



Assessing Counselling Students' Perceptions on Application and Challenges of Using Artificial Intelligence Tool in Educational Learning Process

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Abstract

The This study assessed counselling students' perceptions of the application and challenges of artificial intelligence tool in the education process in Bayelsa state. Based on the purpose of the study three (3) research questions guided the conduct of the study. The study employed a descriptive survey research design. The study's population consists of 34,187 students from the five universities in Bayelsa State (Federal University, Otuoke:11,040students; Niger Delta University: 16,000 students; University of Africa, ToruOrua: 3,220 students; Bayelsa Medical University:3,780students, and Hensard University, TorOrua:147students). A purposive sampling technique was used to select counselling students 564 who had previous interaction with ChatGPT. A structured questionnaire, which was constructed by the researcher, was used to collect information from the participants through an online Google Form. Two experts in Educational Measurement and Evaluation, and one expert in guidance and counselling validated the questionnaire. The questionnaire's internal consistency was assessed using the Cronbach's alpha technique, and a reliability coefficient of 0.87 was obtained. The mean and standard deviation were used to answer the research questions. The findings reveal varied perspectives on the application of ChatGPT, such as a research assistant, writing aid, learning tool, and communication enhancer. The study reveals varied perspectives on the challenges of incorporating ChatGPT in the learning process, which include unreliable information on topics with few citations, the potential for plagiarism, being unable to cite sources accurately, and hindering critical thinking development. The article concludes by emphasizing the need for careful consideration and integration of AI technologies in education, highlighting the risks of uncritical reliance on such tools, and advocating for a balanced approach to foster students' critical thinking and intellectual growth.

Keywords: Application, Artificial intelligence, Challenges, ChatGPT, Perception

Introduction

The term artificial intelligence (AI) describes the process of creating computer systems that can perform tasks that typically require human intelligence, such as reasoning, solving problems, learning, perceiving, and processing natural language. Among the field's pioneers, American computer scientist John McCarthy offered one of the most important definitions of artificial intelligence. According to McCarthy (2007) artificial intelligence is the science and engineering of making intelligent machines. AI comes in a variety of forms, including general artificial intelligence and narrow AI. Narrow artificial intelligence (AI), sometimes referred to as weak AI, and it is made to accomplish particular tasks in a restricted field, including speech recognition or picture classification. Conversely, general artificial intelligence, often known as generative AI, strives to demonstrate Human-like intelligence and adaptability in a variety of settings and tasks (Goodfellow, Bengio & Courville, 2016). Recent years have witnessed tremendous progress in the field of artificial intelligence (AI), with applications in a wide range of sectors, including finance, healthcare, education, and transportation. Artificial intelligence (AI) innovations like deep learning, neural networks, and natural language processing have completely changed how computers communicate with people and handle data (Nilsson, 2014). A great example of artificial intelligence (AI) technology is ChatGPT, which uses natural language processing and deep learning to produce text responses in conversational contexts that resemble those of a human.

ChatGPT, which stands for Generative Pretrained Transformer was created in the late 2022 by Open AI, which is an American artificial intelligence startup. ChatGPT is known as a form of generative AI because of its stability to produce original results. ChatGPT provides users with written responses based on artificial intelligence in response to queries or prompts by leveraging natural language processing to learn from internet data. Large text data sets are used to train these models so they can anticipate words in sentences and then provide human-like output that is both coherent and persuasive when responding to statements or questions. The world has taken notice of its remarkable ability to generate replies that are rational, well-organized, and educational (Zhai, 2022). As the leading natural language processing (NLP) model, ChatGPT demonstrates human-like response generation capabilities, emphasizing personalized and interactive assistance. Notably, it can offer customized recommendations for educational resources based on individual learning objectives and preferences (Tahiru, 2021). Since its official launch on November 30, 2022, ChatGPT has quickly become a revolutionary user application, growing at an unprecedented rate. In just two months, ChatGPT accumulated an amazing userbase, reaching 100 million active users as of January 2023 (Rahimi & Abadi, 2023). By August 2023, the number of unique users had increased to over 180 million, making it the most rapidly growing application in terms of usage (Tong, 2023; Hu, 2023).

