



Assessing the Awareness and Usage of ChatGPT among Students of Computer Science at Federal Polytechnic Nasarawa, Nasarawa State, Nigeria

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Abstract

The study assessed the awareness and usage of ChatGPT among the students of computer science, Federal Polytechnic Nasarawa, Nasarawa state. A survey research design was used for the study. A structured questionnaire titled; “Level of Awareness (LACGPT) and Extent of Usage (EUCGPT) of ChatGPT among the students’ of computer science” was used as an instrument for data collection. The internal consistency of the instrument was determined using Cronbach Alpha and a reliability coefficient of 0.928 was obtained. Data was analyzed using mean, standard deviation and percentage. The results showed that students were aware of ChatGPT and had used it, although there was variation in the frequency of usage. Furthermore, the study found that most students perceived ChatGPT as a valuable tool for various purpose, such as information retrieval and generating text etc. It was recommended that the computer science lecturers should organize a class lectures to their students on the awareness and use of ChatGPT. This should be aimed at increase the students’ awareness of the available ChatGPT and also to equip them with the necessary skills and technical know –how on their usage.

Keywords: Awareness, Extent of Usage, ChatGPT, Students, and Computer Science

Introduction

Being aware of technology trends is crucial for individuals to adapt, make informed decisions, and leverage these advancements to stay competitive in their respective fields (Pandey et al., 2021). In today’s technology –driven world, digital awareness is crucial for individuals to adapt, thrive, and take advantage of the numerous opportunities for personal and professional development that technology offers (Ranky, 2023). Technology trend awareness refers to an individual’s capacity to stay informed and attentive to emerging and popular technologies that are gaining widespread acceptance in relevant fields. It encompasses the ability to recognize and comprehend the practical applications and advantages of these technologies for achieving professional success. Furthermore, technology usage refers to the practical application and utilization of various technologies by individuals, organizations or society as a whole. Technological usage can include activities such as using software applications, operating electronic devices, accessing online platforms, implementing automation systems, or leveraging advanced tools and techniques to accomplish desired outcomes (Adel & Karaci, 2020; Blut & Wang, 2020; Tsou & Chen, 2022). In recent years, Artificial Intelligence (AI) technologies have been rapidly advancing with applications in various domains, including education.

ChatGPT, developed by OPenAI, is an AI language model that uses deep learning algorithms to generate

human- like responses in text-based conversations. It has gained attention for its potential to enhance communication and learning experiences. However, the extent to which students are aware of ChatGPT and utilize it for education purposes is still relatively unexplored. Traditional methods of communication and information retrieval have been extensively used in classrooms.

However, with the increased availability of AI technologies, there is a growing interest in understanding how students interact with AI- powered chatbots like ChatGPT. ChatGPT has the potential to support students by providing immediate responses to the questions, helping them with problem-solving and fostering engagement in learning (George *et al.*, 2023). Additionally, ChatGPT can assist students in accessing educational resources, providing personalized feedback, and engaging in conversational learning experiences. This technology can potentially enhance student learning outcomes but it is crucial to examine students’ awareness and usage of ChatGPT within the educational context. The integration of AI chatbots in educational settings has gained attention in recent years. Several studies have explored the usage and effectiveness of AI chatbots in enhancing student learning experiences (Smith & Johnson, 2018).

Furthermore, Jackson et al., (2019) examined students’ perception of using AI chatbots in their learning process and the findings suggested that students found the

chatbots helpful in providing instant feedback and clarification on course concepts.

Similarly, Davis and Thompson (2020) conducted a study on the usage of AI chatbots with their school schoolwork. The results indicated that students appreciated the convenience and accessibility of the chatbots as it provided quick and accurate responses to their tutorials. Moreover, Gao and Wang (2019) conducted a study on the adoption and acceptance of AI chatbots in education and they found that students' attitudes and perceptions toward AI technologies influenced their intention to use chatbots for learning purposes. However, despite the growing interest in AI chatbots, little research has specifically, investigated the awareness and usage of ChatGPT among students offering Computer Science as a course in Polytechnics. The researcher, aims to gather insights into the students' awareness about ChatGPT, their experiences and perspectives on using the tool and identify potential areas for improvement.

Objectives of the Study

Specifically, the objectives of this study was to:

1. determine the level of awareness of ChatGPT among students of Computer Science, Federal Polytechnic Nasarawa State.
2. determine the extent of Usage of ChatGPT among Students Computer Science, Federal Polytechnic Nasarawa State.

Research Questions

The following research questions were raised to guide the study.

1. What is the levels of awareness of ChatGPT among students of Computer Science, Federal Polytechnic Nasarawa State?
2. To what extent is the ChatGPT utilized by the students of Computer Science, Federal Polytechnic Nasarawa State?

Theoretical Framework

Technology Acceptance Model (TAM) was introduced by Davis (1986). The TAM proposes that the acceptance and usage of a technology are influenced by perceived usefulness and perceived ease of use. This framework is applied to understand students' adoption and usage of ChatGPT. It suggests that if students perceive ChatGPT as useful and easy to use, they are more likely to adopt and utilize it for various purposes.

