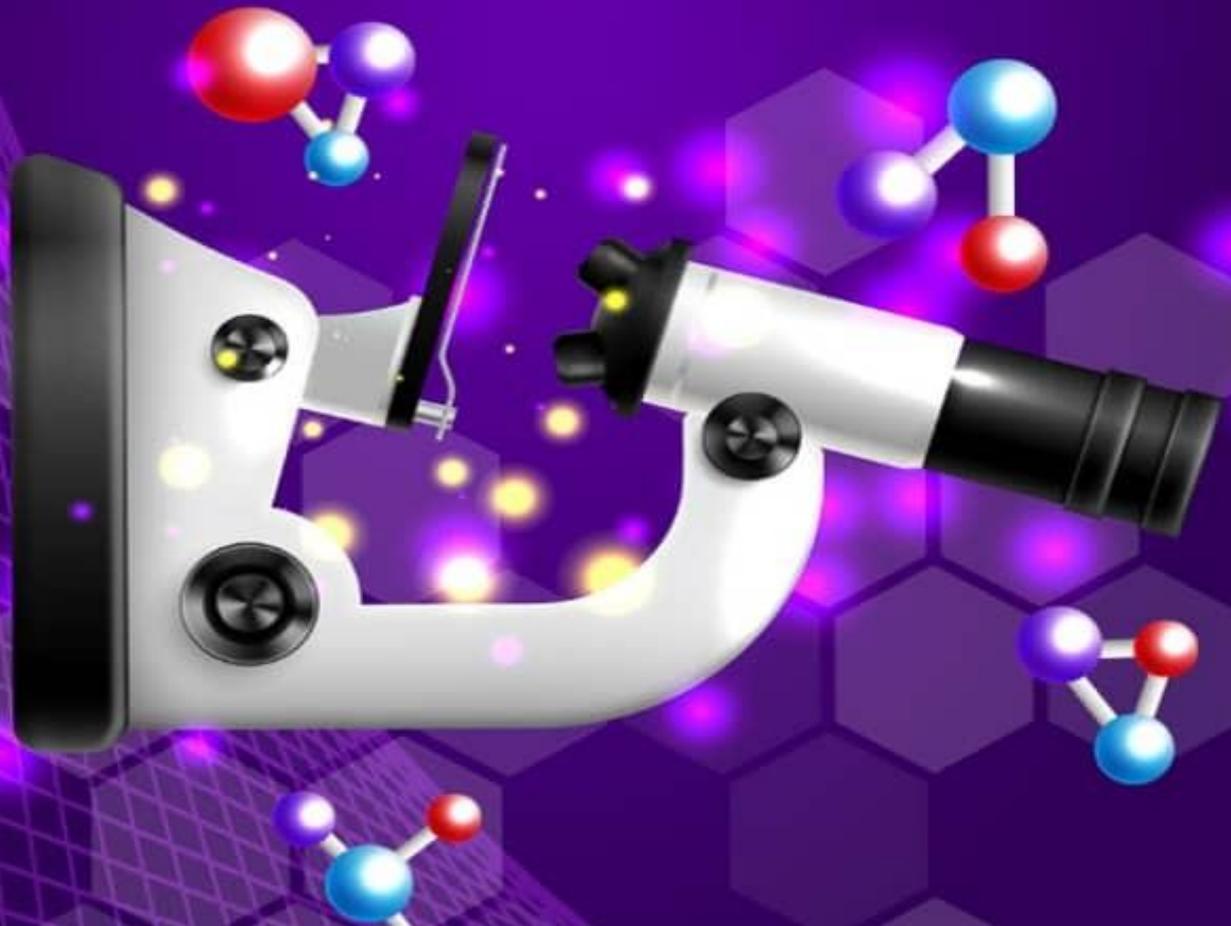# FOS

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Pre-service English Language Teachers' perception of the use of ChatGPT Artificial Intelligence technology for learning English language.

