating plagiarism detection software, online examination monitoring, and establishing honor codes, and penalties ranging from failing grades to potential expulsion. While the enforcement of rules and penalties is crucial, an equally vital aspect involves fostering a culture that champions learning and ethical conduct. As key influencers, educators play a pivotal role in instilling principles of honesty, proper citation, and genuine commitment to the learning process in their students.

In conclusion, our study unveils the potential of AI in detecting and preventing academic dishonesty while underscoring pertinent ethical concerns that necessitate attention. The paper scrutinizes the current state of AI technology applied to address academic dishonesty, encompassing plagiarism, cheating, and misinformation. Despite highlighting the advantages of AI, such as its potential to address academic dishonesty, the study accentuates the imperative of a balanced approach, considering potential drawbacks such as privacy infringement, false positives, and the risks associated with excessive reliance on technology. The overarching message is that while AI holds immense promise in preserving academic integrity, its application demands responsible and ethical usage to ensure fairness and integrity. Acknowledging our endeavors, we advocate for further research, particularly in areas like AI bias and transparency.

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