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Exploring the ethical considerations of using Chat GPT in university education

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ABSTRACT

This study investigates the moral dilemmas that arise with incorporating Chat GPT into higher education, with a focus on the situation in Latinoamerican institutions of higher learning. The study surveyed 220 people via online questionnaire to learn more about their experiences with and motivations for using AI-powered conversational agents. An overview of the demographics of the participants was provided through descriptive statistics. This investigation of the subject at hand lays the groundwork for further research. It also reveals the hidden meanings of the observed phenomena, and it suggests possible solutions to the problems that have been uncovered. This research looks at how AI systems and chatbots can supplement human knowledge and judgment, as well as their potential drawbacks. The results showed that participants thought Chat GPT integration was moderately accessible and had moderately positive social attitudes. They understood the value and responsibility of Chat GPT in creating individualized educational opportunities. Participants stressed the necessity for explicit institutional standards regarding privacy and data security. Gender, age, sense of accessibility, social attitude, opinions, and personal experience, privacy and data security, institutional guidelines, and individualized learning were also found to affect participants' reliance on AI through regression analysis. The findings shed light on how the integration of Chat GPT into Latinoamerican higher education is complicated by factors such as individual beliefs, cultural norms, and ethical problems. The busy schedules of students may be accommodated and the resources they need to succeed can be made available thanks to this adaptability. In addition, natural language processing models can offer students instantaneous help via text chat, voice, or video. To fully grasp the ethical consequences and lead the creation of responsible implementation techniques, the research proposes that additional qualitative investigations, longitudinal studies, and comparative research across diverse contexts is required. Closing these knowledge gaps will help move the conversational AI field forward in ways that are ethical and beneficial to the classroom.

Keywords: Chat GPT, University, Education, Open AI, Natural Language Processing

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1. Introduction

Chat GPT, or (Generative Pre-trained Transformer 3), was created by OpenAI and is a cutting-edge NLP system. Its capacity to generate text that sounds natural to humans makes it suitable for use in chatbots and other conversational interfaces. In recent years, there has been a lot of discussion on how to use artificial intelligence (AI) systems and chatbots in the classroom. Feedback, inquiries, and help can all be simulated in a discussion with the student for optimal effectiveness [1]. It could help students feel more invested in their learning and maintain interest in the course topic. There are several obstacles that must be overcome to rapidly deploy NLP models like OpenAI's Chat GPT or Google's Bard [2, 3]. My goal is to promote the conversation on natural language processing (NLP) in higher education by discussing its many benefits and pitfalls, and by ending with implications that (hopefully) point out research gaps, inspire new studies, and propel the field forward [4]. By automating mundane and repetitive processes, aiding in data analysis, and enabling new kinds of learning and evaluation, AI technologies have the potential to revolutionize the way research and education are conducted. There are, however, some difficulties and debates associated with using AI in the classroom.

Chat GPT, a robust language model, has received a lot of interest as a possible way to improve the educational experience for college students. The evolution of AI, particularly considering one of the numerous examples of its applications on the Internet like ChatGPT, can be seen both as a promising new avenue for growth and a potential source of danger for the field of education. There is mounting evidence that ChatGPT can help students succeed in certain types of written university exams. ChatGPT may generate summaries of books, studies, and other literature, as well as write creative essays for students. As a result, ChatGPT poses a serious problem for schools everywhere. The potential for this tool to be used for the automated process of generating the texts of theses with which students will pass their subjects as part of their course of study and for generating the texts of theses 'authored' by students as part of their final theses is an especially relevant topic. The possible lack of emphasis on providing sufficient evidence of source publications in academic papers and theses is a serious problem [5]. Students can interact with a conversational bot powered by artificial intelligence to ask questions, get clarifications, and get tailored responses [6]. While there is much to be gained from implementing Chat GPT in higher education, there are also serious ethical questions that must be addressed. This research examines the ethical implications of implementing Chat GPT in university education. The study also explores issues such as privacy concerns, data security, bias in AI-generated responses, and the responsibility of educators in overseeing and guiding the use of Chat GPT in academic settings.

