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Chatgpt in Higher Education Malaysia: An Opportunity or Threat to The Education System?

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Abstract

The emergence of sophisticated machine learning models like ChatGPT has brought about notable progress in several fields, including education. ChatGPT, a Generative Pre-trained Transformer, has become popular among university students worldwide. This study aims to investigate the impact of ChatGPT on Malaysian higher education. The goal of this essay is to assess whether ChatGPT is an opportunity or a threat to the education system, particularly in terms of quality, for students, educators, and institutions. This study utilized a critical literature review methodology. The data suggested that ChatGPT could pose a danger to the quality of the education system, despite its undeniable benefits. Privacy, academic integrity, bias, and quality are potential threats. The report emphasizes the significance of the Ministry of Higher Education Malaysia (MOHE) in overseeing the utilization of ChatGPT and offers recommendations for educators and policymakers.

Keywords: ChatGPT, Higher Education Institution, Opportunity, Threat, Quality Education, Education Monitoring

Introduction

Personalised learning and more effective teaching approaches have been made possible via the implementation of artificial intelligence (AI) in educational settings. The artificial intelligence language model known as ChatGPT, which was developed by OpenAI, is gaining popularity as an advanced AI language model in contemporary educational settings due to its excellent quality. With the advancements that have been made in Artificial Intelligence (AI), there has been a heightened interest in researching the potential applications and implications of AI in various areas of study. After being made available to the public in November 2022, OpenAI's Chat GPT garnered one million users in just five days, demonstrating its rapid rise to popularity. According to Biswas (2023); Fırat (2023), Facebook took around 300 days to achieve the same milestone, while Twitter took 720 days and Instagram took 75 days to reach the same milestone. The topic of education is one that is heavily discussed in these conversations. Growing interest in AI's potential to improve education is due to its fast breakthroughs. AI is transforming many industries, including education. ChatGPT, a strong AI language model, can produce innovative text forms, answer

complicated queries, and converse interactively. This unique talent might transform student learning and teacher instruction.

While there are others who feel that the inventive use of Chat GPT will bring about substantial changes in a variety of domains, including as education, there are also those who are concerned about the ethical difficulties that it may offer, since they view it as a technology that has the potential to bring about disruption. According to Baidoo Anu and Owusu Ansah (2023), educators have expressed a variety of perspectives on the capability of Chat GPT to handle complex tasks in the realm of education ever since it was made available to the public. A significant transformation is taking place in the field of education because of the use of artificial intelligence (AI). It is anticipated that this modification will influence educational goals, processes, instructional materials, pedagogical techniques, assessment methodologies, and, ultimately, the overall learning outcomes in a logical manner.

ChatGPT in educational environments can aid in creating evaluations, generating essays, and translating languages. Additionally, it allows users to ask and answer questions, summarize literature, and engage with it as if interacting with peers (Sok, 2023). Baidoo-Anu and Ansah (2023) argued that this model can exhibit originality in writing across various topics, ranging from a brief paragraph to a whole research piece that is perceived as persuasive or nearly persuasive. Atlas (2023) suggested that tertiary education might considerably benefit from utilizing ChatGPT and other language models in several areas such as writing assistance, language learning, research, and administrative tasks. Therefore, it can be contended that ChatGPT has the potential to serve as a valuable instrument for education and research. Despite its popularity, ChatGPT's usefulness in varied educational settings is seldom researched. Some pros and cons are highlighted, but its exact influence on learning outcomes and problems is unknown. This study examines ChatGPT's effectiveness across disciplines, its potential to improve teaching and learning, and its potential downsides to fill this essential knowledge gap. This research will help educators and institutions use ChatGPT's capabilities and minimise its hazards by clarifying its function in education.

Although ChatGPT offers some potential educational benefits, numerous researchers have contended that it also comes with notable drawbacks (Baidoo-Anu & Ansah, 2023; Cotton et al., 2023; Gordijn & Have, 2023). In a study conducted by Mogali (2023), it was discovered that ChatGPT did not consistently provide accurate information when asked about anatomical facts in its present version during an initial examination. Hence, it is evident that the presence of this prominent AI tool has advantages and constraints.

This essay intends to examine the advantages and disadvantages of utilizing ChatGPT in teaching and research based on secondary sources. The text outlines the advantages of using ChatGPT and then discusses the possible concerns associated with its early implementation. The article concludes with suggestions on how to utilize ChatGPT efficiently for educational and research purposes. Examining the research findings on ChatGPT is essential to assess its actual performance in many subject areas.

