Exploring the Use of ChatGPT in Academic Assignments: Frequency, Benefits, and Perceptions among University Students

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Article Information

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Abstract

The immediate advancement of artificial intelligence has introduced tools like ChatGPT, which are transforming academic practices among university students. This study investigates the frequency of ChatGPT usage, its perceived benefits, and students, views on its impact on academic tasks. Using a mixed- methods approach, the research combines quantitative surveys to assess usage patterns and qualitative interviews for deeper insights. The findings indicates that 71.3% of students primarily use ChatGPT for writing assignments or essays, with 53% rating it as very helpful in improving assignment quality. ChatGPT is valued for enhancing productivity clarifying complex concepts, and refining academic writing. However, concerns regarding over-reliance and ethical issues are prevalent. The study emphasizes the need for guidelines to promote responsible use while maintaining academic integrity. These findings provide important implications for educators and policymakers in integrating AI tools effectively into educational settings.

1. Introduction

The swift progress in artificial intelligence (AI) has transformed the educational environment, with AI-powered tools such as ChatGPT becoming increasingly favored by students for academic use. ChatGPT, an AI-driven language model, provides a diverse array of capabilities, including idea generation, clarification of intricate concepts, and support in writing and refining assignments. Although these capabilities have the potential to improve the academic experience, they also bring forth concerns regarding dependency, ethical usage, and the overall effects on learning outcomes.

The investigation examines how often ChatGPT is utilized, the advantages perceived by users, and the perspectives of university students regarding the incorporation of these tools into their academic routines. This examination seeks to offer a comprehensive understanding of the impact of ChatGPT on modern education. This study is driven by the increasing dependence on technology in educational settings and the necessity to thoroughly assess its effects on academic integrity, skill enhancement, and institutional regulations.

The study utilizes a mixed-methods approach, integrating quantitative surveys to gather data on usage patterns alongside qualitative interviews that explore student perceptions and experiences in greater depth. The results will enhance

current dialogues regarding the impact of AI in education, providing important perspectives for educators, policymakers, and technology creators. This paper emphasizes the opportunities and obstacles associated with using ChatGPT as a resource for academic improvement, with the goal of guiding approaches for its responsible and effective application.

1.1 Literature Review

An investigation into students' perceptions indicates a prevailing positivity towards ChatGPT, linked to its engaging and motivating characteristics, as well as the quality of interaction it provides. However, the tool's sporadic inaccuracies and the necessity for basic knowledge to utilize it effectively highlight significant limitations. These findings emphasize the intricate nature of incorporating ChatGPT into educational methodologies and point to the necessity for ongoing enhancement and ethical reflection. (Sandu et al., 2024)

The language model created by OpenAI has significantly changed digital transformation processes in multiple fields, such as education, while also prompting discussions regarding its ethical implications. In higher education ChatGPT has become increasingly popular due to its capacity to offer tailored academic assistance and constructive feedback. Nonetheless, its implementation faces obstacles, including issues related to academic integrity and the necessity for adequate training for educators to full leverage its advantages. The technology acceptance (TAM) provides a framework for understanding how students adopt ChatGPT, highlighting perceived usefulness and ease for use as crucial factors. Research indicates that students' understanding of technology and its importance to their academic discipline greatly affects their readiness to embrace AI tools such as ChatGPT. Although there are doubts regarding its precision and influence on education, students acknowledge ChatGPT's ability to enhance knowledge sharing and collaborative academic initiatives. These insights highlight the significance of tackling both opportunities and constraints in utilizing ChatGPT to improve educational results. (Acosta-Enriquez et al., 2024)

The integration of ChatGPT within academic settings can be examined using the framework of critical theory of technology, which posits that technology is intricately linked with societal, cultural, and institutional frameworks. From this perspective, ChatGPT transcends its role as a mere tool for academic tasks, becoming an integral component of a wider ecological system influenced by social and educational dynamics. This perspective emphasizes that students' engagement with ChatGPT mirror their surroundings, influenced by existing societal power dynamics and disparities. Generative AI, like ChatGPT mirrors previous technological innovations such as print and digital literacy, which transformed the concepts of writing and authorship. In the realm of education, these changes highlight the significance of comprehending how disparities I access and prevailing power dynamics affect the incorporation and application of AI tools in the learning process. (Baek et al., n.d.) The incorporation of ChatGPT in educational settings has shown promise in improving students' learning experiences by offering assistance with assignments, assessments, and creative content creation, while simultaneously alleviating repetitive tasks like grading and lesson preparation. ChatGPT enhances individualized learning by providing prompt feedback, supporting the understanding of intricate ideas, and refining language abilities, all of which contribute to cognitive growth and increased motivation. Furthermore, its capacity to facilitate project-based learning and improve student satisfaction and engagement highlights its significance in contemporary educational approaches. Although it shows great potential, the exploration of ChatGPT within the educational sector remain in its nascent phase, primarily concentrating on broad applications or particular domains such as medical education and writing. There has been insufficient exploration into its uptake among students, especially concerning their motivation and the elements that affect its utilization. The unified theory of acceptance and use of technology (UTAUT) serves as a framework to investigate these factors, providing valuable insights into the effective utilization of ChatGPT to meet student needs and improve their learning experiences. (Alshammari & Alshammari, 2024).