The use of ChatGPT in education has generated considerable interest due to its potential to enrich the learning experience of students. This approach can provide immediate feedback, tailor responses to each student's needs, and help students grasp difficult topics by giving them in a timely manner. This makes it a potentially useful tool that encourages student engagement and cognitive development by adjusting to their learning style and providing ongoing assistance with their process of acquiring knowledge (García, 2023). In keeping with this, it has shown to be an effective tool for encouraging students' writing ability improvement. Students can enhance their written communication and gain higher efficacy in their written expression by engaging with the system and receiving thorough feedback on their writing along with grammatical corrections and improvement suggestions (Osorio, 2023). It is important to realize that this application is not a comprehensive solution for creating scientific material, even if it markets itself as a useful tool for scientific writing aid. It is up to writers to use their expertise and knowledge to verify and enhance the data that the tool provides. Nevertheless, it also shines at encouraging collaborative student participation in projects and assignments and facilitating group conversations. This encourages communication and idea sharing among students, which strengthens their feeling of community (Qadir, 2022).

However, in addition to its possible benefits, ChatGPT poses novel challenges and obstacles for education (Zhang, 2023; Azaria, 2022). Concerns over the potential for AI-enabled academic dishonesty arise from the technology's ability to precisely respond to user requests. This technology might be abused to complete assignments and tests on the part of students. Teachers are concerned that students

may depend too much on ChatGPT to produce appropriate texts quickly, outsourcing their work to the AI system (Mhlanga, 2023). In addition, worries have been raised about plagiarism, false information, and improper referencing (Sallam, 2023). In response to the possible problem of academic plagiarism made easier by AI writing tools such as ChatGPT, Tian, a student at Princeton University, created a program named “GPTZero” that calculates the percentage of AI-generated text in any given document (Mitchell, 2022; Stern, 2022). As a precaution, the New York City Department of Education has blocked ChatGPT access on its public-school networks and related devices (Allen, 2022; Rosalsky & Peaslee, 2023). To optimize ChatGPT's advantages while reducing its disadvantages, it is imperative to consider the ramifications of incorporating it into the educational process (Lo, 2023). There are few studies that explored students' experiences applying ChatGPT in an educational setting, despite the mounting concerns and the necessity for in-depth research.

Therefore, the purpose of this study is to assess how students view using ChatGPT in the educational setting. It will do so by examining the students' general perception of the tool, as well as their perceptions of its benefits, challenges and potential solutions for efficient use. The researcher seeks to narrow the current research gap and advance scientific knowledge of artificial intelligence in education through this work. Furthermore, as students are the main consumers and benefactors of these technologies, learning more about how they view ChatGPT is essential. Educational practitioners, researchers, and policymakers will find great value in the insights this study provides, as it will help them comprehend the consequences of incorporating ChatGPT into educational settings and provide guidance for the responsible and efficient use of this technology.

Literature Review

Sok and Heng (2024) focused on the opportunities, challenges, and strategies for using ChatGPT in higher education. The study adopted a literature review approach and employed document analysis as a research design. It reviewed various types of documents, particularly research articles, published since 2022 when ChatGPT was launched. Based on the extensive review, the study showed that ChatGPT offers a variety of opportunities for higher education, including assessment innovation, instructional support, remote learning support, research design and development support, academic writing support, and administrative assistance and productivity. However, ChatGPT also presents a number of challenges and issues related to academic integrity, security and privacy, reliance on artificial intelligence, learning assessment, and information accuracy. Iyolita and Muhammad (2024) investigated ChatGPT's potential opportunities and challenges in academia. To attain the objective, a review of relevant literature and online resources (news, articles, etc.) was carried out. The noticing-collecting-thinking approach was adopted to explore and categorize all observed concerns. The outcome of this study revealed that research, education, personal skill development, and social aspects constitute the four broad perspectives that articulate the opportunities and constraints of ChatGPT in academia. For instance, from the education perspective, ChatGPT can help students have a personalized learning experience. On the other hand, it might provide false information as well as lack the ability to generate responses on its own because those responses depend on training data sets, which may contain errors. Similarly, from the point of view of the personal skill development, this model may impair a person's capacity for critical thought and content production; while providing reading and writing practice sessions and relevant content, it can improve a person's language proficiency.

