

Awareness and Utilization of ChatGPT among Academic Staff of Federal College of Education, Kontagora

¹Oyefeso, Olufemi Olanrewaju & ¹Abdulazeez, Olatunji Yusuf

Corresponding author: femolapel@gmail.com

¹Department of Computer Science, Federal College of Education, Kontagora, Niger State.

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Abstract

This study presents a comprehensive investigation into the awareness and utilisation of ChatGPT, a state-of-the-art AI-powered language model, among academic staff of the Federal College of Education, Kontagora, where the educational landscape is evolving to embrace innovative teaching and learning methods. The aim is to determine, among others, the extent of awareness and usage of ChatGPT among the academic staff, and to assess the level of adoption and integration of ChatGPT within the educational processes. A quantitative approach was employed, utilising surveys to gather data. A representative sample of two hundred and ten (210) academic personnel was purposively drawn from the six schools (i.e., schools of secondary education: Science, Education, Primary and Early Childhood, Art & SOS, Languages, and Vocational programmes) of the College for the study. A fifteen (15)-items questionnaire was analysed using simple percentages. The findings revealed that 68% of the respondents demonstrated awareness of ChatGPT while 32% currently made practical use of it often. Further analysis from interviews affirms that factors such as familiarity with AI technologies, training opportunities, and perceived benefits played pivotal roles in influencing the adoption rate. Challenges including technological infrastructure, concerns about AI's impact on traditional teaching methods, and the need for tailored professional development were identified as barriers to wider integration. Recommendations among others include the development of targeted training programs, fostering collaboration between AI specialists and educators, and creating conducive environment for technological innovation within Federal Colleges of Education.

Keywords: Awareness, ChatGPT, College of Education, Utilization.

Introduction

In today's rapidly evolving educational landscape, the integration of cutting-edge technologies is transforming the way we teach and learn (Dempere et al 2023). One such transformative technology is ChatGPT (Generative Pre-trained Transformer), an Artificial Intelligence (AI)-powered language model developed by OpenAI. It has garnered significant attention for its ability to generate human-like text, answer questions, and assist in various language-related tasks. "Artificial Intelligence (AI) has become increasingly important, influencing many aspects of our lives" and "large language models (like ChatGPT) have brought AI into the spotlight (Kandlhofer et al, 2023). As educational institutions seek innovative ways to enhance teaching and learning experiences, it becomes crucial to explore the extent to which such advanced AI tools are being adopted and integrated into the academic realm (Johnson & Adebayo, 2022).

According to Dempere et al. (2023), Adams and White (2018), the awareness levels of AI tools, including natural language processing-based models such as ChatGPT, among educational professionals, particularly those within Colleges of Education staff, emerged as a critical topic of scholarly inquiry. Notable research endeavors have sought to ascertain the extent of knowledge and perceptions surrounding AI's integration into educational settings. Sok and Heng (2023) conducted an in-depth analysis of AI applications in education, shedding light on the multifaceted potential of AI tools for educational improvement. Their study highlighted the importance of understanding the pedagogical implications of AI and the necessity of cultivating awareness among educational professionals to harness its benefits. Similarly, Zeide (2019) delved into the promise and perils of AI in education, underlining the significance of educators' awareness, ethical considerations, and the imperative of professional development in navigating the AI landscape in educational contexts. These investigations underscored the pivotal role of awareness as a precursor to meaningful AI adoption in education.

Moreover, scholars recognized the pressing need for addressing barriers to AI adoption within educational circles. The EU Science Hub (2021) and Brown & Davis (2019) emphasized that while AI holds the potential to revolutionize teaching and learning, its widespread integration hinges on the capacity to address key challenges. This includes ensuring that educators possess the requisite knowledge and skills to effectively leverage AI tools (Pedró et al, 2019). Afonughe et al (2021) conducted a study on the incorporation of AI chatbots into educational and administrative processes in Nigeria's South-south geopolitical zone. The study revealed positive attitudes and awareness, but limited implementation within both Federal and State institutions. Ene-Edah (2023) asserted that Artificial Intelligence, including variants such as Chat GPT, has the capacity to transform academic communication in Nigeria by providing 24/7 student support and fostering knowledge-sharing among scholars, though the extent of awareness and utilization by academic staff remains insufficiently documented in the existing reports.

Insights from these studies collectively underscored the nascent stage of AI awareness among Colleges of Education staff and the broader educational community, highlighting the need for further research and professional development initiatives aimed at bridging this awareness gap. The ethics of AI in education, data privacy, and concerns regarding equity were identified as central issues that underscored the complexity of AI integration in educational settings, necessitating the fostering of a nuanced understanding of AI's role among educational professionals as an imperative for informed decision-making.