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Abstract

The study examined the perception of Pre-service English Language teachers in Alvan Ikoku Federal University of Education, Owerri on the use of ChatGPT Artificial Intelligence (AI) tool in learning of English Language. Three research questions and one hypothesis were formulated in accordance with the purpose of the study. Descriptive survey research design was adopted. The instrument used for data collections were questionnaires and the population for the study consisted of all English Language Pre-service teachers in the University who participated in the 2024 teaching Practice exercise. A sample size of two hundred (200) pre-service teachers was randomly drawn from the entire population of the study through a proportionate simple random sampling technique. Findings reveal that the pre-service English Language teachers were highly aware of ChatGPT as AI tool for learning English language with no significant difference in awareness level between males and females. Furthermore, it was discovered that there were many benefits of using ChatGPT as a learning tool. Some challenges to the use of the tool in learning includes limited access to the tool can create inequality; it cannot be used as an authoritative source of information and poor internet connectivity among others. Based on the findings, the researchers recommended that workshop on the effective use of ChatGPT and other emerging AI tools in learning should be designed for all lecturers and students in the University.

Key words: Perception; ChatGPT; Artificial Intelligence; Pre-service English teachers English language learning.

Introduction

The turn of the 21st century has triggered off growing interest in information and communication technology especially artificial intelligence (AI). Equally of interest is the array of application of AI in all human endeavours. One of such is how to apply it effectively in the education sector to enhance the effectiveness of teaching and learning. According to Holbrook (2020) emerging technologies-artificial intelligence (AI), machine learning, natural language processing (NLP), speech recognition, robotics, the internet of things (IoT), virtual and augmented reality and even block chain are so permeated into all areas of society that they are rarely recognized as anything uncommon. AI is becoming common in education

globally that Nigeria cannot afford to be left behind. These technologies have the potential to enhance learning outcomes, ease processes, increase efficiency (Fawaz, 2023) and prepare students for a new order or work especially in a digitalized world.

Artificial Intelligence is a branch of computer science that attempts to imitate or simulate human intelligence in a machine, so that machines can perform tasks that typically require human intelligence (Escott, 2017). He maintained that some programmable functions of AI systems include planning, learning, reasoning, problem solving, and decision making. AI can be classified into three categories, Narrow AI (NAI), which is designed to perform specific tasks and General AI (GAI) which aims to mimic human intelligence and possess cognitive abilities across various fields and artificial super intelligence (Escott, 2017). The impact of AI in the field of education can being vividly felt in the following: use of technologies such as smart learning, tutoring systems, social robots, virtual facilitators, online learning environments, learning management systems, and learning analytics (Okello, 2023). One of the AI powered tool that is impacting education globally and one of the leading topics in current AI research is ChatGPT.

ChatGPT (which stands for Chat Generative Pre-trained Transformer) is a large language model chatbot that uses natural language processing to create humanlike dialogue. In simpler terms, it is a trained artificial intelligence that can generate text and interact conversationally. ChatGPT was developed and made available in November 2022 by Open AI an American artificial intelligence research company (Casheekar et al., 2024). There are two versions available: GPT3 (free) and GPT4 (paid) (Kelly, 2024). It is a natural language processing Chabot driven by generative AI that allows one to have human like conversations to complete various tasks. ChatGPT AI tools that can help answer questions and enables one to do some tasks such as composing e-mails, essays, and code. It understands and generates humanlike text so that it is useful for tasks such generating content, answer questions, emerging in conversations and providing explanations.

With its infinite capabilities, ChatGPT is a very flexible tool that can be used for a wide range of tasks, including topic research, information extraction and paraphrasing, text translation, test grading, and conversational conversations (McLean, 2024). It also has the capability of checking the language sound, spelling, grammar and punctuation (Bozic & Poola, 2023) which makes it suitable and helpful in the learning of English language. ChatGPT is capable of an almost limitless amount of tasks. Among them are the following: creating text; responding to inquiries; conversing (Deng, 2023); translating text between languages; producing codes to assist with programming; and proofreading and editing content. Because of ChatGPT's adaptability and effectiveness, it became one of the consumer software applications with the quickest growth rate by January 2023.