2. Literature review

2.1. Emergence of AI in education

Although research into Natural Language Processing (NLP) models began in the 1950s [7], it wasn't until the 2010s that they received serious attention and progress, thanks in large part to the advent of deep learning techniques and massive datasets ([5, 6, 7]. However, there are also worries and difficulties associated with implementing AI in the classroom. One major worry is that AI systems may just serve to reinforce discrimination and bias in academic settings. It is also possible that AI systems could be abused or exploited to generate biased or erroneous outcomes. By the close of 2022, a novel artificial intelligence system by the name of ChatGPT had appeared on the scene. It's a type of language-based AI system that belongs to the transformer class of AI tools. An example of a series of data that can be processed and generated by a transformer is text [8, 9]. ChatGPT is a chatbot that has been trained on an enormous online text dataset to produce natural-sounding responses to a wide variety of questions and prompts ([10, 11].

It is becoming increasingly clear that natural language processing (NLP) models can have a significant impact on higher education, with the potential to facilitate individualized learning, on-demand support, and other novel methods to instruction [12, 13]. When it comes to helping students learn in higher education, NLP models are extremely useful. Textual data such as academic papers, textbooks, and other course materials can be analyzed and processed using these models, allowing instructors to provide students individualized recommendations for additional study based on their unique needs and interests. The academic world is not immune to the spread of artificial intelligence (AI) and chatbots [14], which have made tremendous strides in recent years. AI systems and chatbots are starting to be considered as a significant tool for researchers and academics due to the rise of big data and the necessity for effective and rapid data processing. Recent studies have acknowledged that not much effort has been made to investigate the use of AI in education [15, 16]. Furthermore, natural language

processing models can be utilized to create chatbots and virtual assistants that provide on-demand support and guidance to students.

Two natural language processing (NLP) models with the potential to revolutionize higher education are Chat GPT by OpenAI and Bard (Google's reaction to Chat GPT) [16]. Chat GPT and Google Bard are examples of generative language models that can generate natural-sounding answers to questions, statements, and academic-themed prompts. Artificial conversational agents, or chatbots, mimic human speech using machine learning and natural language processing. But there are ethical concerns that need to be addressed because of the growing usage of AI and chatbots in these areas. This literature study sets out to investigate the major ethical concerns raised by the widespread adoption of AI and chatbots in academic settings. Chat GPT and Google Bard's recent availability and growing popularity (in early 2023) make their utilization particularly essential for bolstering student learning in a variety of situations, including language acquisition, composition, research, and general scholastic inquiry. The authors also discovered that chatbots can boost student interest and enthusiasm for schoolwork. Another study by Neven (2013) looked on the feasibility of implementing chatbots in universities. Using chatbots in the first year of college has been shown to improve students' academic engagement and make the adjustment to college life easier for new students. The research indicated that interacting with chatbots improved students' study habits and social interactions. Students felt more comfortable reaching out to their program leader and receiving assistance thanks to the chatbot. Thus, beyond the examples, NLP models are being used in higher education, with new applications being developed to help students in their studies [17, 18].

2.2. Opportunities for higher education and ethical consideration

The literature emphasizes the institutional, pedagogical, and ethical duties involved in implementing Chat GPT. To make sure that AI is being used in a responsible manner in classrooms, there has been a push for more open regulations and procedures [19]. Multiple stakeholders, including students, should be included in the decision-making process, according to the literature. Personalized learning is a method of teaching that emphasizes the need of adapting lessons to each student's specific background, interests, and skill level [20]. This is because ChatGPT does not publish a comprehensive list of the scientific publications, journal articles, books, etc., from which it has used, received inspiration, taken data, etc. In addition, the limited capabilities of anti-plagiarism programs to verify the issue of verifying the reliable use of sources, other publications, and source materials by a student while writing a diploma thesis, be it a bachelor's, master's, doctoral, or habilitation thesis, presents a significant challenge for higher education. Therefore, it is important to enhance digital resources and anti-plagiarism software to the point where they can authenticate the authorship of a student's thesis [21, 22, 23].

By assessing a learner's language patterns, feedback, and performance, NLP models can design individualized learning plans that incorporate subject matter, exercises, and evaluations that are optimal for that specific student. When it comes to boosting student success, personalized instruction can be invaluable (Rathore, 2023). According to [24, 25], personalized instruction has been found to boost student performance, interest, and confidence in their own abilities in the classroom. When students are given information that is tailored to their own interests and skill sets, they are more likely to actively participate in class and learn. With the use of natural language processing models, educators can give their students individualized lessons. The issues of proper use of publications and source materials are significant within the scope of the investigated reliability indicated above, proper usage, that is, without the use of plagiarism and with full indication of texts, publications, and source materials in footnotes. In this context, it is also important to modernize the processes by which supervisors, the research and teaching faculty who oversee a student's work on a diploma thesis, verify the work. The ethics of student research and diploma thesis writing, as well as the ethics of supervising such work by scientific and didactic staff, should be given special attention to the appropriate updating of procedures.