Statement of the Problem

The integration of AI-powered technologies in educational institutions is a global trend that has the potential to revolutionize teaching and learning processes. However, in the specific context of Colleges of Education institutions in Nigeria, it is imperative to investigate the extent to which AI tools, such as ChatGPT, have been recognized and incorporated into the pedagogical practices of academic staff. Moreover, these institutions play a crucial role in shaping the future educators of Nigeria, which makes it even more essential to evaluate their preparedness and willingness to embrace AI technologies that can potentially improve the quality of teacher training and, by extension, the education system in the country.

To address this challenge, it is essential to conduct a comprehensive empirical study within the Federal College of Education, Kontagora, which assesses the current state of awareness, utilization, adoption, and integration of AI technologies, with a particular focus on ChatGPT, among academic staff. Such an investigation will not only provide insights into the readiness of this institution to embrace AI innovations but will also offer valuable data for designing targeted strategies and initiatives aimed at enhancing teacher training and, ultimately, the educational experience for students across Nigeria. This research is pivotal for the development of evidence-based policies and interventions to bridge the technological divide in the Nigerian education system.

Objectives of the Study

This study was conducted to thoroughly examine the current state of awareness, utilization, and integration of ChatGPT within the academic community of the Federal College of Education, Kontagora. The study was guided by the following objectives which were to:

1. assess the extent to which academic staff are aware of ChatGPT and its capabilities in enhancing educational processes.
2. determine the level of practical usage of ChatGPT among academic staff, and analyse how this varies across different disciplines and roles.
3. identify the factors influencing the adoption of ChatGPT, including familiarity with AI technologies, access to training opportunities, and perceived benefits.

4. examine the current integration of ChatGPT into various aspects of teaching, research, and administrative tasks within the institution.

Research Questions

In order to gain knowledge on the awareness and utilization of ChatGPT among academic staff at the Federal College of Education, Kontagora, the following research questions were set:

1. To what extent are academic staff at the Federal College of Education, Kontagora, aware of ChatGPT and its capabilities in enhancing educational processes?
2. What is the level of practical usage of ChatGPT among academic staff at the Federal College of Education, Kontagora, and how does it vary across different disciplines and roles?
3. What factors influence the adoption of ChatGPT among academic staff, including familiarity with AI technologies, access to training opportunities, and perceived benefits?
4. How is ChatGPT currently integrated into various aspects of teaching, research, and administrative tasks within the Federal College of Education, Kontagora?

Methodology

Research Design

This study utilised a descriptive survey research design to investigate the awareness and utilisation of ChatGPT among academic staff at the Federal College of Education, Kontagora, located in Niger State, Nigeria. The survey method was chosen to collect quantitative data from a large and diverse group of participants.

Population and Sample

The target population for this study comprised all academic staff members at the Federal College of Education, Kontagora. From this population of 251 academic staff members, a sample of 210 respondents was randomly selected. The sample was drawn from six distinct schools within the institution to ensure a representative distribution.

Instrumentation for Data Collection

Data collection was facilitated through a self-developed questionnaire consisting of 15 items. The questionnaire utilised a five-point Likert scale with response options ranging from "Strongly Disagree" to "Strongly Agree." The items were designed to elicit information regarding the awareness and practical usage of ChatGPT among the academic staff.

Reliability and Validation of Instrument

The initial draft of the questionnaire underwent content and face validation by experts in the field of measurement and evaluation. This validation process ensured the questionnaire's suitability, logical flow, and appropriate completion time. Additionally, a pilot study involving 20 academic staff members was conducted to assess the questionnaire's internal consistency, validity, reliability, and clarity. The pilot study achieved a 100% response rate. Reliability analysis using Cronbach's alpha demonstrated satisfactory reliability, with a value of 0.86.

Method of Data Collection

The finalised questionnaire was distributed to the 210 selected academic staff members across the six departments: Science (35 respondents), Education (35 respondents), Primary & Childhood (35 respondents), Arts & Social Sciences (35 respondents), Languages (35 respondents), and Vocational Studies (35 respondents). All 210 distributed questionnaires were successfully collected, organised, and prepared for data analysis.

Data Analysis

For data analysis, a simple percentage technique was employed to gauge the level of agreement or disagreement with the questionnaire items. A threshold of at least 50% agreement was set as the criterion for determining the majority opinion on each item, thereby addressing the research questions.

Data Analysis and Results

Research Question One:

To what extent are academic staff at the Federal College of Education, Kontagora, aware of ChatGPT and its capabilities in enhancing educational processes?