Ngo (2023) investigated how 200 Vietnamese university students perceive using ChatGPT for learning, including benefits, barriers, and potential solutions. A questionnaire was distributed to the 200 students via an online survey, and 30 students participated in semi-structured interviews. The research results showed that, in general, students had a favorable opinion of ChatGPT's application. The benefits of ChatGPT, according to students, included saving time, providing information in various areas, providing personalized tutoring and feedback, and illuminating ideas in writing. Also, several barriers to using ChatGPT were recognized, and some solutions were suggested for improvement of using ChatGPT in education. The most concerning issues for students while using ChatGPT were inability to assess the quality and reliability of sources, inability to cite sources accurately, and inability to replace words and use idioms accurately. The study suggested that some potential solutions can be implemented; for example, verifying ChatGPT's responses with reliable sources; using ChatGPT as a

reference source or a consultant tool; providing guide lines for use; and promoting academic integrity to ensure ethical uses of ChatGPT in an academic context. United Nations Educational, Scientific and Cultural Organization (2023) enumerated that the possible applications of ChatGPT in higher education are: teaching and learning (ChatGPT can perform many simple or technical tasks (e.g. basic research, calculations, proofing); research (ChatGPT has been used to generate entire academic journal articles, opening an ethical debate about whether a non-human author can be considered a contributor to the creation of knowledge); administration (ChatGPT is used respond to queries from students; finding news, resources, and other information; helping students to sign up for courses, complete course requirements, check administrative information e.g., exam time tables, location of classes), and community engagement (ChatGPT is used to develop sound strategies for community engagement).

Chan and Hu (2023) explored university students' perceptions of generative AI (GenAI) technologies, such as ChatGPT, in higher education, focusing on familiarity, their willingness to engage, potential benefits and challenges, and effective integration. A survey of 399 undergraduate and postgraduate students from various disciplines in Hong Kong revealed a generally positive attitude towards GenAI in teaching and learning. Students recognized the potential for personalized learning support, writing and brain storming assistance, and research and analysis capabilities. However, concerns about accuracy, privacy, ethical issues, and the impact on personal development, career prospects, and societal values were also expressed. Canedo (2023) explored the impact of ChatGPT, and Open AI language model, on undergraduate students in Brazil, aiming to uncover its benefits and challenges in higher education. A survey of 206 undergraduate students was conducted together data on profiles, usage frequency, and perceptions of ChatGPT's impact in education. The findings from the study revealed that the participants recognized ChatGPT's value in enhancing productivity, organization, study orientation, code writing, and text revision. Concerns were also raised about user dependency, answer reliability, and ethical considerations. Tlili et al. (2023a) examined the use of ChatGPT as a virtual assistant to support students in their learning processes, exploring the benefits and limitations of utilizing chatbots in education. To support the research, they considered factors such as student engagement, personalized learning experiences, and the ability to provide timely and relevant feedback. Overall, the study concluded that ChatGPT can provide personalized and interactive experiences, but it also acknowledges challenges such as the limitations of chatbots in understanding complex or context-specific queries and potential ethical concerns in terms of data privacy and bias.