The adoption and use of any emerging technology in the classroom depends largely on the attitude of the user of such technology. Attitude is developed as a result of a user being aware of the emergence or existence of such a technology. Scholars have researched on the awareness of learners and teachers of this tool. Kingful and Ojerinde (2023) discovered that a significant number of Nigerian students in the university are not familiar with chatbots. In a study carried out through online survey, Delello et al. (2023) investigated students' awareness of and perceived benefits and risks associated with AI and ChatGPT use in learning. They reported that 71.5% of the respondents indicated familiarity with the AI tool. In a related

study, Nnaemeka and Ogunbadejo (2024) reported high level of awareness and knowledge of ChatGPT among students of Nnamdi Azikiwe University. A study carried out using mixed method approach confirmed that academics in Ghana show minimal awareness of ChatGPT (Adarkwah et al. 2023).

The benefits of using ChatGPT in performing everyday tasks are enormous. People around the world began using it to write essays, poems, cover letters, résumés, and everything else they could think of (Tate et al. 2023; Williams, 2023) within months of its first appearance. According to Lo (2023), ChatGPT can generate human-like responses in a cohesive and informative way that reduces user working time and unnecessary effort. Yan (2023) cited in Ho (2024) reported that students regarded it as a "powerful yet obedient servant" to paraphrase and detect mistakes in their writing, reaching above average or acceptable levels. Yang (2022) concluded that "chatbots are useful as teaching and learning aids for both teachers and students" while also acknowledging that the changing roles of teachers and advocating a change of approaches to accommodate AI chatbots as partners to teachers. Wagwu, Okpala, Oladokun and Ajani, (2023) discovered that students perceived that ChatGPT has the following benefits in learning; accurate responses to user queries, instant and round-the clock availability and time saving for the user. Similarly, it can analyze a lot of data in a short amount of time because of its quick response time and capacity to manage several conversations at once. Regardless of the numerous benefits of ChatGPT, there are some concerns about its use in teaching and learning.

ChatGPT' as intelligent answering machines can produce reasonable responses but are incorrect or illogical answers which are occasionally unreliable (Biadoo-Anu, & Owusu Ansah, 2023) with errors spotted. In the light of the above, it is imperative to ascertain whether the students are aware of this AI technology's limitations in order to use it with caution (Amaro et al., 2023; Fitria, 2023). This concern is reported by Osaji, (2023) that ChatGPT was banned across all devices in New York's public schools because of its perceived negative impact on student learning and potential for plagiarism. As indicated by recent research, advanced AI systems are capable of defying conventional plagiarism detection software like Turnitin. This could encourage students to present ChatGPT's output as their own work (Khalil, & Er, 2023). The development of critical thinking, problem-solving, creativity, and research skills can be hindered by the use of ChatGPT especially if outputs are not subjected to critical analysis (Kasneci, et al., 2023; Sullivan, et al., 2023). Osaji went further to report that while universities in Australia are considering returning to conventional pen and paper for examinations, lecturers in the United Kingdom universities have been urged to review the way in which their courses are assessed to minimize this negative impact.

ChatGPT has come to be recognized as a veritable tool for teaching and learning especially English language among students globally since its development and launching in 2022. In Nigerian higher education institutions, students have been using it to write assignments even when the lecturers were yet to recognize, adopt and recommend it for learning purposes. Most lecturers who are conversant with the tool have stressed that the tool is prone to academic dishonesty hence they insist that learners should not use it for academic purposes. To the best of the researchers' knowledge, there is a dearth of studies on ChatGPT awareness among pre-service teachers in Nigeria. In the light of the foregoing, this study was

designed to determine the level of awareness of pre-service English language teachers on the use of ChatGPT for learning, ascertain the perceived benefits of using ChatGPT in learning and identify the perceived challenges of using ChatGPT in learning English language. The study posed and answered the following research questions and tested one hypothesis. What is the level of awareness of English language Pre-service teachers of the use of ChatGPT AI in learning? What are the benefits of the use of ChatGPT AI in learning of English language as perceived by English language Pre-service teachers? What are the challenges facing the use of ChatGPT in learning English language as perceived by English language Pre-service teachers?