Table 1: Extent of awareness of ChatGPT and its capabilities in enhancing education processes.

SN	Items	Agree	Uncertain	Disagree	Decision
1	I am aware of ChatGPT and its capabilities in enhancing educational processes.	189(90%)	1(0.5%)	20(9.5%)	Agree (90%)
2	I have actively sought information about ChatGPT and its role in education.	76(36.2%)	0(0%)	134(63.8%)	Disagree (63.8%)
3	I believe that ChatGPT has the potential to significantly enhance educational processes.	169(80.5%)	3(1.43%)	38(18.1%)	Agree (80.5%)
4	I have engaged in discussions or training related to ChatGPT within my academic community.	109(51.9%)	0(0%)	101(48.1%)	Agree (51.9%)
5	I am willing to explore the integration of ChatGPT into my teaching or research practices.	170(80.1%)	2(0.96%)	38(18.1%)	Agree (80.1%)

The analysis in table 1 shows the response of the respondents on the extent to which academic staff at the FCE, kontagora were aware of ChatGPT and its capabilities in enhancing education process. The data reveals that majority of respondents (90%) were aware of ChatGPT and its capabilities in enhancing educational processes and only (9.5%) disagreed. Regarding the assertion that I have actively sought information about ChatGPT and its role in education, large proportion of the respondents (63.8) did not agree, (36.2%) of the respondents agreed. Interestingly, on the statement whether respondents believe that ChatGPT has the potential to enhance educational processes significantly, (80.5%) of the participants agreed while (18.1%) disagreed.

Regarding whether respondent engaged in discussions or training related to ChatGPT within academic community, more than half of the respondents (51.9%) express the view to have engaged in discussions or training related to ChatGPT within their academic community while (48.1%) hold contrary view. In respect of the assertion that, I am willing to explore the integration of ChatGPT into my teaching or research practices, the largest proportion of the respondents (80.1%) agreed while (18.1%) disagreed. The conclusion here suggests a high awareness level and a positive attitude towards ChatGPT's potential in education, with a substantial willingness to embrace its integration.

Research Question Two:

What is the level of practical usage of ChatGPT among academic staff at the Federal College of Education, Kontagora, and how does it vary across different disciplines and roles?

Table II: Level of practical usage of ChatGPT among academic staff at the Federal College of Education, Kontagora, and how does it vary across different disciplines and roles.

SN	Items	Agree	Uncertain	Disagree	Decision
1	I have practically used ChatGPT in my academic work.	57(27.1%)	1(0.5%)	152(72.4%)	Disagree (72.4%)
2	I often do you use ChatGPT for research, teaching, or administrative tasks?	30(14.3%)	0(0%)	180(85.7%)	Disagree (85.7%)
3	The level of practical usage of ChatGPT varies across different academic disciplines.	129(61.4%)	45(21.4%)	36(17.1%)	Agree (61.4%)
4	The level of practical usage of ChatGPT varies depending on the role within the institution.	102(48.6%)	30(14.3%)	78(37.1%)	Disagree (48.6%)
5	Overall, I believe that ChatGPT is a valuable tool for academic work at our institution.	82(39%)	78(37.1%)	50(23.8%)	Disagree (39%)

Table II provides insights into the practical usage of ChatGPT among academic staff at the Federal College of Education, Kontagora, and its variations across different academic disciplines and roles. On the assertion, of whether the respondents have practically used ChatGPT in their academic work, the data indicates that a minority (27.1%) of the surveyed academic staff agreed to have practically used ChatGPT in their academic work, while a much larger proportion (72.4%) disagreed. Furthermore, the respondents were asked on how often do they use ChatGPT for research, teaching, or administrative tasks, the majority of the respondents (85.7%) do not frequently use ChatGPT for research, teaching, or administrative tasks. The larger proportion of the respondent (61.4%) agreed with the statement that the level of practical usage of ChatGPT varies across different academic disciplines. With regards to the assertion that the level of practical usage of ChatGPT varies depending on the role within the institution, majority of the respondents (48%) agreed while (37.1%) disagreed on whether ChatGPT is a valuable tool for academic work at our institution, (39%) of the respondents agreed, (23.8%) disagreed while (37.1%) are uncertain. The analysis has made it known that; majority of the academic staff agreed on the issue of practical usage of ChatGPT among academic staff at the Federal College of Education, Kontagora, and how it vary across different disciplines and roles.

Research Question Three:

What factors influence the adoption of ChatGPT among academic staff?

Table III: Factors influence the adoption of ChatGPT among academic staff.