Maphotoetal (2024) investigated students' perspectives on the utilization of generative AI in South African open distance-learning (ODEL) university. The study found complex perspectives, which reflected the discourse surrounding the integration of generative AI in academic writing, where students grapple with the dual-edged nature of technological assistance. The study revealed that amidst the prevalent fears of generative AI potentially altering individual writing styles, a subset of students emerges, expressing a sense of optimism about the technology's potential to assist in overcoming specific writing challenges. This optimistic outlook resonates with scholarly discourse portraying generative AI as a supplementary tool, particularly effective in addressing issues related to grammar and structural elements in writing. It suggests an acceptance among students of generative AI's role as a facilitator rather than a disrupt in the writing process Managwu (2022) explored the integration of AI-chatbot into teaching and learning: A remedy for enhancing educational and administrative responsibilities among institutions in Nigeria's South-South geo-political zone. A descriptive survey research approach was used in the study. The study's population consists of 252,000 students from South-South public universities (Delta state, Edo State and Bayelsa). The sample size for this study was 399 respondents (274 students, 67 professors, and 58 administrative employees) from state and federal institutions across the country. The 20-item AICHATBOTSQ (AI-chatbot structured questionnaire) was utilized to collect data. The mean, standard deviation, and analysis of variance were used to examine the data collected (ANOVA). According to the findings, there is no significant difference in respondents' mean ratings of the necessity for AI- chatbots in teaching and learning, as well as completing administrative chores, across institutions in the South-South. Low internet infrastructure, instability in governance, insufficient financing, and poor energy supply, among other problems, are obstacles impeding the deployment of AI-chatbot technology in performing administrative responsibilities among institutions in South-South Nigeria. The study suggests that universities in the South-South of Nigeria

fully integrate artificial intelligence tools (AI-chatbots) into teaching and learning as a method of enhancing educational and administrative responsibilities.

Socio-Cultural Theory (SCT)

Socio-cultural theory (SCT) a frame work that focuses on the role of social interaction and cultural context in cognitive development, can be used to successfully examine the integration of generative AI in the educational process (Scott & Palincsar, 2013; Zhou,2020). SCT, which was created by LevVygotsky, offers an important viewpoint for examining how generative AI functions in the zone of proximal development (ZPD) to support and scaffold students' educational processes (Chang&Sun,2009). This theory allows scholars to investigate the social dimensions of generative AI-assisted language learning, taking into account student-tool interactions as well as the cultural setting of academic instruction (Baskara,2023; Cai,Lin &Yu,2023). By emphasizing contextual, social, and cultural factors and promoting comprehension between technological learning systems and human creativity, the SCT contributes to the development of a frame work for human-AI collaboration. The framework for collaboration between humans and AI emphasizes the crucial role that trust plays in the adoption of generative AI and points out that a barrier to its general adoption is a lack of awareness (Glikson&Wooley,2020; Xu et al.,2023). This paradigm examines how generative AI, in particular chatGPT, might be used to improve education by acting as catalysts for increased output, excellence, and innovation in the educational setting. It draws attention to the long-term benefits of utilizing ChatGPT for educational empowerment, pointing out that its adaptive interaction and real-time feedback capabilities are comparable to the proven success of one-on-one tutoring models. This cooperative strategy represents an influence on both short-term project outputs and long-term educational empowerment.

Statement of the Problem

ChatGPT is a useful research tool that gives students an easily accessible way to look through large data bases of material and create citations. Furthermore, because of its capacity to translate textual barriers, it can foster diversity in the classroom. Notwithstanding the alluring opportunities, there are still difficulties with integrating ChatGPT into the educational setting. The integrity of academic work is one of the main issues. The ease with which essays, summaries, and even code can be produced via ChatGPT raises concerns about possible plagiarism and a possible decrease in student effort. An over-reliance on ChatGPT may prevent students from actively processing and evaluating information, as they grow accustomed to obtaining it already digested. This could impede the development of critical thinking abilities. Although ChatGPT's outputs are greatly influenced by the data it is trained on, there is also a concern over the possibility of biased or erroneous information being created by the system. The possibility that students could use ChatGPT for foul intention such as fabricating news stories or changing data sets, raises further ethical questions. The impact of ChatGPT on education is diverse, thus, it is important to know how undergraduate students see its use and the challenges it poses. This constitutes the central idea of this research. Through survey collection, the study seeks to paint a complete picture of how students perceive ChatGPT's involvement in their educational process.

