



Artificial Intelligence integration in Student Counseling among Guidance and Counseling Lecturers in Nigeria Universities

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Abstract

In the rapidly evolving landscape of higher education, Artificial Intelligence (AI) is emerging as a transformative force, presenting unprecedented opportunities to revolutionize student support services. This study investigated the integration of AI-driven tools specifically chatbots and virtual counseling platforms in student counseling services across Nigerian universities. The research focused on assessing the extent of adoption, effectiveness, and challenges associated with AI applications in guidance and counseling. The study employed a descriptive survey design, with a population comprising guidance and counseling lecturers from 60 universities across Nigeria's six geopolitical zones. A stratified random sampling technique was used to select 300 respondents. Data were collected using a structured 20-item questionnaire titled "Artificial Intelligence Integration in Student Counseling Questionnaire (AIISCQ)," validated by experts in Educational Technology and Counseling Psychology. The instrument, based on a 4-point Likert scale (Very High=4 to Very Low=1), demonstrated high reliability with Cronbach's Alpha coefficients of 0.83 and 0.85. Descriptive statistics (mean and standard deviation) were used for data analysis, with a benchmark mean of 2.50 distinguishing between high and low adoption levels. Findings revealed significant AI adoption in specific counseling functions, including at-risk student identification (Mean=2.92), multilingual support (Mean=2.89), and automated urgent case alerts (Mean=3.02). However, limitations persisted in areas requiring human nuance, such as mental health screening (Mean=2.45) and video counseling (Mean=2.38). The study concluded that while AI enhances counseling accessibility and efficiency, its optimal use requires balanced integration with human expertise. Key recommendations include institutional investments in AI infrastructure, counselor training programs in digital competencies, and the development of national ethical frameworks for AI in counseling. These findings provide critical insights for universities, policymakers, and counseling professionals navigating the digital transformation of student support services in Nigeria's higher education sector.

Keywords: Artificial Intelligence, student counseling, chatbots, virtual counseling platforms, Nigerian universities, guidance and counseling

Introduction

Across the globe, education is recognized as a vital factor for development, both in developed and developing nations. The progress of any country is intrinsically tied to the strength of its educational system, as no nation can advance without a solid foundation in education. Madukwe et al. (2024) emphasize that education holds significant importance in contemporary societies, serving as a vital means for generating, applying, and sharing knowledge while facilitating social transformation. In Nigeria, higher education plays a crucial role in shaping future leaders, fostering innovation, and equipping students with the skills needed for personal and professional success. However, the increasing complexity of student needs, ranging from academic pressures to mental health challenges, demands more efficient and innovative approaches to student counseling.

Artificial Intelligence (AI) represents a transformative technological advancement that simulates human intelligence through machine learning, natural language processing, and predictive analytics (Igbokwe, 2023). AI has revolutionized various sectors, including healthcare, finance, and education, by automating processes, enhancing decision-making, and providing personalized solutions. In the educational context, AI-powered tools such as chatbots and virtual counseling assistant platforms are increasingly being adopted to improve student support services. These technologies offer real-time, data-driven interventions, ensuring that students receive timely and tailored guidance.

Student counseling is a critical component of the educational system, aimed at addressing students' academic, emotional, and career-related challenges. Traditional counseling methods, while effective, often struggle to meet the growing and diverse needs of students due to limited resources and high counselor-to-student ratios (Oyebisi et al., 2024). The integration of AI in student counseling presents an opportunity to enhance service delivery by providing scalable, accessible, and personalized support. AI-driven counseling tools can analyze student data to identify at-risk individuals, offer instant responses to common queries, and facilitate remote counseling sessions, thereby bridging gaps in traditional counseling frameworks.

Guidance and counseling lecturers in Nigerian universities play a pivotal role in shaping the psychological and academic well-being of students. These professionals are responsible for offering career guidance, emotional support, and academic counseling to help students navigate university life successfully. However, the increasing student population and limited human resources often strain their capacity to provide individualized attention. The adoption of AI-powered counseling tools can alleviate this burden by automating routine tasks, enabling lecturers to focus on more complex student needs while ensuring continuous support.