2.3. Challenges of AI in higher education

While natural language processing (NLP) models like Chat GPT and Google Bard have a lot of potential, they also face several obstacles (or ethical problems) that must be overcome. The problem of precision comes first. Data privacy and security has been identified as a major ethical concern in literature [26]. Concerns have been raised concerning the privacy and security of students' personal information as Chat GPT relies on massive volumes of data to generate responses. To protect student data and stop unwanted access, researchers stress the importance of strong privacy policies, data encryption, and informed consent processes. The training data's richness, variety, and complexity, as well as the students' own contribution, have a significant impact on the system's precision. The system may learn incorrect or incomplete patterns, resulting in incorrect replies, if the

training data is not diverse enough or of low quality. It is possible that the complexity of the input data, especially idiomatic terms, and other forms of linguistic nuance, can affect the accuracy of NP models [27].

The possibility for abuse and misuse of technology is another ethical factor to think about. The ability of Chat GPT to generate content that appears to have been written by a human being makes it vulnerable to abuse for objectives like disseminating disinformation or posing as another person. Preventing such abuse and holding individuals responsible for misusing the technology is why safeguards are necessary. As shown by Munir, Vogel & Jacobsson (2022), it's also possible that the students' input data quality will influence the model's accuracy [28]. It is also important to update the regulations defining the principles and standards of credible writing of credit and diploma theses by students, as well as the process of control and supervision of the issue of writing the diploma, in this context. This includes both the legal regulations functioning at the national level and within the scope of internal, functioning in individual universities and school regulatory normative provisions. It could be difficult for the system to provide a correct response if students do not submit input that is clear, concise, and relevant [29-32]. This is especially difficult when students are unsure of what information they require or when they lack the language skills necessary to ask questions in a way that the system can understand [33-34].

3. Materials and methods

This study utilized a cross-sectional research design to collect data on the ethical considerations of using Chat GPT in Latinoamerican universities. The main aim of this research is to explore the perspectives and opinions of university students regarding the integration of Chat GPT in their educational experiences. Thus, the major participants in this study were undergraduate students enrolled in various disciplines at Latinoamerican universities. The study sent out a total of 2000 questionnaire and 220 were answered therefore, this research used a sample size of 220 students, selected through random sampling. It included students from different academic levels and backgrounds to ensure a diverse representation.

Additionally, the questionnaires were developed and sent out electronically as the primary data collection instrument to various public university group which engages the students on various technological implication, challenges, and current trends in education system. The questionnaire consisted of a mix of closed-ended and open-ended questions to gather both quantitative and qualitative data. The questionnaire was designed to assess participants' opinions, attitudes, and concerns regarding the ethical considerations of using Chat GPT in university education.

To ensure ethical standards are met, the study obtained informed consent from all participants before they began responding to the questionnaire. The consent form provided a clear explanation of the study's purpose, the voluntary nature of participation, and the confidentiality and anonymity of the participants' responses. Participants were assured that their data would be used for research purposes only.

The online questionnaire was distributed using a secure and reliable online survey platform. And the participants received an invitation email containing a link to the questionnaire. They were given a specific timeframe within which to complete the questionnaire. Reminder emails were sent to encourage participation and increase response rates.

The collected data were analyzed using both quantitative methods. Descriptive statistics, such as frequencies and percentages, were used to analyze the closed-ended questions, providing an overview of participants' opinions on various ethical considerations.

4. Results and discussion

The results show that out of the 220 participants, 123 (55.9%) identified as male, while 97 (44.1%) identified as female. Regarding age distribution, the majority of participants fell within the age range of 18-24 years, with 59 participants (26.8%). The next most represented age group was 25-34 years, with 55 participants (25.0%), followed by 35-44 years with 53 participants (24.1%). The age groups of 45-54 years and above 55 years accounted for 34 (15.5%) and 19 (8.6%) participants, respectively (see figure 1 below). These demographic findings provide a snapshot of the gender distribution, age range, and educational background of the participants in the study. These demographics will be essential for analyzing the results in terms of how these variables may relate to the participants' attitudes, opinions, and perspectives on the ethical considerations of using Chat GPT in Latinoamerican universities.