Therefore, the review will be guided by the following research questions (RQ1 to RQ3).
RQ1: What is the performance of ChatGPT across various subject domains?
RQ2: How can ChatGPT improve the quality of teaching and learning?
RQ3: What are the possible drawbacks of ChatGPT and how may they be resolved?

Background

ChatGPT's use in education has attracted much attention for its ability to improve students' learning experience. This technology provides prompt and tailored responses to meet the specific needs of each student, offering instant feedback and assisting in understanding intricate ideas. It is a promising tool that fosters active student participation and cognitive development by adjusting to their learning speed and providing ongoing help in their information acquisition. Moreover, ChatGPT has demonstrated its value in enhancing students' writing abilities. Students can obtain grammar corrections, improvement ideas, and thorough feedback on their work by interacting with the system, helping them enhance their written communication skills and achieve more effective expression.

It is important to acknowledge that this program is a useful tool for scientific writing but should not be considered a comprehensive solution for creating scientific material. Writers should utilize their expertise and background to verify and enhance the material generated by the program. ChatGPT is particularly adept at supporting group conversations and boosting collaborative student participation in projects and assignments. It helps create a feeling of community among learners by encouraging interaction and the sharing of ideas.

Many researchers have investigated the possible influence of artificial intelligence in education, namely utilizing the popular ChatGPT application for students. AI has been explored in education for personalized learning, adaptive assessment, predictive analytics, and chatbots. The results demonstrate the remarkable capacity of AI to improve learning effectiveness and provide tailored educational assistance to students and teachers. It is important to consider the hazards and limits of these technologies, such as data privacy issues, cultural differences, language skills, and ethical problems. Over the last year, ChatGPT has sparked increasing interest in the education sector. This tool is a disruptive technology that is altering the way students are taught, promoted, and supported in academic settings.

What is ChatGPT?

ChatGPT is a big language model, as described by Thorp (2023). Large language models are AI systems that utilize deep learning methods to analyze and produce text (Shen et al., 2023). ChatGPT is a sophisticated language model designed to produce text that mimics human-like language in natural language processing tasks (Shen et al., 2023). The system is created to produce text that resembles human writing by utilizing a vast collection of text data. It is trained to execute different language-related tasks like responding to inquiries, crafting narratives, coding, and creating essays. ChatGPT is built on GPT-3, the third iteration of a model designed for Natural Language Processing (NLP) tasks, which has been recently enhanced to GPT-4.

AI's ability to mimic human behavior and writing styles is impressive, making it challenging to distinguish between content created by machines and humans. Abdullah et al (2022) state that advancements in machine learning and data processing have led to the

continual growth and evolution of technologies, which consistently establish new benchmarks for AI. Currently, it is easy to come across literature generated solely by artificial intelligence, with ChatGPT serving as a prominent illustration of this trend. The 2022 natural language processing model proposed by OpenAI is designed for open-ended discussions and can be used to support conversational AI applications like chatbots and virtual assistants (OpenAI, 2022). However, its use in education has started to thrive, with students worldwide utilizing this technology to aid in their academic assignments. This converts ChatGPT into an auxiliary tool that assists users in completing tasks like research and data comparison more efficiently.

Application of ChatGPT in Higher Education

ChatGPT's application in education has sparked significant interest because of its ability to enhance students' learning experience. This method can address specific student needs, deliver fast feedback, and improve the understanding of complicated topics by offering quick and individualized responses. This technology shows promise in enhancing a student's engagement and cognitive development by adjusting to their learning speed and providing ongoing assistance in their acquisition of knowledge (Sanchez & Uso, 2023).

Its impact in the past year has generated a rising curiosity in schooling. This tool is a disruptive technology that is revolutionizing the way students are taught, promoted, and supported in academic institutions. Educational institutions are reconsidering how to integrate this technology into their teaching models to enhance the educational process for teachers and students (Penalvo & La). Teachers should incorporate this tool in the classroom and introduce it as a supplementary resource that enhances the learning process. It is important to note that this tool does not substitute the cognitive processes required for learning or other sources of information like books, articles, or interactions with others.

Application of ChatGPT in Higher Education in Malaysia.

Malaysia’s Minister of Higher Education, Khaled Nordin, revealed that the Ministry is developing rules for the implementation of OpenAI’s ChatGPT in local higher education institutions. Nordin recognized the potential advantages of ChatGPT and other artificial intelligence (AI) technologies when used as instruments in the educational process, as reported by Free Malaysia (Helmold, 2023).