A chatbot is an AI-based conversational agent designed to simulate human interaction through text or voice responses (Rakap, 2023). In student counseling, chatbots serve as virtual assistants, providing instant responses to frequently asked questions, offering mental health resources, and guiding students through academic processes. The integration of chatbots in student counseling ensures 24/7 accessibility, reduces response delays, and enhances student engagement, particularly in environments where human counselors are overstretched.

Similarly, a virtual counseling assistant platform is an AI-driven system that facilitates remote counseling sessions, tracks student progress, and provides data-driven recommendations for interventions (Garcia & Miller, 2022). The integration of virtual counseling assistant platforms into student counseling enables universities to offer scalable and flexible support services, ensuring that students in remote or underserved locations can access professional guidance. These platforms also assist counselors in monitoring student well-being through predictive analytics, allowing for early identification and intervention in cases of academic struggles or mental health concerns.

Despite the potential benefits of AI in student counseling, challenges such as data privacy, ethical concerns, and the need for human oversight remain critical considerations (Chen & Roberts, 2023). While AI can enhance efficiency, it should complement rather than replace the empathetic and personalized approach of human counselors. In Nigeria, where university counseling services are often underfunded and understaffed, the strategic integration of AI tools could revolutionize student support systems, ensuring that guidance and counseling lecturers can deliver more effective and inclusive services.

Existing research highlights the growing influence of AI in education, yet few studies explore its application in student counseling within Nigerian universities. This study seeks to fill this gap by examining the extent of AI integration in student counseling among guidance and counseling lecturers in Nigerian universities, providing insights into how these technologies can be leveraged to improve student support services in higher education institutions.

Statement of the Problem

Student counseling is a critical component of university education, providing essential support for academic success, emotional well-being, and career development. In Nigerian universities, guidance and counseling lecturers play a pivotal role in addressing students' psychological, social, and academic needs. However, the increasing student population, limited counseling personnel, and resource constraints have made it difficult to deliver efficient and personalized counseling services. Traditional counseling methods, while valuable, often struggle to meet the growing demand, leading to delayed responses, limited accessibility, and inadequate follow-up support.

Recent advancements in Artificial Intelligence (AI) present innovative opportunities to enhance student counseling services. AI-powered tools such as chatbots and virtual counseling assistant platforms can provide instant support, automate routine inquiries, and offer data-driven interventions. However, the extent to which these technologies have been integrated into student counseling in Nigerian universities remains unclear. While some institutions may be experimenting with AI-driven counseling solutions, there is limited empirical evidence on their adoption, effectiveness, and challenges in the Nigerian higher education context.

This study seeks to investigate the current state of AI integration in student counseling by addressing the following research questions:

1. To what extent are chatbots integrated into student counseling in Nigerian universities?

2. What is the level of adoption of virtual counseling assistant platforms in student counseling services in Nigerian universities?

The findings will provide insights into the feasibility, benefits, and challenges of AI-driven counseling tools, helping policymakers, university administrators, and counseling professionals make informed decisions on leveraging technology to improve student support services. Without a clear understanding of AI's role in counseling, Nigerian universities risk falling behind in adopting innovative solutions that could enhance student welfare and academic success. Therefore, this study aims to bridge this knowledge gap and explore how AI can be effectively harnessed to strengthen student counseling in Nigerian higher education institutions.

Methodology

The study covered the six geopolitical zones of Nigeria: North-West, North-East, North-Central, South-West, South-East, and South-South. A descriptive survey research design was adopted for this study. The choice of survey design was justified on the basis that it sought to examine the relationship between variables and provide insights into the integration of Artificial Intelligence (AI) in student counseling among guidance and counseling lecturers in Nigerian universities.

The study population comprised all guidance and counseling lecturers in Nigerian universities across the six geopolitical zones. A stratified random sampling technique was used to ensure representation from each zone. From a total of 120 universities (comprising federal, state, and private institutions), a sample of 60 universities was selected (10 per geopolitical zone). Within each selected university, five (5) guidance and counseling lecturers were randomly chosen, resulting in a total sample size of 300 respondents. This approach ensured a balanced and representative sample for the study.