Methods

The researchers employed a descriptive survey research method The population comprised of five hundred and fifty five (555) third year and final year students of the university who participated in the 2024 teaching Practice exercise. Sample sizes of two hundred (200) respondents were randomly drawn from the entire population of the study through a proportionate simple random sampling technique. The instrument used for data collection was a questionnaire titled "Perception of Pre-service English Language Teachers on the use of ChatGPT AI in learning English Questionnaire" (PPETOUCAILEQ). The instrument had two sections, A and B, section A was on demographic information of respondents while section B was a four point modified Likert scale, that measured Pre-service teachers' awareness of the AI tool using Very Aware (VA), Aware (A) Slightly Aware (SA), and Not Aware (NA). Similarly, Perceived benefits of using the tool and challenges facing the use of the tool in learning English Language were measure using Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The validity of the questionnaires was ensured through experts' opinions from Measurement and Evaluation and Educational Technology lecturers. The reliability of the instrument was achieved through a pilot study conducted in Faculty of Education in another university in Imo State which yielded a reliability coefficient of .81 Cronbach's alpha.

Decision Rule: Awareness means score ranging from 1.00 - 1.33 were interpreted as low level of awareness; 1.33 – 2.66 were interpreted as moderate level of awareness while 2.66 – 4.00 were interpreted as high level of Awareness. In answering the research question on perceived benefits and challenges of using ChatGPT in learning, mean scores less than 2.5 were rejected while mean scores above 2.5 were accepted. In testing the null hypothesis, the null hypothesis was rejected when the calculated sig. value was less than 0.05; on the other hand, if the sig. value was more than 0.05, the researchers fail to reject the null hypothesis.

Result

200 copies of the research instrument were distributed to the respondents online out of which 183 were correctly filled and returned. This number gives a return rate of 91.5%. Out of the 183 respondents, 48 were males while 135 were females.

Answering research question one

What is the level of awareness of English language Pre-service teachers of the use of ChatGPT AI in learning?

Table 1

Pre-service English Teachers' Mean Score and Standard Deviation on Awareness of ChatGPT as English Language learning tool

S/n	Item	Mean	SD	Remarks
1	I am familiar with the concept of ChatGPT	3.38	.75	Highly Aware
2	I think ChatGpt is easy to use	3.05	.80	Highly Aware
3	I think ChatGPT is a valuable tool for teaching English language	2.85	.91	Highly Aware
4	I can chat and receive prompt response from ChatGPT	2.95	.80	Highly Aware
5	I have used ChatGPT in writing assignment	2.87	.92	Highly Aware
6	I am aware of some limitations of ChatGPT	2.28	.93	Moderately Aware
7	I am aware that ChatGPT can interpret data in table, perform statistical test, interpret results and write analysis	2.41	.99	Moderately Aware
8	I am aware that ChatGPT can produce answers to your questions in various formats	2.96	.97	Highly Aware
9	I know that ChatGPT can paraphrase written document	2.80	.95	Highly Aware
10	I am aware of other similar tools like ChatGPT that can be used for learning English Language	3.29	.90	Highly Aware
	Cumulative Mean	2.88		Highly Aware

Data presented in Table 1shows that the English language Pre-service teachers who took part in the survey are having high level of awareness and are knowledgeable of ChatGPT as a tool for learning English Language. Their mean scores on awareness for the ten items on awareness ranged from 2.41 to 3.38 with a cumulative mean score of 2.88 indicating a high level of awareness of ChatGPT as a learning tool for English language by the respondents.

Answering Research question two

What are the benefits of the use of ChatGPT AI in learning of English language as perceived by English language Pre-service teachers?