The current utilization of ChatGPT at educational institutions in Malaysia is not well-defined. In January, Nordin presented a white paper named "A New Horizon for Science, Technology, and Innovation." Developing a strategy for Malaysia to equip the Ministry for handling technological advancements in education. The white paper intends to evaluate the impacts and approaches of the Ministry in managing different technology disruptions in higher education institutions regarding teaching, learning, and governance (Helmold, 2023).

Malaysian students tend to see the use of ChatGPT in school positively (Elkhodr et al, 2023). They see ChatGPT as a useful tool for offering prompt feedback, addressing inquiries, and helping. It is considered a valuable tool for English teachers to enhance the design and preparation of their teaching materials, therefore increasing effectiveness and efficiency (Lou, 2023). High school students in Malaysia use ChatGPT for academic support and personal management, and they are optimistic about its future impact on their life. Nevertheless, there

are apprehensions regarding the precision of data offered by ChatGPT and the possible diminishment of personal engagement with educators. Privacy and data security are key considerations. ChatGPT is generally seen as advantageous in Malaysia, however certain issues require attention.

Methodology

Research Design

This article's methodology relied on a critical literature review approach. The critical literature review entails examining and combining current literature on a certain topic to pinpoint main themes, topics, and disputes (Saunders et al., 2019). The literature review utilized electronic resources including Harvard University-affiliated newspapers, Reliable Newspapers, Google Scholar, Springer, and Scopus. The search terms employed were "ChatGPT in higher education," "impact of ChatGPT in education," and "ChatGPT in teaching and learning." The inclusion criteria specified papers published from 2019 to 2023. There is a lack of research on the use of ChatGPT in education, making it a relatively new area of study.

This study only analyzed the influence of ChatGPT usage in education, addressing the deficiency in prior research on the topic. The goal was to acquire a thorough awareness of the potential advantages and obstacles within the field. It is essential to thoroughly examine the ramifications of ChatGPT as AI and machine learning technologies become more integrated in education. Discussing this topic will enable students and educators to fully utilize ChatGPT to transform education, while ensuring its integrity and effectiveness.

The systematic literature review (SLR) was carried out by searching for sources in journal databases including Scopus, ScienceDirect, ProQuest, IEEE Xplore, and ACM Digital Library. This SLR has provided insights into how various authors utilize the ChatGPT application in education and its effects on the sector. The systematic literature review (SLR) utilized keywords, search filters, and criteria to narrow down specific findings, allowing for a thorough investigation of the topic matter as suggested by (Nightingale, 2009).

Search Strategy

The chosen databases were Web of Science, Scopus, and Google Scholar. Search query was used in three international education databases to look for matches in the title, abstract, and/or keywords. The literature search was carried out from May to June 2023, resulting in the initial identification of 154 records.

After removing duplicate studies (n = 73), certain criteria were set to guarantee that the chosen research were pertinent and aligned with the review's goals. Two reviewers separately applied these criteria to ensure objectivity and minimize prejudice in selecting studies. The search was restricted to publications published from 2022 onwards, coinciding with the launch year of the artificial intelligence chatbot built by OpenIA.
154 records were found in the three electronic databases examined. After eliminating duplicate entries (n = 73), papers were evaluated based on their titles and abstracts to determine eligibility (n = 81). 67 studies were excluded for not meeting the specified inclusion and exclusion criteria. Afterward, the 14 surviving research were evaluated for their methodological quality, resulting in the exclusion of 2 investigations. 12 studies met the criteria for inclusion in the review.

Findings and Discussion

Advantages of ChatGPT

The scientific literature review identified the main strengths of ChatGPT.

Creating believable responses

ChatGPT is a sophisticated language model that utilizes 'transformer architecture' for various natural language processing tasks such as phrase production and comprehension (Xue et al., 2023). This design enables AI-driven chatbots to analyze the connections between words in a sentence, maintaining context and producing responses that are logical and pertinent (Li et al., 2022). ChatGPT's exceptional performance is mainly due to its extensive training data, allowing it to grasp various linguistic patterns and correlations, resulting in a comprehensive comprehension of language and context. These characteristics enable ChatGPT to offer believable and apparently more trustworthy answers compared to other comparable AI technologies (Sobania et al., 2023).