Data were collected using a structured questionnaire titled “Artificial Intelligence (AI) Integration in Student Counseling Questionnaire (AIISCQ).” The instrument consisted of 30 items divided into two sections: Section A captured demographic information of respondents (e.g., university type, years of experience, geopolitical zone). Section B assessed the extent of AI integration in student counseling, focusing on key areas such as the use of chatbots and virtual counseling platforms with 20 items. The questionnaire was structured using a modified 4-point Likert scale with the following response options: Very High Extent (VH) = 4, High Extent (H) = 3, Low Extent (L) = 2, Very Low Extent (VL) = 1. The instrument was validated by three experts in the fields of Computer Education, Guidance and Counseling, and Measurement and Evaluation. Their feedback was used to refine the questionnaire for clarity and relevance. To establish reliability, a pilot study was conducted with 30 guidance and counseling lecturers who were not part of the main study. Cronbach’s Alpha was used to test internal consistency, yielding reliability coefficients of 0.83 and 0.85 for the different sections, indicating high reliability.

Data were collected through both physical and electronic means. Hard copies of the questionnaire were administered in universities where researchers had direct access, while Google Forms were used for lecturers in distant institutions. Follow-up reminders were sent to ensure a

high response rate. Descriptive statistics (mean and standard deviation) were used to analyze the data. A criterion mean of 2.50 was adopted for decision-making: Mean scores ≥ 2.50 indicated a high extent of AI integration. Mean scores < 2.50 indicated a low extent of AI integration.

Results

To what extent are chatbots integrated into student counseling in Nigerian universities?

Table 1: Descriptive Statistics of the extent of Chatbot Integration in Student Counseling (N=300)

S/N	Chatbot Functionality Item	Mean	Std. Dev.	Decision
1	Instant responses to general inquiries	3.12	0.81	High
2	24/7 mental health screening	2.45	0.92	Low
3	Course registration guidance	2.38	0.85	Low
4	Personalized career guidance	3.05	0.76	High
5	Collecting student concerns for follow-up	2.42	0.88	Low
6	Integration with university systems	3.18	0.72	High
7	Multilingual support	2.89	0.81	High
8	Providing self-help resources	2.94	0.79	High
9	Maintaining data confidentiality	3.01	0.75	High
10	Reducing response time	2.97	0.83	High

The results show that items 1, 4, 6, 7, 8, 9, and 10 have mean scores above the benchmark of 2.50, indicating significant integration of chatbot technologies in these specific counseling functions within Nigerian universities. These findings demonstrate that chatbots are effectively being used to provide immediate responses to student inquiries, deliver personalized career guidance, integrate with institutional systems, offer multilingual support, provide self-help resources, maintain data security, and improve response efficiency. The high adoption in these areas suggests that universities recognize chatbots' potential to enhance counseling accessibility and operational efficiency, particularly for routine queries and standardized support services.

However, items 2, 3, and 5 scored below the 2.50 threshold, revealing limitations in chatbot applications for mental health screening, academic planning guidance, and student concern documentation. These gaps suggest that while chatbots are well-utilized for informational and transactional purposes, their application in more complex counseling domains requiring human judgment and emotional intelligence remains underdeveloped. The lower scores for mental health screening (2.45) and course registration guidance (2.38) particularly highlight the challenges in implementing AI for sensitive or nuanced student support needs. This pattern indicates that while Nigerian universities are making progress in adopting basic chatbot functionalities, there is still

substantial room for improvement in deploying these tools for more sophisticated counseling interventions. The results collectively paint a picture of selective but growing AI integration, where chatbots are successfully handling standardized tasks but have yet to fully replace or augment human counselors in areas requiring deeper interpersonal engagement and professional expertise. What is the level of adoption of virtual counseling assistant platforms in student counseling services in Nigerian universities?

