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The Influence of ChatGPT on Social Science Students: Insights Drawn from Undergraduate Students in the United States

Mohaimenul Islam Jowarder
Department of Management Information System, Lamar University, United States
Corresponding Author: Mohaimenul Islam Jowarder; Email: mohaimenulislamvisa@gmail.com

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ABSTRACT

Recently, the artificial intelligence known as ChatGPT has turned into a global sensation, especially among students. This research paper investigates the influence of this AI-powered chatbot, on undergraduate social science students based on insights drawn from semi-structured interviews. The study aims to understand the level of awareness, adoption, perceived usefulness, and impact of ChatGPT on academic performance. 200 undergraduate students were selected and verbatim transcription was used and later thematic analysis was implemented. We implied our custom code to analyze the data based on sample collection from the students. The findings indicate that most of the participants were aware of ChatGPT and had used it for academic work. Perceived usefulness and ease of use were found to be significant factors that influenced the adoption of this technology. Social influence was also found to be a significant factor, with peer recommendations playing a role in shaping students' attitudes toward new technology. ChatGPT had a positive impact on the academic performance of the participants, particularly in assisting them in understanding difficult concepts and providing them with relevant study materials. The study suggests that chatbots can be valuable tools for learning and academic assistance, particularly in disciplines such as social science that require extensive research and analysis. The findings provide useful insights for educators and researchers seeking to integrate chatbots into existing teaching and learning methods to optimize their benefits. More research is needed to assess the future impacts on students and the education sector alike.

INTRODUCTION

Technology has become an integral part (Rokan & Monang, 2023) of our lives (Simeone et al, 2022; Anderson & Horrigan, 2016; Muydinovich et al, 2022) including education (Anderson, 2016; Andre et al, 2015; Jobirovich, 2022). In recent years (Urbina et al, 2022; Romero-Martin et al, 2022, Khosravi et al, 2022), especially during and after Covid-19, the integration of artificial intelligence (AI) and machine learning (ML) has become increasingly relevant in various fields (Lee & Hwang, 2022). While technology has been implemented by schools (Chen et al, 2015; Dichey & Dicheva, 2017) management (Olimov & Mamurova, 2022; Bakker et al, 2015; Buchanan et al, 2013; Cassidy et al, 2016; Centre for Postsecondary Research 2016; Centre for Postsecondary Research, 2017) for a variety of tasks such as multimedia purpose (Wei, 2022), the main purpose was to automate the process and immerse the students with the novel technological revolution (Ashrafzadeh & Sayadian, 2015; Chawinga, 2017). One of the most significant applications of AI is chatbots, which have been developed to assist users with information, customer service, and problem-solving. Chatbots are designed to interact with humans through natural language and aid, making them a popular tool for organizations and individuals. The latest development of this technology in education is ChatGPT, an AI software that has caused a stir globally.

The integration of AI has significantly impacted various fields, including healthcare, education, and communication. In the education

sector (Evans, 2014), AI tools such as chatbots have been developed to assist students in their learning process (Dyson et al, 2015; Greenwood et al, 2016). Chatbots are designed to provide students with personalized support, feedback, and guidance. Additionally, chatbots can help students improve their cognitive abilities by providing them with new insights and knowledge (Farley, 2013).

ChatGPT is a recent AI-powered chatbot developed by OpenAI, designed to engage with users and provide them with a human-like conversation experience. It was trained with large datasets, which enables it to understand and respond to natural language effectively. ChatGPT has been widely used by individuals and organizations to assist with information, customer service, and problem-solving. Additionally, ChatGPT has been used in the education sector to assist students in their learning process.

The objective of this study was to investigate the influence of ChatGPT on social science students. The specific research objectives were to perceive the context and extent of the student's submission in academia and how this technology has affected their learning habits, both academically and technologically.

METHODS

This study utilized a qualitative research design, and the data were collected through semi-structured interviews. The study was conducted on social science students from a leading university in the United States, Stony Brooks University. The participants were selected through purposive sampling, which ensured that the participants had used ChatGPT before. Additionally, the participants were required to be undergraduate students from the social science faculty.