Purpose of the Study

The purpose of the study is to assess the counselling students' perceptions of the application and challenges of artificial intelligence tool in the education process. Specifically, the study seeks to:

1. Assess the counselling students' perception of application of ChatGPT in education process.
2. Identify the counselling students' perception of the benefit in utilizing ChatGPT for .
3. Identify the challenges faced by the counselling students in utilizing ChatGPT for educational purposes.

Research Questions

1. What are the perceptions of counselling students on the use of ChatGPT in education process?
2. What are the students' perception of benefits of using ChatGPT in education process?
3. What are the students' perception of the challenges of using ChatGPT in education process?

Methodology

The study employed a descriptive survey research design. The study's population consists of 34,187 students from the five universities in Bayelsa State, of which one belongs to the Federal Government (Federal University, Otuoke:11,040 students), three belong to the State Government (Niger Delta University Yenagoa: 16,000 students; University of Africa, ToruOrua:3,220, and Bayelsa Medical University: 3,780 students), and one is privately owned (Hensard University, ToruOrua:147 students). A purposive sampling technique was used to select counselling students of 564 undergraduate students who had previous interaction with ChatGPT. A structured questionnaire, which was constructed by the researcher, was used to collect information from the participants through an online Google Form. Two experts in Educational Measurement and Evaluation, and one expert in guidance and counselling validated the questionnaire. The questionnaire's internal consistency was assessed using the Cronbach's alpha technique, and a reliability coefficient of 0.87 was obtained.

Results

Research Question One: What are the perceptions of counselling students of the use of ChatGPT in education process?

Table1: Students' Perception of the Use of ChatGPT

S/N	Students' perception of the use of ChatGPT	Mean	Standard Deviation
1	ChatGPT is used as a supplementary tool for research	3.6	0.78
2	ChatGPT is used to gather information and generate ideas.	3.343	1.07
3	ChatGPT provides a platform for practicing and improving writing skills	3.44	0.86
4	ChatGPT aids in collaborative projects, facilitating communication and idea exchange among students.	3.88	0.48
5	ChatGPT serves as a virtual tutor, answering queries related to course work and providing additional explanations.	3.63	0.48
6	ChatGPT is used to refine one's arguments and write clear, concise messages.	3.04	1.14

Table 1 shows the perceptions of counselling students of the use of ChatGPT in education process. The mean scores of the participants for the items 1 to 6 are greater than the criterion mean of 2.5, which shows that the participants agreed on the items 1 to 6. Therefore, the result in table 2 is summarized that the participants use ChatGPT for research assistant, writing aid, learning tool, and communication enhancer.

Research Question Two: What are the students' perception of the benefits of using ChatGPT in education process?

Table2: Students' perceived benefit of ChatGPT

How helpful do you find ChatGPT for your academic work?	Frequency	Percentage
Not helpful at all	-	-
Slightly helpful	35	6.2%
Moderately helpful	34	6.0%
Very helpful	495	87.8%
Extremely helpful	-	-
Total	564	100%

Table 2 shows the students' perception of benefits of using ChatGPT in education process. Table 2 shows that none of the students agreed that ChatGPT is not helpful at all, or extremely helpful in the education process. Thirty-four participants (6.0%) opined that ChatGPT is moderately helpful, followed by 35 participants (6.2%), who opined that ChatGPT is slightly helpful, while 495 participants (87.8%) opined that ChatGPT is very helpful.

Research Question Three: What are the students' perception of the challenges of using ChatGPT in education process?

Table 3: Students' perception of the challenges of ChatGPT

S/N	Students' perception of the challenges of ChatGPT	Mean	Standard Deviation
1	ChatGPT can provide unreliable information on topics with few citations	3.94	0.24
2	ChatGPT can produce inaccurate or false factual references	3.25	1.09
3	ChatGPT is unable to cite sources accurately	3.75	0.66
4	ChatGPT is unable to replace words and use idioms wisely	3.14	0.99
5	ChatGPT is unable to examine quality and reliability of sources	3.44	0.86
6	ChatGPT can exhibit logical errors and contradictions	3.94	0.24
7	ChatGPT is prone to plagiarism	3.87	0.33
8	Limited access to up-to-date data bases	3.75	0.43
9	Over reliance on ChatGPT can hinder a students ability to develop critical thinking and research skills.	3.97	0.17

Table 3 shows the students' perception of the challenges of using ChatGPT in education process. The mean scores of the participants for the items 1 to 9 are greater than the criterion mean of 2.5, which shows that the participants agreed on the items 1 to 9. Therefore, the result in table 3 is summarized that the participants' perception of challenges of using ChatGPT are unreliable information on topics with few citations, prone to plagiarism, being unable to cite sources accurately, limited access to up-to-date data bases, and hindering critical thinking development.