SN	Items	Agree	Uncertain	Disagree	Decision
1	I am familiar with AI technologies, including ChatGPT.	45(21.4%)	0(0.5%)	165(78.6%)	Disagree (78.6%)
2	I access to training opportunities related to ChatGPT have been readily available.	30(14.3%)	0(0%)	180(85.7%)	Disagree (85.7%)
3	I believe that the adoption of ChatGPT in academia can bring significant benefits.	89(42.4%)	65(31%)	56(26.7%)	Disagree (42.4%)
4	I have received adequate support and resources for integrating ChatGPT into my work.	14(6.7%)	0(0%)	196(39.3%)	Disagree (66.7%)
5	Overall, I am open to adopting ChatGPT in my academic practices and teaching methods.	82(39%)	58(27.6%)	70(33.3%)	Disagree (39%)

The table presents the respondents’ response on the factors that influences the adoption of ChatGPT among academic staff, including familiarity with AI technologies, access to training opportunities, and the perceived benefits. (78.6%) of the respondents made it known that they are not familiar with AI technologies, including ChatGPT. (21.4%) of the respondents made it known that they are familiar with AI technologies, including

ChatGPT. On the statement that Access to training opportunities related to ChatGPT has been readily available, majority of the respondents (85.7%) agreed and (14.3%) of the respondents disagreed that access to training opportunities related to ChatGPT has been readily available.

In respect of the assertion that the adoption of ChatGPT in academia can bring significant benefits, the largest proportion of the respondents (42.4%) agreed, (26.7%) of them did not agree while (31%) were uncertain. Regarding whether the respondents received adequate support and resources for integrating ChatGPT into work, (66.7%) of the respondents express the view that they receive adequate support and resources for integrating ChatGPT into work while (39.3%) of the respondents hold contrary view. Respondents were asked if they are open to adopting ChatGPT in academic practices and teaching methods, (39%) of them Agreed, (33.3%) of disagreed while (27.6%) of were uncertain. The analysis indicates that there are significant barriers to adoption, including limited familiarity with AI technologies, inadequate access to training, and uncertainty about the benefits of ChatGPT, as well as perceived deficiencies in support and resources, suggesting the need for more targeted efforts to promote adoption and address these barriers.

Research Question Four:

How is ChatGPT currently integrated into various aspects of teaching, research, and administrative tasks within the Federal College of Education, Kontagora?

Table IV: Integration of ChatGPT into various aspects of teaching, research, and administrative tasks within the Federal College of Education, Kontagora.

SN	Items	Agree	Uncertain	Disagree	Decision
1	ChatGPT is commonly used as a teaching aid or resource in classrooms.	4(1.91%)	3(1.4%)	203(96.7%)	Disagree (96.7%)
2	Academic staffs frequently employ ChatGPT for research-related tasks.	20(9.5%)	92(43.81%)	98(46.7%)	Disagree (46.7%)
3	ChatGPT plays a substantial role in streamlining administrative functions at our institution.	8(3.81%)	79(37.6%)	123(58.6%)	Disagree (58.6%)
4	There is a general awareness and acceptance of ChatGPT among academic staff.	86(41%)	35(16.7%)	89(42.4%)	Disagree (42.4%)
5	In your opinion, ChatGPT has positively impacted the overall academic environment.	11(5.29%)	16(7.6%)	183(87.1%)	Disagree (87.1%)

This table presents the respondents response on the current integration of ChatGPT into different aspects of teaching, research, and administrative tasks within the Federal College of Education, Kontagora. The data reveals a limited integration of ChatGPT in these areas, with only 1.91% of respondents agreeing that it is commonly

used as a teaching aid in classrooms. Similarly, the use of ChatGPT for research-related tasks is relatively low, with only 9.5% agreeing, while 3.81% agree that it plays a substantial role in streamlining administrative functions. Moreover, the majority of academic staff (42.4%) disagreed with the general awareness and acceptance of ChatGPT among their peers, and a substantial majority (87.1%) disagree that ChatGPT has positively impacted the overall academic environment. These results suggest that the current integration of ChatGPT into teaching, research, and administrative tasks at the institution is limited, and there is a notable lack of consensus regarding its positive impact. This underscores the need for further efforts to promote awareness and utilization of ChatGPT in these areas and to address the perceived lack of acceptance and impact

Summary of Finding

In this study, the academic staff of the Federal College of Education, Kontagora have a high degree of Knowledge of ChatGPT and its capabilities in enhancing education. The results suggest that while the majority of academic staff of the Federal College of Education are aware of ChatGPT and recognize its potential to enhance educational processes, there is a significant gap in proactive engagement. This aligns with the statement by Kandlhofer et al. (2023) that "Artificial Intelligence (AI) has become increasingly important, influencing many aspects of our lives," and that "large language models (like ChatGPT) have brought AI into the spotlight." The findings demonstrate a practical manifestation of AI's growing importance and influence. Despite high awareness and willingness to integrate ChatGPT, many staff members have not actively sought additional information or engaged in relevant training. This may be due to limited access to necessary hardware, software, internet connectivity, and clear demonstration of benefits.