Table 2: Descriptive statistics of the level of adoption of virtual counseling platforms in Nigerian Universities (N=300)

S/N	Virtual Platform Functionality Item	Mean	Std. Dev.	Decision
1	Scheduled video counseling sessions	2.38	0.85	Low
2	AI identification of at-risk students	2.92	0.78	High
3	Asynchronous secure messaging	2.87	0.81	High
4	Accessibility for students with disabilities	2.95	0.76	High
5	Automated progress reports	2.42	0.88	Low
6	AI-recommended counseling approaches	2.89	0.79	High
7	Integration with academic records	2.35	0.91	Low
8	Group counseling/workshop capabilities	2.97	0.83	High
9	AI alerts for urgent cases	3.02	0.74	High
10	Automated reminders to reduce no-shows	2.94	0.80	High

The result of the analysis in Table 2 shows that items 2, 3, 4, 6, 8, 9, and 10 have mean scores above the average mean of 2.50. This demonstrates that virtual counseling platforms are being effectively adopted in Nigerian universities for specific functions including identifying at-risk students through AI analytics, providing accessible counseling options for students with disabilities, enabling asynchronous communication, recommending tailored counseling approaches, facilitating group sessions, flagging urgent student cases, and reducing appointment no-shows through automated systems. These findings indicate that universities are leveraging virtual platforms' technological capabilities to enhance counseling reach, personalization, and efficiency, particularly in data-driven student support and accessibility features.

However, items 1, 5, and 7 have mean scores below the 2.50 threshold, revealing limited adoption in areas such as scheduled video counseling, automated progress reporting, and integration with academic record systems. This suggests that while Nigerian universities are implementing advanced AI features of virtual platforms, they face challenges in fully integrating these systems with existing university infrastructure and in transitioning traditional counseling modalities to virtual formats. The particularly low score for scheduled video sessions (2.38) may reflect technical limitations, counselor resistance, or student preferences for in-person interactions.

Similarly, the lack of integration with academic records (2.35) points to systemic barriers in data sharing across university departments. These gaps indicate that while virtual platforms are making significant inroads in specialized AI applications, their comprehensive implementation across all counseling functions remains incomplete, with traditional service models still dominating certain aspects of student support. The results collectively suggest a transitional phase where innovative technologies coexist with conventional practices, with full integration contingent on addressing technical, organizational, and cultural adoption barriers.

Discussion of Findings

The finding from data analysis on Table 1 showed a significant level of chatbot integration in student counseling services across Nigerian universities. This finding may be attributed to several factors, including the growing recognition of chatbots' potential to provide immediate, round-the-clock support to students, the relative ease of implementing basic chatbot functionalities, and the increasing pressure on university counseling services to handle large student populations with limited resources. The high adoption rates for functions like instant responses to inquiries (3.12), system integration (3.18), and data confidentiality (3.01) suggest that universities are prioritizing efficiency, security, and accessibility in their counseling services. This trend aligns with global movements toward digital transformation in higher education, where institutions are increasingly leveraging technology to enhance student support systems.

The results indicate that Nigerian universities are particularly successful in implementing chatbots for standardized, information-based services such as answering frequently asked questions and providing basic career guidance. These findings support the argument that chatbots excel in handling routine queries, thereby freeing up human counselors to focus on more complex student needs. However, the lower adoption rates for mental health screening (2.45) and academic planning guidance (2.38) reveal important limitations in current implementations. These gaps may stem from technological constraints in handling sensitive or nuanced interactions, lack of training among counseling staff, or student preferences for human connection in more personal matters. This pattern echoes the observations of Smith and Anderson (2023), who noted that while AI tools are effective for informational and transactional services, they often struggle to replicate the empathy and contextual understanding of human counselors.

The successful integration of multilingual support (2.89) and self-help resources (2.94) demonstrates Nigerian universities' efforts to address the diverse needs of their student populations. These implementations likely respond to the country's multilingual context and the growing demand for accessible mental health resources. The findings also highlight the importance Nigerian institutions place on data security, as evidenced by the high score for confidentiality maintenance (3.01), which aligns with global concerns about ethical AI use in sensitive domains like student counseling.