Table 1. Gender distribution

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	M	123	55.9	55.9	55.9
	F	97	44.1	44.1	100.0
	Total	220	100.0	100.0	

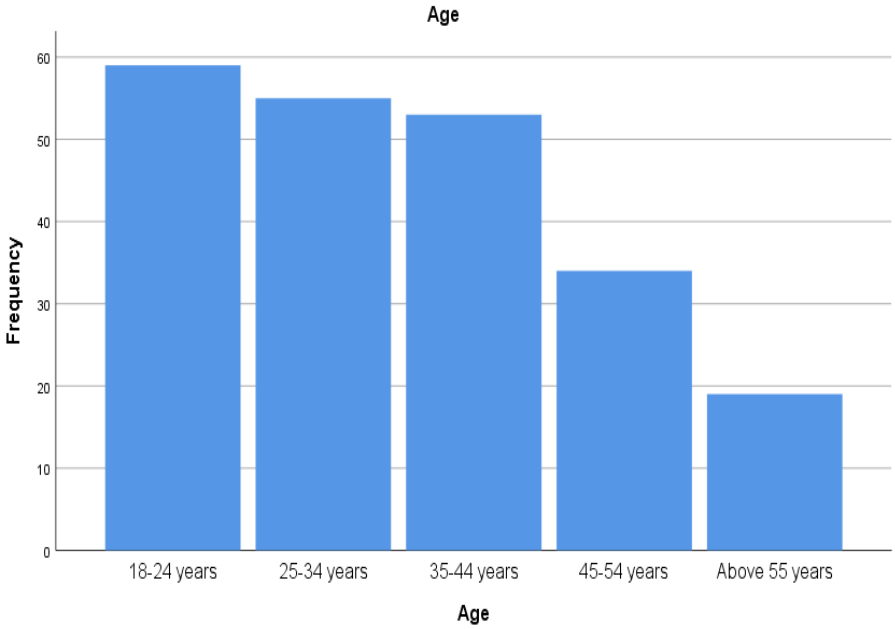

Figure 1. Age distribution

Regarding the participants' level of education, 58 participants (26.4%) reported having a high school diploma or below. The largest group consisted of participants with a bachelor's degree, with 63 participants (28.6%). Participants with a master's degree accounted for 45 (20.5%), and those with a doctoral degree accounted for 54 (24.5%).

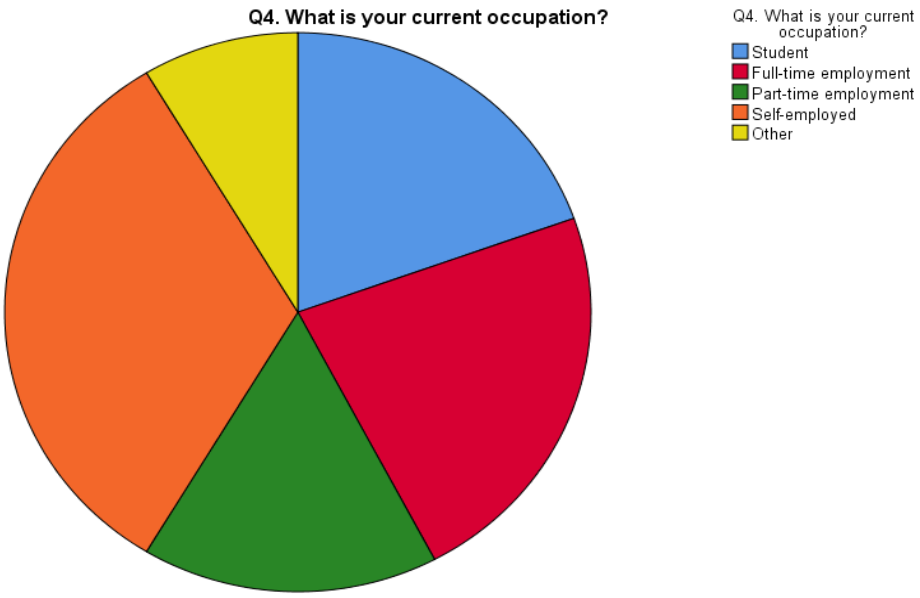

Figure 2. Occupation of the participants

4.1. Descriptive statistics

Table 2: Descriptive statistics

Descriptive Statistics					
	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Perception of Accessibility	220	1.00	4.00	2.5114	.67649
Social Attitude	220	1.00	4.00	2.4375	.67811
Opinions and personal experience	220	1.00	4.00	2.6841	.62499
Dependency on AI	220	1.00	4.00	2.6114	.72314
Privacy and Data Security	220	1.00	4.00	2.8455	.90680
Institutional Guidelines	220	1.00	4.00	2.8477	.66603
Personalized Learning	220	1.00	4.00	3.0273	.61130
Valid N (listwise)	220				