A total of 200 participants were selected for this study from Stony Brooks University's Undergraduate programs in Social Science disciplines. The participants were interviewed in person, and the interviews were audio-recorded with the participant's consent. The interviews were conducted in a neutral environment to ensure that the participants were comfortable and could provide honest responses. The interviews were conducted in a semi-structured format, which allowed the participants to share their experiences and perceptions holistically. We also conducted focused group discussions (FGDs)

The data collected from the interviews were transcribed verbatim and analyzed using thematic analysis. Thematic analysis is a method used to identify patterns, themes, and meanings in qualitative data. The data were analyzed inductively, which involved identifying patterns and themes that emerged from the data.

The data analysis process involved several stages. First, the transcripts were read several times to familiarize the researchers with the data. Second, the data were coded, which involved assigning labels to specific words or phrases that captured the meaning of the data. Third, the codes were grouped into categories based on their similarities and differences. Fourth, the categories were refined, and the themes were identified. Finally, the themes were interpreted, and the findings were presented.

RESULTS AND DISCUSSION

We analyzed the variety of data collected from the participants regarding this novel software and how this is affecting their mindset as well as other aspects of education. The results showed a variety of reasons which assisted the study to progress and critically examine the context of influence on social science students.

Level of Awareness of ChatGPT Among Social Science Students

The study aimed to determine the level of awareness among social science students. Through semi-structured interviews, the researchers discovered that more than 90% of the participants were aware of this radical technology. However, the level of awareness varied among the students. Some had heard but had not used it, while others had used it before. In a study conducted by (Hew et al, 2016), the results were similar to our findings showing improved performance. From (Hew et al, 2016), researchers demonstrated that the use of aided technology can enhance learning awareness since the information is condensed from external sources. Our results also find the same similarity when we conducted interviews with the participants of our program. Those who had not used before were aware of its existence due to the publicity surrounding it. This software had been featured in news articles, social media platforms, and other online forums. The participants had come across

while browsing the internet or through recommendations from their peers.

On the other hand, many who had used this software before were aware of its capabilities and features. They had interacted and understood its functions. The participants who had used before had a better understanding of its potential to assist them with their academic work. From (Hewege et al, 2013), we discovered students often depend on technology to assist themselves with assignments which were also evident in our study. Overall, the study revealed that social science students had a high level of awareness of ChatGPT. The participants were aware of due to its publicity and recommendations from peers. Additionally, the majority who had used ChatGPT before had a better understanding of its features and capabilities. The high level of awareness among social science students suggests this is a popular tool among students.

Perceiving the Usefulness of ChatGPT

Another objective of the study was to assess the perceived usefulness of this software's implications among social science students. Through the semi-structured interviews, the researchers found that the participants perceived it to be a useful tool for academic work. The students reported that it was useful in assisting them with their coursework. They found it to be a convenient tool to use, as it provided them with instant responses to their queries. A study conducted by the researcher showed (Hou et al, 2015), instant responses, whether in classes or through online medium enables cognitive development for students. The participants also reported that it had assisted them in understanding difficult concepts, and it had provided them with alternative explanations to concepts they had struggled to understand.

Furthermore, it was found to be a useful tool for revising for exams in our analysis. by providing them with study materials, such as past exam papers and revision notes. The respondents stated it helped them to prepare for exams by providing them with relevant information. A similar study (Xue & Wang, 2022) also found technology to be useful when used for preparation purposes. In this aspect, ChatGPT is considered ahead of the competitors due to its instant responses.

Overall, this was perceived to be a useful tool for academic work by the research sample. The convenience and the instant responses it provided were significant factors that influenced the respondents' perceptions. The ability to assist the participants in understanding difficult concepts and providing them with relevant study materials also contributed to the participants' perception as a useful tool.

Factors Leading to the Adaptation of this Software

The study aimed to identify the factors that influenced the adoption among social science students as well. One factor that influenced the adoption was the perceived usefulness of the tool. The people who found it to be a useful tool were more likely to adopt it confirming past studies (Ibanez et al, 2014). They reported that it had assisted them in their academic work, and they found it to be a convenient tool to use. Another factor that influenced the adoption was the ease of use, indicating who found it to be easy to use were more likely to adopt it. The students reported a user-friendly interface, and they did not have to spend a lot of time trying to figure out how to use it.

The availability of alternative tools (Junco et al, 2013; Kidd et al, 2016) was another factor that influenced the adoption. The majority who did not have access to alternative tools were more likely to adopt ChatGPT. We discovered it was the only available tool that could assist them in their academic work. Finally, social influence was another factor that influenced the adoption. The students who had received recommendations from their peers were more likely to adopt. They reported that they had received positive feedback from their peers, which had influenced their decision to adopt the tool.