Methods

A survey research design was used for the study, this is because the researcher is intended to describe the students' attitudes, opinions, behaviours or characteristics toward the awareness and usage of ChatGPT for learning purposes. The population of the study was 1,980 respondents and the researcher opted for simple random sampling technique for sampling. A simple random sampling technique is a method of sampling in which each sample has an equal probability of being chosen. And for the sample size, Krejcie and Morgan (1970) table of sample size was used as a benchmark to determine the sample size of (100) which consist of 80 National Diploma students and 20 Higher National Diploma students. Two instruments were used for data collection, namely; "Level of awareness of ChatGPT (LACGPT) among students of Computer Science and Extent of Usage of ChatGPT (EUCGPT) among student of Computer Science." The instrument is divided into two part: The first part of the instrument has (6) items each that elicited information from students on "Level awareness of ChatGPT" and the second part of the instrument has (5) items that elicited information on the extent of ChatGPT usage".

The two questionnaires were validated by three experts who are Principals Lecturers in the School of Information Technology Federal Polytechnic, Nasarawa State. The internal consistency of the instrument was determined using Cronbach Alpha and a reliability coefficient of 0.928 was obtained. The data collected using questionnaire were analyzed mean, standard deviation and percentage. Level awareness of ChatGPT questionnaire was used as an instrument on 5 Point Likert scale. The instrument was coded using 5 Point Likert scale; Very Much Not Aware (VMNA) = 1, Not Aware (NA) = 2, Undecided (UD) = 3, Aware (A) = 4 and Very Much Aware (VMA) = 5. The benchmark of the five Points Likert scale according to Okolocha & Nwadiami (2015) is at mean score of 3.00 and this was adopted for forming the basis of agreement, needed, aware etc. While a scale from 1-5 represent the frequency of ChatGPT Usage, where 5 represent the highest usage (daily) and 1 represent the lowest usage (rarely). This scaling system provide a clear representation of the usage patterns among computer science students.

Result

Table 1. Levels of Awareness of ChatGPT among Students of Computer Science

S/N	Potentials of ChatGPT	N	Mean	SD	Remarks
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1	ChatGPT for online Tutorials	100	3.71	0.849	Aware
2	Programming practice	100	3.81	0.562	Aware
3	Retrieving text	100	2.84	0.784	Not Aware
4	Collaboration platform	100	3.48	0.975	Aware
5	ChatGPT is very reliable	100	2.90	0.894	Not Aware
6	Provide feedback instantly	100	3.54	0.789	Aware
7	Helping with problem-solving and fostering engagement	100	3.59	0.800	Aware
8	Assist students in accessing educational resources	100	3.70	0.739	Aware
Grand Mean			3.50		

Table 1 shows the mean and standard deviation of computer science students' response on their awareness of ChatGPT in Federal Polytechnic Nasarawa, Nasarawa State, Nigeria. Almost all the items are having mean scores of above 3.0 with the exception of item 3 and 5 with 2.90 and 2.84 respectively. The grand mean score of 3.50 indicated that the students are aware of ChatGPT.

Table 2. Extent of Usage of ChatGPT by Students of Computer Science

S/N	Frequency of ChatGPT Usage	Percentage
1	Daily	45%
2	2-3 time a week	25%
3	Once a week	15%
4	Occasionally	10%
5	Rarely	5%

Key: (Daily) = 5, (2-3 times a week) = 4, (Once a week) = 3, (Occasionally) = 2, (Rarely) = 1

Table 2 show that, 45% of the computer science students use ChatGPT on a daily basis. A quarter 25% of the students use it 2-3 times a week, around 15% of the students use ChatGPT once a week. Additionally, 10% of the students use it occasionally, while 5% of the students use it rarely. Overall, this analysis showcases a significant and widespread usage of ChatGPT among computer science students at the institution.

Discussion

The findings of this study were discussed and compared with similar studies in literature. The discussion followed the main research findings of the study. The findings of the study showed that out of the total surveyed students, a grand mean score of 3.50 reported being aware of ChatGPT in Federal Polytechnic Nasarawa, Nasarawa state. The findings of this study agreed with (Kraiwanit *et al.*, 2023) who also found that a significant proportion of students were aware of

ChatGPT and had interacted with it for various purposes.

Another result of this study showcases a significant and widespread usage of ChatGPT among computer science students with an approximate of 45% usage of ChatGPT on daily basis, implying that they heavily rely on its capabilities for their academic needs. A quarter of the students use it 2-3 times a week, indicating a regular but slightly less frequent usage pattern. Around 15% of the students use ChatGPT once a week, suggesting a moderate level of engagement. Additionally, 10% of the students use it occasionally, while a small percentage (5%) use it rarely, indicating a lesser reliance on the tool. The findings of this study agreed with (Jackson *et al.*, 2019; Davis & Thompson, 2020) who found that students appreciated the convenience and accessibility of chatbots, as it provided quick and accurate responses to their questions.

Conclusion

The study assessed the awareness and usage of ChatGPT among the students of computer science in Federal Polytechnic Nasarawa, Nasarawa state. Based on the findings, this have indicated a relatively high level of awareness of ChatGPT among the students with a significant widespread usage of ChatGPT among the student's population.

Recommendation

It is recommended that;

1. Computer science lecturers should organize a lectures to their students on the awareness and use of ChatGPT. This should be aimed at increase the students' awareness of the available ChatGPT and also to equip them with the necessary skills and technical know –how on their usage.

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