Self-enhancement Capacity

ChatGPT possesses a distinctive attribute in its ability to enhance and learn autonomously. ChatGPT utilizes a sophisticated language processing technique known as generative pre-training (GPT), which sets it apart from other AI chatbots. GPT is an AI text generator that utilizes reinforcement learning based on human feedback to enhance its language model (Mann, 2023). ChatGPT can enhance and refine its responses by including feedback from human assessors (Shen et al., 2023). Furthermore, the continuous expansion of its training data enhances ChatGPT's ability to consistently enhance and update itself with new information, leading to increased accuracy over time (Rudolph et al., 2023).

Offering Customized Replies

ChatGPT can adapt its conversational abilities by learning from interactions with humans (Shen et al., 2023). ChatGPT could retain and integrate past talks into its replies. This enables it to preserve context and engage in more organic and logical dialogues with users consistently. ChatGPT has the capacity to offer personalized responses by leveraging extensive data training, allowing it to tailor its answers to the context of a specific prompt (Haque et al., 2022). ChatGPT may produce responses with varied tones and structures to suit the user's preferences and requirements (Aljanabi & ChatGPT, 2023). Users can generate distinctive texts through a feature that simulates a real conversation with the chatbot, which grows increasingly personalized with each contact.

Offering Immediate Replies

ChatGPT's processing performance is influenced by factors like query complexity and volume. Utilizing a sophisticated natural language processing model, ChatGPT can comprehend intricate queries and offer pertinent responses instantly (Deng & Lin, 2022). Research examining ChatGPT's suitability for academic writing found that it responded rapidly, generating 300–500 words of text in less than 2 minutes (Kumar, 2023). This feature can greatly streamline the information retrieval process by eliminating the need for users to manually search through various sources and search engines. In a fast-paced environment where timely and efficient decision-making is crucial, this capability can offer significant advantages.

Educational Opportunities

ChatGPT can offer tailored assistance and guidance to students at various levels of difficulty. We requested ChatGPT to provide feedback on an anonymous essay about 'Video Games for Children' in three different scenarios, focusing on constructive, affective, and critical features, within the context of argumentative essay writing, which is a crucial learning task for higher education students (Noroozi et al., 2012). ChatGPT delivered favourable and supportive comments when given a praising prompt but produced critical feedback when given a criticizing prompt. Teachers should choose question prompts thoughtfully to provide personalized feedback to students. If feedback is only critical and lacks positivity, students are less likely to accept it due to psychological and emotional factors (Latifi et al., 2021).

Enhancing Intricate Learning Processes

Prior research has shown that AI technologies have the capability to enhance the progress of intricate learning tasks like language acquisition and critical thinking. ChatGPT functions as an intelligent teaching system that offers personalized guidance and feedback to students on intricate tasks including academic writing skills Zhai (2022) and programming abilities (Biswas, 2023). ChatGPT has demonstrated the capacity to encourage critical thinking in students by prompting them to answer a series of questions that are customized to their individual skill level (Cotton et al., 2023). Due to its ability to function as a smart conversational tool, it can offer students important chances to enhance their argumentation abilities as a complex learning outcome through low-pressure exercises (Bayat et al., 2022). Students can choose a stance for the debate and request ChatGPT to argue the opposite side, allowing them to submit their arguments and have the chatbot counter them. Like other pre-trained language representation models, such as those discussed by Q. Jia et al. in 2021, ChatGPT can help students examine their peer evaluations, enabling them to enhance their feedback skills.

Reducing Teaching Responsibilities

ChatGPT can significantly reduce teachers' burden. For instance, it can serve as a feedback tool to provide feedback on students' tasks, essays, and assignments (Qadir, 2022). Teachers can request ChatGPT to generate several types of assessments, including open-ended questions, multiple-choice questions, and rubrics for grading students' assignments (Zhai, 2022). ChatGPT can automate the grading of assignments, particularly in courses that are text-based (Cotton et al., 2023). Furthermore, professors can efficiently offer students feedback on their essays within a brief timeframe (Mizumoto & Eguchi, 2023).

Limitations of ChatGPT

Although ChatGPT has merits, it also has certain limits and weaknesses outlined below.

Insufficient comprehension

ChatGPT has a limited comprehension of the semantics of the words it analyzes (J. Gao et al., 2023). It can identify patterns and produce believable responses, but it lacks a complete understanding of the underlying concepts of the phrases (Bogost, 2022). This could lead to shallow and superficial replies Borji (2023) and possibly irrelevant ones Gupta et al (2023), especially when dealing with activities that demand a detailed comprehension of specialized domain knowledge (Dimitrov, 2023). ChatGPT demonstrated proficiency in generating satisfactory solutions to intricate issues in Pathology in an empirical investigation.