Table 2: *Pre-service English Teachers mean score on perceived benefits of using ChatGPT in learning English Language*

S/n	Item	Mean	SD	Remarks
11	Provides an engaging and personalized learning experience	3.34	.79	Accepted
12	Ensures increased accessibility to a wide variety of content and resources	3.55	.58	Accepted
13	Provides a Virtual tutoring tool for instant tutoring and support 24/7	3.21	.60	Accepted

S/n	Item				
14	Enhances students English language learning by providing real-time translations, grammar correction and pronunciation feedback	3.35	.72	Accepted	
15	Enhances students motivation to study English Language	2.91	.89	Accepted	
16	Helps students to generate topics and ideas that they can use	3.29	.83	Accepted	
17	Provides free and easy to use tool for teachers and students	3.04	.81	Accepted	
	Cumulative Mean	3.24		Accepted	

Data presented in Table 2 indicates that the pre-service English language teachers perceived that ChatGPT is of benefit in the learning of English language. All the items received mean responses ranging from 2.91 to 3.55 with a cumulative mean score of 3.24; it was an indication that the perception of the benefits of ChatGPT for learning was high.

Answering research question three
What are the challenges facing the use of ChatGPT in learning English language as perceived by English language Pre-service teachers?

S/n	Item	Mean	SD	Remarks
18	Unequal access to the tool as a result of lack of device	3.25	.76	Accepted
19	It cannot be used as an authoritative source of information as it can produce incorrect answers	2.81	.75	Accepted
20	Can provide answers that are clearly biased	2.71	.84	Accepted
21	Prone to academic dishonesty and plagiarism	2.95	1.02	Accepted
22	Prone to privacy breaches	2.47	.81	Rejected
23	Can hinder development of critical thinking, problem-solving, creativity, and research skills	3.10	.70	Accepted
24	Poor internet connectivity	3.25	.76	Accepted
25	Inadequate electricity supply	3.16	.79	Accepted
	Cumulative Mean	2.96		Accepted

Table 3: *Pre-service English Teachers mean score on perceived challenges of using ChatGPT in learning English Language*

Data presented in Table 3 shows that seven out of the eight items on perceived challenges to the use of ChatGPT in learning received mean scores above 2.5 ranging from can provide answers that are clearly biased (M =2.71, SD = .84) to unequal access to the tool as a result of lack of device (M= 3.25, SD = .76). Only one item received mean score less than 2.5 which is Prone to privacy breaches (M = 2.47, SD = .81). This means that the pre-service English language teachers perceived the seven items with mean scores above 2.5 as challenges to the use of the tool in learning.

Testing Hypothesis

There is no significant difference in awareness of ChatGPT mean scores between male and female pre-service English language teachers.

Table 4

Summary of t-test of significant mean difference on awareness of ChatGPT as a tool for Learning English language

Awareness of ChatGPT as a learning tool	N	Mean	SD	T	Df	p-value	Decision
Male	48	30.60	4.72				
				1.74	181	.084	Not Significant
Female	135	29.13	5.14				

Data presented in table 4 shows that there was no significant difference in mean scores for male pre-service English language teachers (M = 30.60, SD = 4.72) and female pre-service English language teachers (F =29.13, SD = 5.14; t (181) = 1.74, = .08, two – tailed) in their level of awareness of ChatGPT for learning English language. The inference was based on the p-value of .08 which is greater than the significant level of .05. Consequently the researchers fail to reject the null hypothesis.

Discussion

Pre-service English language teachers show high level of awareness of ChatGPT as a tool for learning English language. A greater number of the respondents has used it in writing assignments and can use it to receive prompt responses on issues of interest. This finding lays credence to Delello et al. (2023) who stated that majority of students used in their study were highly familiar with ChatGPT. This finding is also in tandem with Nnaemeka and Ogundajo (2024) who reported that students of their university have high level of awareness and knowledge of ChatGPT. This finding is however at variance with that of Kingful and Ojerinde (2023) who reported that a significant number of Nigerian students in the university are not familiar with chatbots.