Impacts on Academic Performance

The study aimed to examine the impact on the academic performance of social science students as well. The students reported that it had assisted them in understanding difficult concepts and had helped them to revise for exams. The explanations provided them with alternative scenarios to concepts they had struggled to understand, and it had also provided them with relevant study materials. Furthermore, it saved them time when researching for their coursework by providing them with instant responses to their queries, which saved

them time that they could use to work on other aspects of their coursework (Kipcha et al, 2016). Overall, it had a positive impact on their academic performance. ChatGPT assisted them in understanding difficult concepts, helped them to revise for exams, and saved them time when researching for their coursework.

We have also divorced a few negative impacts where students would simply turn in their assignments with this software. However, most US universities imply intelligent software such as Honorlock, Proctorio, and even Blackboard has built-in smart functions which can detect computed-generated contents. Many students said they have submitted assignments but got zero and even provided examples where graduate students also did the same. In our response, they stated they first got the concept of automating the tasks from graduate students.

The study found that most of the participants were aware of ChatGPT and had used it for academic work. The students stated that it was a convenient tool to use, and they appreciated the instant responses that it provided. This finding is consistent with the rapid growth in the use of chatbots in recent years found in other research (Boyle et al, 2016; Chang & Wei, 2016) as they offer quick and convenient solutions to various problems. Moreover, we discovered in our paper that the perceived usefulness played a significant role in the adoption of the tool. The students who found this technology to be a useful tool for academic work were more likely to adopt it. It was evident that it was particularly useful for assisting students in understanding difficult concepts, providing them with relevant study materials, and saving them time when researching for coursework. This finding supports the notion that chatbots can be valuable tools for learning and academic assistance, particularly in disciplines such as social science that require extensive research and analysis.

The study identified that simplicity of use was another significant factor that influenced the adoption. People who found it to be easy to use were more likely to adopt it. This discovery emphasizes the importance of user-friendliness in technology adoption, particularly in academic contexts (Reeder & Lee, 2022) where students may not have a lot of time to figure out how to use a new tool. Additionally, social influence played a role in the adoption of this artificial intelligence. Respondents who had received recommendations from their peers were more likely to adopt the tool which suggests that peer recommendations can be influential in shaping students' perceptions and attitudes towards new technology (George & George, 2023). The study also revealed a positive impact on the academic performance of the participants with some negatives as well. ChatGPT assisted the participants in understanding difficult concepts, revising for exams, and saving them time when researching for coursework, supporting the notion that chatbots can be valuable tools for enhancing academic performance, particularly in disciplines that require extensive research and analysis.

However, it is important to note that ChatGPT should not be seen as a substitute for critical thinking and independent learning. While it can assist students with their academic work, students should still engage in critical thinking and independent learning to develop their knowledge and skills. A significant portion of the students stated they frequently use this software to bypass the exams and class assignments which require a thorough understanding of a context.

CONCLUSION

Technology has been influencing our lives in unthinkable ways since the beginning of the pandemic. The education sector was completely reorganized, and this novel artificial intelligence is the latest addition. This paper provides valuable insights into the influence of ChatGPT on social science students, drawing from the perspectives of undergraduate students. The findings reveal it was a useful tool for academic work, with a positive impact on academic performance. The study also identified factors that influenced the adoption of ChatGPT. including perceived usefulness, ease of use, and social influence. We discovered chatbots can be valuable tools for learning and academic assistance, particularly in disciplines such as social science that require extensive research and analysis (Chan, 2023).

However, it is essential to emphasize that auto-generating intelligent software such as ChatGPT should not be seen as a substitute for critical thinking and independent learning (Limna et al, 2022; Holmes & Tuoumi, 2022). We discovered

many students were rigorously engaged with the software and instead of exploring external scholarly resources (Malinka et al, 2023) such as journals and publications, they would depend on ChatGPT for their academic purpose. In the long term, this could harm and obstruct their intelligence growth (Xia et al, 2022; Zhao et al, 2023). Students should still engage in critical thinking and independent learning to develop their knowledge and skills. Overall, this scientific study highlights the potential of chatbots in enhancing the learning experience and supporting academic performance. Further research could explore how the use of ChatGPT could be integrated into existing teaching and learning methods to optimize their benefits.

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