2. Research Methods

This investigation utilizes a quantitative approach to examine the prevalence, advantages, and viewpoints of university students concerning the application of ChatGPT in academic tasks. The data collection process involved a meticulously crafted Google Form survey, aimed at obtaining detailed insights into multiple aspects of ChatGPT usage. The survey focused on university students from various disciplines and institutions, with the goal of achieving a diverse and representative sample.

The survey included sections that focused on demographic details, the frequency of ChatGPT usage for academic

tasks, perceived advantages like improved productivity and learning results, as well as ethical issues related to its application. Participants provided ratings of their experiences and perceptions on a Likeart scale, facilitating the quantitative analysis of trends and patterns.

The analysis involved employing descriptive statistics to encapsulate usage frequency and inferential statistics to uncover significant correlations among student demographics, their perceptions of ChatGPT, and their reported academic outcomes. This method guarantees a comprehensive grasp of the integration of ChatGPT into the academic pursuits of university students.

3. Result and Discussion

This bar chart presents informing regarding the various tasks for which users engage with ChatGPT, highlighting the following insights:
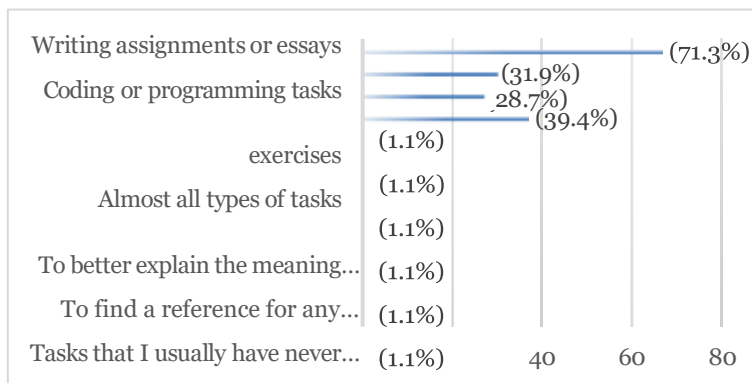

Fig. 1 Frequency of ChatGPT Usage Across Academic Tasks

Predominant activity: The tallest bar represents "Writing Assignments or Essays" with a total of 67 responses. This indicates that ChatGPT is commonly utilized for content creation, encompassing academic essays, articles, and professional assignments. It underscores the dependence of individuals on ChatGPT for the creation or enhancement of written content.

Moderate Usage Tasks:

"Laboratory or Research Report Assignments" (37 responses): This suggests that ChatGPT is recognized as a valuable resource for tasks related to scientific or technical writing. In the context of "presentation assignments", a significant number of users utilize
ChatGPT to develop slides, summaries, or speech content for their presentations.

"Coding or Programming Tasks" (27 responses): A significant number of users turn to
ChatGPT for assistance in coding, debugging or understanding programming concepts.

Less Common Tasks: Certain tasks, like "Exercises" or "Asking Random Things," yield a lower number of responses. This indicates that ChatGPT is utilized less often for diverse or exploratory tasks in comparison to targeted, goal-driven assignments.

Tasks such as "Planning" or "Finding reference for an assignment" receive even fewer responses, suggesting that users do not significantly depend on ChatGPT for these kinds of activities.