The pre-service English teachers in the university perceived ChatGPT as a very beneficial tool in the learning of English language. The perceived benefits include providing an engaging and personalized learning experience for learners. This finding is supported by Tulsiani, (2024) that stated that ChatGPT can function as a personal tutor, providing students with instant clarifications, explanations, and additional resources tailored to their specific queries and learning pace. This is further supported by Abdrani, & Al-Shargabi, (2023) who discovered that ChatGPT can be beneficial to use in learning since it gives students immediate, individualized feedback. Offering a virtual tutoring solution for round-the-clock assistance and immediate tutoring finds support in Wagwu et al. (2023) that discovered that chatGPT is beneficial instant and round-the clock availability and time saving for the user as well as analyse a lot of data in a short amount of time because of its quick response time and capacity to manage several conversations at once. Other benefits include improving students' acquisition of the English language by offering real-time translations, comments on speech and grammatical correction. This finding is in tandem with Ho, (2024) that students regarded

it as a "powerful yet obedient servant" to paraphrase and detect mistakes in their writing. ChatGPT was also found beneficial in enhancing students' motivation to study English Language. This result is supported by (Yildiz, 2023) who stated that using ChatGPT tool as a learning material, increased the motivation of the students. These numerous benefits of using ChatGPT as perceived by pre-service teachers of English language have a lot of challenges.

The major challenges to the use of ChatGPT in learning English language in the university are not inherent in the tool rather they are environment based. They include lack of device, poor internet connectivity and poor electric power supply. These challenges exist as a result of the economic hardship being experienced in the country and the poor electricity and ICT base of the institution making it very difficult for students to use institutional Wi-Fi in learning. ChatGPT requires the possession of a smart phone, tablet or computer with internet connectivity as well as electricity to function effectively. ChatGPT cannot be used as an authoritative source of information as it can produce incorrect answers. This is supported by Biadoo-Anu, & Owusu Ansah, (2023) who stated that it may produce fair answers, but sometimes they give inaccurate or irrational responses that are not trustworthy with answers limited to the data with which it was trained. Another challenge to the use of chatGPT in learning is that it is prone to academic dishonesty and plagiarism. This is buttressed by Khalil, & Er, (2023) report that the ability of chatGPT outputs to defy plagiarism detection software like Turnitin can lead students to submit such works as their own. Furthermore, reliance on ChatGPT can hinder development of critical thinking, problem-solving, creativity, and research skills among users. This is in tandem with Kasneci, et al. (2023) and Sullivan, et al. (2023) who maintained that development of critical thinking, problem-solving, creativity, and research skills can be stalled especially if ChatGPT outputs are not subjected to critical analysis.

Conclusion

It is almost indisputable that ChatGPT and other generative AI have emerged and have the potential to completely transform the educational system, despite their inherent shortcomings. From the findings of the study it was concluded that pre-service English language teachers in the university have high level of awareness of chatGPT tool as a technology for learning English language. The perceived benefits of using ChatGPT in learning included providing an engaging and personalized learning experience for learners, providing computer-generated tutoring solution for round-the-clock assistance and immediate training, offering real-time translations, comments on speech and grammatical correction and increased the motivation of the students in learning English language. Many challenges were found to hinder the use of the tool in teaching which includes lack of requisite devices, poor internet connectivity and poor electric power supply. Furthermore, incorrect and biased responses, susceptibility to academic dishonesty as well as hindering the development of critical thinking, problem-solving, creativity, and research skills among users are some of the perceived challenges identified by the pre-service English teachers.

Recommendation

The paper recommends the adoption of ChatGPT in learning English language courses to motivate students' desire to study independently while yet being monitored by teachers. Instead than making students dread ChatGPT's negative effects, lecturers would be

better served by demonstrating to them how to use it for their advantage. In doing this, there is the need to do the following:

1. Organizing training workshops for lecturers on the use of ChatGPT in teaching, learning and research to enable them effectively direct students on how to use the technology in learning.
2. Stepping up the level of internet connectivity on campus to avail lecturers and students the opportunity to make use of the tool in teaching and learning on campus by strengthening the institutional Wi-Fi to cater for the need of the institution.

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