Descriptive statistics offer intriguing insights into how students at Latinoamerican colleges view the moral implications of using Chat GPT. The average score of 2.5114 indicates that the participants had a modest opinion on the ease of access. This indicates that they were on the fence on the claim that Chat GPT makes more educational materials available to more people. Similarly, the average societal attitude towards Chat GPT integration was 2.4375, suggesting a reasonably neutral stance. Creativity and the ability to develop new ideas are crucial to the advancement of scientific and academic research, but the chatbots lack these capabilities. Also, chatbot output is often meaningless or useless without human interpretation and judgment. Finally, there are ethical issues regarding the potential for chatbots to propagate harmful prejudices and discrimination, as well as the quality and dependability of the data acquired. The mean score of 2.6841 suggests that participants had a relatively favorable impression and experience with Chat GPT. This indicates that they were aware of the possible advantages and moral considerations associated with implementing Chat GPT in the classroom.

The mean score of 2.8477 reflects the participants' agreement that institutions should have clear norms and guidelines controlling the moral use of Chat GPT. This indicates that they were aware of the importance of ethical monitoring and responsibility reporting during the rollout of Chat GPT at their school. Machines may demonstrate greater capacities for data analysis, experience, and expertise than humans, and this may lead to a greater degree of invention and creativity on their part. However, human research assistants may demonstrate more awareness of and sensitivity to context and complexity. In addition, with a mean score of 3.0273, the participants had a favorable opinion of the individualized learning made possible by Chat GPT. This suggests that they appreciated the flexibility and instant feedback provided by Chat GPT, both of which contribute to individualized learning experiences.

Table 3. Regression result

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	Std. Error	Beta		
1	(Constant)	2.019	.405		4.986	.000
	Gender	-.026	.096	-.018	-.269	.001
	Age	.020	.037	-.036	-.543	.001
	Perception of Accessibility	.666	.071	.062	.940	.005
	Social Attitude	.710	.073	-.025	-.371	.001
	Opinions and personal experience	1.048	.085	-.042	-.571	.000
	Privacy and Data Security	1.939	.055	.299	4.324	.000

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	Std. Error	Beta		
	Institutional Guidelines	1.108	.080	.100	1.357	.000
	Personalized Learning	5.092	.082	-.078	-1.119	.000
a. Dependent Variable: Dependency on AI						

The results of the regression analysis provide insights into the factors influencing participants' dependency on AI-driven conversational agents in the context of Chat GPT integration in Latinoamerican universities. The model yielded a significant overall prediction of dependency on AI, as indicated by the constant term ($B = 2.019$, $p < .001$). Let's discuss the standardized coefficients (betas) for each independent variable. As shown in the table above, age also had a small negative relationship with dependency on AI (beta = -0.036, $p = .001$). This indicates that as participants' age increased, their dependency on AI-driven conversational agents decreased.

Social attitude exhibited a small negative relationship with dependency on AI (beta = -0.025, $p = .001$). This implies that participants with a more positive social attitude towards Chat GPT integration were less likely to be dependent on AI. Institutional guidelines had a small positive relationship with dependency on AI (beta = 0.100, $p < .001$). This implies that participants who perceived clear guidelines and policies for the ethical use of Chat GPT in their educational institution were more likely to be dependent on AI. Also, personalized learning showed a small negative relationship with dependency on AI (beta = -0.078, $p < .001$). This suggests that participants who recognized the potential benefits and ethical implications of personalized learning facilitated by Chat GPT were less likely to exhibit high levels of dependency on AI.

These findings provide light on what makes people so reliant on chatbots powered by artificial intelligence. Individuals' degrees of reliance on AI appear to be influenced by factors such as gender, age, impression of accessibility, social attitude, opinions and personal experience, privacy and data security, institutional norms, and tailored learning [35-56]. The results of chatbots can be used to make decisions that are harmful or disadvantageous to specific groups, and they can be used to manipulate or exploit individuals and communities. A common scenario involves consumers asking chatbots questions regarding political problems and receiving misleading answers. To overcome these obstacles, schools must instruct students on the proper use of NLP models in the classroom, such that they are used as a supplement to students' critical thinking and independent research.