The second conclusion showed that the practical usage of ChatGPT among academic staff is generally low, with many staff members at the Federal College of Education, Kontagora, not incorporating it frequently into their research, teaching, or administrative tasks. This agrees with Afonughe et al. (2021) findings regarding the limited implementation of AI chatbots in educational institutions in Nigeria. There is notable variation in ChatGPT usage across different academic disciplines, indicating that some fields may find it more applicable or beneficial than others. However, the difference in usage across various roles within the institution is less pronounced, suggesting that position or job function does not significantly influence how ChatGPT is utilised. Despite its potential, many staff members do not yet perceive ChatGPT as a valuable tool for their academic work, similar to the limited practical usage observed at other higher educational institutions, despite positive attitudes and awareness. One contributing factor could be the level of institutional support, such as access to resources, encouragement from administration, and integration into the curriculum, which might be lacking, hindering widespread adoption

The third conclusion showed that the primary factors influencing the adoption of ChatGPT among academic staff appear to be familiarity, training availability, belief in benefits, and support/resources. A majority of

academic staff are not familiar with ChatGPT, indicating a significant barrier to its adoption. Additionally, the lack of readily available training opportunities further hinders familiarity and confidence in using the technology. This further support the statement from the European Commission's Joint Research Centre in 2021, which underscores the challenges of inadequate acquaintance, access to training, and perceived benefits that need to be addressed to facilitate the widespread integration of AI in teaching and learning. The reason may stem from the fact that the authorities did not focus on increasing awareness and familiarity through comprehensive training programs, offering support systems, and clearly communicating the benefits and practical applications of ChatGPT in FCE, Kontagora

The comprehensive analysis undertaken in this study, as reflected in Tables IV unveils a consistent pattern of limited integration of ChatGPT into different facets of teaching, research, and administrative functions at the Federal College of Education, Kontagora. Across these areas, ChatGPT's utilization remains notably low, with minimal agreement on its use as a teaching aid, for research purposes, and for administrative streamlining. Moreover, a substantial number of academic staff expresses disagreement with ChatGPT's positive impact on the academic environment. These findings collectively underscore the imperative need for more vigorous initiatives to enhance awareness, practical application, and acceptance of ChatGPT across various dimensions of academic work within the institution, as it currently falls short of achieving widespread integration and positive recognition

Conclusion

In conclusion, this study has revealed that academic staff of the Federal College of Education, Kontagora, exhibits a high level of awareness of ChatGPT, an AI technology with the potential to enhance education. However, the utilization and integration of ChatGPT into various facets of academic work remain limited. Challenges such as a lack of training, perceived benefits, and resource support act as significant barriers to its adoption within the institution. These findings underscore the need for targeted initiatives to enhance awareness, practical application, and acceptance of ChatGPT in academia. The development of evidence-based policies and interventions is crucial to bridge the technological divide and facilitate the integration of AI tools in teaching, research, and administrative functions, ultimately contributing to the improvement of teacher training and the education system in Nigeria

Recommendations

Based on the above findings, the following recommendations are hereby proffered:

1. Academic institutions, including the Federal College of Education, Kontagora, should develop and implement comprehensive AI training programs for academic staff. These programs should focus on

enhancing their understanding of AI technologies, including ChatGPT, and their practical application in teaching, research, and administrative tasks.

2. Regular workshops, seminars, and awareness campaigns should be organized to educate academic staff about the benefits and potential of AI technologies in education. These initiatives can serve to dispel misconceptions and reservations surrounding AI and promote its adoption
3. To overcome the perceived barriers to AI adoption, institutions should ensure that academic staffs have access to the necessary resources, including AI tools and support services. This can involve investments in infrastructure, software, and technical support
4. Academic institutions should consider integrating AI-related content and projects into the curriculum, especially in teacher training programs. This ensures that future educators are well-prepared to use AI tools in their classrooms.
5. Academic institutions should collaborate with AI experts and professionals in the field in-order to help them stay up-to-date with the latest developments and best practices in AI integration. Such collaborations can provide valuable insights and support in implementing AI technologies effectively.

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