Discussion of Findings

Findings from research question one revealed that the participants' perspectives on the application of ChatGPT are for research assistant, writing aid, learning tool, and communication enhancer. The finding of this study is in agreement with the findings of Iyolita and Muhammad (2024) investigated ChatGPT's potential opportunities and challenges in academia. To attain the objective, a review of relevant literature and online resources (news, articles, etc.) was carried out. The noticing-collecting-thinking approach was adopted to explore and categorize all observed concerns. The outcome of this study revealed that research, education, personal skill development, and social aspects constitute the four broad perspectives that articulate the opportunities and constraints of ChatGPT in academia. Also, United Nations Educational, Scientific and Cultural Organization (2023) enumerated that the possible applications of ChatGPT in higher education are: teaching and learning (ChatGPT can perform many simple or technical tasks (e.g. basic research, calculations, proofing); research (ChatGPT has been used to generate entire academic journal articles, opening an ethical debate about whether a non-human author can be considered a contributor to the creation of knowledge); administration (ChatGPT is used respond to queries from students; finding news, resources, and other information; helping students to sign up for courses, complete course requirements, check administrative information e.g., exam time

tables, location of classes), and community engagement (ChatGPT is used to develop sound strategies for community engagement).

Findings from research question two revealed that the participants' perception on benefits of using ChatGPT in learning is that ChatGPT is very useful in their education process. This result is in line with the findings of Chan and Hu (2023) who explored university students' perceptions of generative AI (GenAI) technologies, such as ChatGPT, in higher education, and revealed that the participants have positive attitude towards GenAI in teaching and learning. Moreover, Maphoto et al. (2024) investigated students' perspectives on the utilization of generative AI in South African open distance learning (ODEL) university. The finding revealed that a subset of students expressed sense of optimism about the technology's potential to assist in overcoming specific writing challenges and ChatGPT is accepted among students as a facilitator rather than a disruptor in the writing process.

Findings from research question three revealed that the participants' varied perspectives on the challenges of incorporating ChatGPT in the learning process include unreliable information on topics with few citations, potential for plagiarism, unable to cite sources accurately and hindered critical thinking development. The findings of this study are in agreement with the findings of Tlili et al. (2023a) who examined the use of ChatGPT as a virtual assistant to support students in their learning processes, and found that the challenges of using ChatGPT are limitations of chatbots in understanding complex or context-specific queries and potential ethical concerns in terms of data privacy and bias. Canedo (2023) explored the impact of ChatGPT an Open AI language model, on undergraduate students in Brazil, aiming to uncover its challenges in higher education, and found that challenges are user dependency answer reliability and ethical considerations.

Conclusion

Based on the findings from the study, the study concludes that the perception of counselling students on the ChatGPT application are for research assistant, writing aid, learning tool, and communication enhancer, while the challenges of ChatGPT are the unreliability of information on topics with few citations, potential for plagiarism, unable to cite sources accurately and hindered critical thinking development as result of incorporating ChatGPT in the learning process,

Recommendations

Counselling students and researchers should not take ChatGPT's word as gospel, rather verify the information it provides with credible sources.

Undergraduates and researchers should improve on the queries they pose to ChatGPT as ChatGPT is most useful when the inputs provided to it are carefully created.

Ethics education should be integrated in the school curricula so as to raise awareness about responsible Artificial intelligence (AI) use, plagiarism and the importance of critical thinking.

Providing professional development for teachers and developing policies and regulations can help to mitigate the ethical concerns of generative AI.

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