Nevertheless, its responses were shown to lack a profound comprehension of the theoretical principles (Sinha et al., 2023). Having a procedure in place can assist in achieving a deeper and more nuanced understanding, mitigating the impact of this deficiency. Without this approach, utilizing ChatGPT may result in a form of intellectual simplification for the consumers.

Challenges in Assessing the Responses' Quality

ChatGPT does not possess the human capacity to evaluate the trustworthiness of the data it was trained on (Lecler et al., 2023). This limitation hinders its capacity to assess the accuracy of the produced material, save for topics with a significant consensus, like the 'flat-earth idea'. ChatGPT is not connected to the Internet and contains restricted information about global events post-2021. As knowledge advances, this constraint might lead to the delivery of obsolete and incorrect answers. ChatGPT might generate seemingly credible but fake references when asked to provide current sources (Choi et al., 2023).

The Potential for Prejudices and Discrimination

ChatGPT has the potential to maintain biases and discrimination, as noted by (Zhai, 2022). Reasons for this include biases in training data, algorithmic design, and sociocultural environment. AI algorithms can perpetuate biases by using massive data that reflects those biases, in accordance with the 'garbage-in-garbage-out' principle (Barocas & Selbst, 2016). Amazon had to stop using its AI recruiting tool in 2018 since it was found to be biased against women due to being trained on mostly male resumes. AI systems may perpetuate discrimination by prioritizing goals such as money and efficiency, thereby reinforcing existing biases without accounting for unintended repercussions.

Deficiency in Advanced Cognitive Abilities

ChatGPT is proficient in supporting the creation of intricate learning results, but it lacks proficiency in handling content that demands advanced cognitive abilities like critical and analytical thinking (Rudolph et al., 2023). This is mostly due to the significant reliance of AI tools on data that lack profound comprehension of context, common sense, and emotions, which are essential for advanced cognitive processes. The tool's capacity to create advanced critical thinking questions is restricted due to the need for a more profound comprehension of the subject matter (Sun & Hoelscher, 2023).

Challenges to Education

ChatGPT's benefits offer educational opportunities, while its flaws present specific threats outlined below:

Contextual Misunderstanding

Inadequate comprehension of context and the genuine significance of words can provide numerous problems, particularly in the field of education. ChatGPT, when utilized for personalized learning, may lack a comprehensive grasp of the curriculum, individual student learning styles, and the cultural background of students. This can lead to content suggestions that are either too challenging or too simple for students. Another instance involves utilizing ChatGPT for essay assessment, which could lack the necessary context and background information to grade an essay well.

Jeopardizing Academic Integrity

ChatGPT's introduction has sparked worries around online assessment security and cheating in online tests (Garg & Goel, 2022). ChatGPT has demonstrated the ability to produce text that resembles human writing, raising concerns about its potential to compromise the authenticity of online assessments, particularly in higher education contexts where these exams are becoming common (Susnjak, 2022). Research indicates that ChatGPT can effectively answer test questions in the medical and law sectors (Kung et al., 2022; Choi et al., 2023). Fijačko et al (2023) shown in an empirical study that ChatGPT's responses to life support examinations at a university were generally relevant, precise, and more closely aligned with resuscitation recommendations compared to earlier studies utilizing different AI technologies. ChatGPT poses a significant risk to academic integrity, particularly in higher education, due to its high-performance capabilities (Cotton et al., 2023).

Perpetuating Educational Discrimination

There are worries regarding the potential for perpetuating discrimination and displaying biases in schooling facilitated by ChatGPT. Kasneci et al (2023) stated that skewed training data can result in unfair discrimination against diverse communities. If AI is trained on data from Western European students, it may not be effective or suitable for usage with other groups from different regions of the world (Pedro et al., 2019). Zhuo et al (2023) found that ChatGPT outperforms other AI technologies but still exhibits ethical hazards by reinforcing social preconceptions and unfair discrimination. In a study involving three experienced university teachers that utilized ChatGPT for a whole week, the teachers noted that ChatGPT is susceptible to errors, including the introduction of bias (Tlili et al., 2023).