Institutions also have a responsibility to guarantee that students have access to active learning activities that foster analytical thinking, problem solving, and self-directed learning. In the specific context of the Russian-Ukrainian conflict, for instance, developers and programmers could instruct chatbots to answer questions from the public in a way that serves their own political agendas (Ramos et al., 2022). The results shed light on the complicated interplay between personal beliefs, societal norms, and ethical concerns surrounding the implementation of Chat GPT in higher education.

5. Conclusion and future work

This research investigated the moral implications of implementing Chat GPT in Latinoamerican higher learning institutions. The results shed light on how people feel about and use conversational agents powered by artificial intelligence. Although the paper highlights the benefits of NLP models, it also points out some of the possible drawbacks, such as the loss of human interaction, prejudice, and ethical issues. Universities can help alleviate the problems identified by making sure that NLP models are utilized to augment human communication rather than replace it. To preserve student privacy and reduce bias, institutions should create standards and ethical frameworks for the usage of NLP models. Participants' views on Chat GPT integration's accessibility and social acceptability were found to be modest.

They understood the value and responsibility of Chat GPT in creating individualized educational opportunities. Participants stressed the necessity for explicit institutional standards regarding privacy and data security. Results showed that users' reliance on AI was affected by several elements, such as demographics (gender, age, perception of accessibility), societal attitudes, opinions, and experiences, privacy and data security, institutional

norms, and individualized education. Students' wants and preferences should be considered throughout the design and deployment of NLP models at institutions (Woolf et al., 2013; Zawacki-Richter et al., 2019). Finally, schools need to equip students with the tools they need to make good use of the models and train faculty to implement and adapt to the new technologies.

In conclusion, institutions of higher learning should weigh the pros and downsides of using NLP models, taking care to do so ethically and with a focus on augmenting student learning rather than replacing human interaction. These results shed light on the complicated interplay between private beliefs, public opinion, and ethical concerns surrounding the introduction of Chat GPT to Latinoamerican higher education. Academic use of AI systems and chatbots is expected to rise in the next years, as this report acknowledges their considerable potential benefits. To fully achieve the potential of AI in research and education, however, researchers and educators must first critically analyze the ethical and technical implications of AI systems and guarantee that they are used in a responsible and transparent manner. The research itself lays a solid groundwork for future investigations into the potential applications of AI systems and chatbots in the academy and their effects on learning and teaching.

5.1. Limitations of the study

This study had some limitations and therefore it is important to address and the most important ones. For example, the study was limited to the university setting in Peru, which may make the results less applicable to other countries and cultures. In addition, the data used in the study came from a self-reported online questionnaire, which could have resulted in response biases or social desirability effects. The findings may perhaps not be generalizable because of the small sample size of 220 people. In addition, the research didn't do any serious qualitative analysis or look at how Chat GPT was utilized in classrooms; rather, it just explored the participants' perceptions. It's inevitable that chatbots will alter the research techniques used in the academic world. It is unrealistic to think that we can avoid or completely shut off AI from our daily lives. Our educational institutions must change to accommodate the disruptive new AI systems and chatbots producing counterproductive research.

5.2. Suggestion for further research

Several lines of inquiry might be pursued to better understand the moral implications of incorporating Chat GPT into higher education. To begin, qualitative research methods, such as interviews or focus groups, can yield richer understandings of the experiences, issues, and perspectives of the study's participants. The long-term effects of incorporating Chat GPT into classroom practice and student outcomes could also be investigated in a longitudinal study. Furthermore, exploring the viewpoints of teachers and school leaders could provide a holistic picture of the ethical difficulties and opportunities related to using Chat GPT.

Exploratory investigations pave the way for more rigorous research by providing a basis for creating hypotheses and research topics that may be tested with statistically significant findings. In general, conducting exploratory research is a useful method for learning about novel phenomena and generating new study topics and hypotheses. Ethical considerations and any variances in perception could be better understood with the use of comparative research across different countries or cultural situations. Finally, practical insights for building responsible and effective integration methods can be gained by investigating the actual implementation processes and analyzing the efficiency of ethical principles and policies in educational institutions.

Declaration of competing interest

The authors declare that they have no any known financial or non-financial competing interests in any material discussed in this paper.

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