Key Insight: The main applications of ChatGPT lie in the realms of academia and technology, especially concerning content generation and tasks related to investigation. The usefulness for random or less structured queries is of lesser importance.
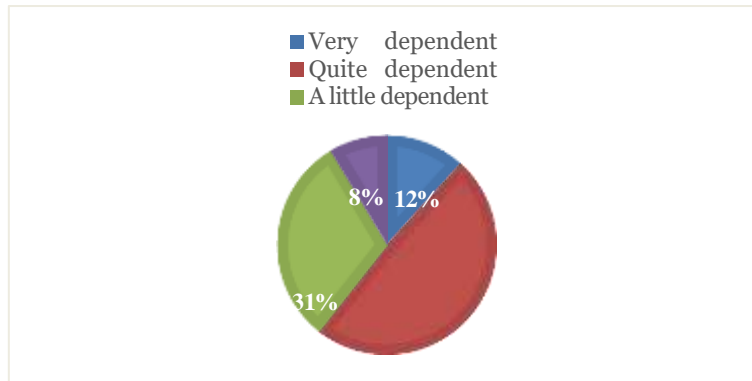
Fig. 2 Impact of ChatGPT on Assignment Quality Perceptions

This is an overview of what each section signifies:

Very Helpful (Blue): This segment constitutes the predominant portion of the responses. The findings indicate that ChatGPT markedly improves the quality of assignments for the majority of users. Possible explanations encompass delivering organized information, offering prompt clarifications, or presenting innovative ideas.

Quite Helpful (Red): A significant number of users consider ChatGPT to be fairly useful. These individuals probably utilize it as an auxiliary resource, enhancing their efforts without being the exclusive factor in the end result.

A little Helps (Orange): A limited proportion of users indicate slight advantages. For these users, ChatGPT can offer targeted insights or corrections, yet it does significantly alter the overall quality.

Doesn't Help at All (Green): This represents the most limited segment, illustrating a minimal cohort of users who perceive no value in ChatGPT. This may arise from their specialized knowledge, the demands of the task, or constraints in the tool's capacity to fulfill their particular requirements.

The highly favorable feedback, characterized by responses such as "Very Helpful" and "Quite Helpful", underscores the effectiveness of ChatGPT in enhancing assignment quality for the majority of users.
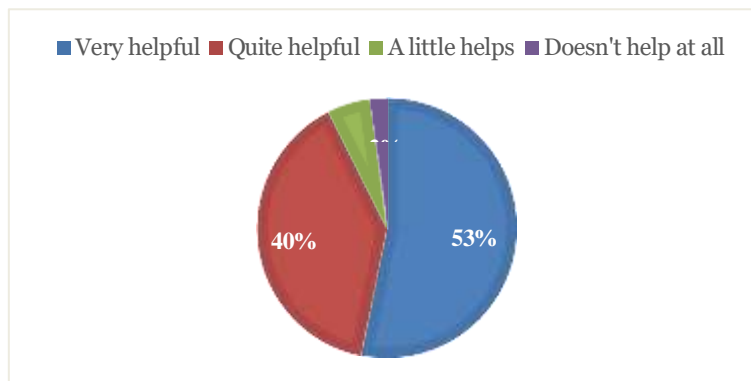

Fig. 3 Student Dependency Levels on ChatGPT for Academic Tasks

Every category provides distinct perspectives:

Quite Dependent (Red): This represents the largest segment, suggesting that numerous users utilize ChatGPT as an essential tool in their scholarly endeavors. It serves as a vital tool for generating ideas, organizing thoughts, and enhancing the quality of their work.

A Little Dependent (Orange): This segment ranks as the second largest. These individuals might utilize ChatGPT for motivation or particular assignments while retaining a greater level of autonomy in their academic pursuits.

Very Dependent (Blue): A smaller, yet significant, group of users exhibits a strong reliance on ChatGPT. The reliance on this assistance suggests that these may face challenges in completing coursework independently.

Doesn't Depend at All (Green): A minimal fraction of users report no reliance on ChatGPT. These individuals might lean towards conventional approaches or perceive the tool as less applicable to their scholarly requirements.

Although a majority of users exhibit varying degrees of reliance on ChatGPT, the combination of those who

are "A Little Dependent" and those who "Doesn't Depend" indicates that users retain a degree of autonomy in their work and decision-making processes.

4. Conclusions

This study illustrates the growing dependence on ChatGPT as an academic resource among university students, emphasizing its dual function in boosting productivity while also presenting ethical dilemmas. The capacity to enhance learning outcomes and streamline intricate tasks us clear; however, the possible dangers of reliance and improper use must be acknowledged. The results highlight the necessity of offering training and guidelines to encourage the responsible implementation of AI in educational settings. Future investigations could delve into the long-term effects on student performance and the principles of academic integrity. This paper contributes to the ongoing efforts to adapt educational practices by examining both opportunities and limitations within the evolving technological landscape.

5. References

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