Plagiarism Becoming more Widespread in Education and Research

ChatGPT has generated ethical concerns related to promoting plagiarism and cheating, as well as being susceptible to errors such providing false information. OpenAI states that ChatGPT's replies are not direct replicas of any text but are instead created by combining the information from the training data. However, the model has the capability to generate responses that closely resemble those from existent sources. A recent test showed that ChatGPT created a 500-word article with a 45% resemblance to current sources (Plagexpert, 2023). Mike Sharples cautions that GPT enables plagiarism, as reported by Welle in 2023. Students could use ChatGPT for its enticing features without being aware that it could result in plagiarism. Moreover, there is a significant likelihood of plagiarism becoming increasingly common in academics. Research has demonstrated that ChatGPT can produce research articles suitable for publishing and can create scientific summaries with fictitious data that may go unnoticed by reviewers. These features could lead college students to depend exclusively on ChatGPT for composing academic writings. This ethical concern is exacerbated by ChatGPT's tendency to produce inaccurate and nonsensical responses, heightening the potential for disinformation to proliferate in scientific literature (Liebrenz et al., 2023).

Decrease in Advanced Cognitive Abilities

Relying too much on ChatGPT might have adverse effects on both students and teachers. For students, excessive screen time might result in a decrease in their advanced cognitive abilities like creativity, critical thinking, reasoning, and problem-solving. Using ChatGPT may simplify the process of getting answers, perhaps reducing students' enthusiasm for independent investigation and critical thinking (Kasneci et al., 2023). Teachers who rely

too heavily on ChatGPT may diminish the quality of their interactions with pupils and worsen preexisting inequities.

Conclusion

ChatGPT has greatly influenced higher education in Malaysia, especially with the rise in online learning demand and the necessity for tailored and engaging learning experiences. It has become a potent instrument for aiding and improving students' learning experiences. ChatGPT has facilitated the connection between conventional classroom education and online learning by providing smart and adaptable support. Some people view ChatGPT as a possible danger to the education sector, fearing that technology could supplant human teachers, reduce the importance of in-person contacts, or lead to a decrease in educational quality (Seo et al., 2021). It is important to recognize that ChatGPT is designed to enhance the learning process, not replace real instructors. Furthermore, the use of ChatGPT in education is in its initial stages, requiring more research and development to fully understand its potential influence on the industry (Lo, 2023). The success of ChatGPT in education will depend on its implementation and integration into existing educational frameworks.

Recommendations

Given the potential hazards associated with using ChatGPT, it is essential to provide some recommendations. Despite being restricted by some educational institutions, ChatGPT, a prominent developing AI tool, should be acknowledged for its potential in teaching and research. Students, teachers, and researchers should be motivated to utilize ChatGPT to maximize its benefits. Close attention must be given to ensure the inclusive, equitable, transparent, and ethical usage of ChatGPT.

Secondly, it is crucial for educational officials, educational leaders, and teachers to collaborate closely to adjust assessment criteria to avoid unjust appraisal of students' work. Cotton et al (2023) proposed that the new evaluation should require students to utilize their analytical, critical, communication, and problem-solving skills. It is recommended to prioritize formative assessment over summative assessment by creating interactive activities that include students in debates, group discussions, presentations, and teamwork (Cotton et al., 2023). Students must incorporate citations, references, and a specific context in academic reports, especially if the final report is used as the main assessment.

Next, educational institutions must create and distribute training materials to teachers and students for the effective and ethical use of ChatGPT, ensuring academic integrity. This suggests that rather than prohibiting the utilization of ChatGPT, individuals should receive training or direction on how to utilize this AI tool successfully for educational and research objectives.

Furthermore, students should remain cautious when utilizing the diverse support provided by ChatGPT. Students should review, analyze, and revise the responses produced by this AI program to verify its accuracy. Students should initially acquaint themselves with the application's advantages and disadvantages, including academic integrity norms and the consequences of academic dishonesty (Rudolph et al., 2023).

On top of that, there higher education institutions should prepare continuous monitoring and adaptation mechanism. Consistently evaluate its effects on academic

integrity, learning results, and student experiences. The continuous assessment will let institutions to adjust their tactics to use Chat GPT effectively and ethically when new issues and possibilities arise.

Finally, encourage collaboration among educational institutions, AI developers, and regulatory organizations to produce clear and comprehensive policies for the use of AI, particularly Chat GPT, in higher education. The policies should cover ethical considerations, data privacy, and the proper implementation of AI technologies. Engaging stakeholders in crafting these regulations guarantees a well-rounded and knowledgeable strategy for integrating AI into the academic setting.

Educational institutions can overcome the hurdles of using Chat GPT and maximize its benefits to improve students' learning experiences in higher education by following these suggestions.

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