These results have important implications for the future of counseling services in Nigerian higher education. While chatbots are clearly enhancing service delivery in specific areas, the mixed adoption patterns suggest that universities are still navigating the balance between technological

efficiency and human-centered care. The findings underscore the need for continued investment in more sophisticated AI solutions that can handle complex counseling scenarios while maintaining the personal touch that students often require. Additionally, the results point to potential disparities in technological infrastructure and digital literacy across institutions, emphasizing the importance of equitable resource distribution and comprehensive training programs for both counseling staff and students. As Nigerian universities continue to expand their use of AI in student services, these findings provide valuable insights for policymakers and administrators seeking to optimize their counseling support systems while addressing implementation challenges.

The finding from data analysis on Table 2 showed a significant level of adoption of virtual counseling assistant platforms in Nigerian universities. This finding may be due to the increasing recognition among university administrators and counseling departments of the potential of these platforms to expand access to counseling services, particularly for students in remote locations or those requiring flexible support outside traditional hours. The high adoption rates for AI-driven identification of at-risk students (2.92), accessibility features for students with disabilities (2.95), and urgent case alerts (3.02) reflect Nigerian universities' commitment to inclusive and proactive student support systems. These results suggest that institutions are prioritizing technologies that can help bridge gaps in counseling coverage and provide timely interventions for vulnerable student populations.

The successful implementation of group counseling capabilities (2.97) and automated reminders (2.94) demonstrates how virtual platforms are being leveraged to enhance the scalability and efficiency of counseling services. This aligns with the growing student populations in Nigerian universities and the consequent strain on counseling resources. The findings indicate that these platforms are particularly valuable for their ability to facilitate both individualized and group support while maintaining consistent engagement through automated systems. However, the lower adoption rates for scheduled video counseling (2.38) and integration with academic records (2.35) reveal persistent challenges in fully transitioning traditional counseling modalities to virtual formats and achieving seamless data integration across university systems. These gaps may stem from technical limitations, bandwidth constraints, or cultural resistance to fully virtual counseling sessions.

This pattern of adoption reflects a strategic approach where Nigerian universities are selectively implementing platform features that offer the most immediate benefits while working to overcome barriers in more complex areas of integration. The findings support the position of Garcia and Miller (2022) that virtual platforms can enhance counselor-student relationships through continuous, technology-mediated communication. The results also corroborate Oyeibisi et al.'s (2024) assertion that AI-enhanced platforms are particularly effective in identifying at-risk students who might otherwise be overlooked. However, the limited integration with academic records suggests that Nigerian universities have yet to fully realize the potential of comprehensive data analytics in student support, as envisioned by Wang et al. (2020).

The implications of these findings are significant for the future of student counseling in Nigerian higher education. While virtual platforms are clearly transforming service delivery in key

areas, their uneven adoption across different functions suggests the need for more holistic implementation strategies. Universities may need to invest in better technical infrastructure, provide more training for counseling staff, and develop clearer protocols for data sharing across departments. The results also highlight the importance of maintaining a balance between technological efficiency and the human elements of counseling, as emphasized by Taylor (2022). As Nigerian universities continue to navigate the digital transformation of student services, these findings provide valuable insights for optimizing virtual counseling platforms while addressing current limitations in their implementation and integration.

Conclusions

The study concluded that the integration of Artificial Intelligence (AI) tools significantly enhances student counseling services in Nigerian universities. This demonstrates that adopting AI-powered chatbots and virtual counseling platforms can transform service delivery by improving accessibility, personalizing support, and enabling data-driven interventions. The findings suggest that these technologies are particularly effective in providing 24/7 automated responses, identifying at-risk students, and offering multilingual support, which can lead to more timely and equitable counseling services.

However, the study also revealed limitations in current AI implementations, particularly in handling complex counseling scenarios requiring human empathy and nuanced understanding. This underscores the need for AI solutions to complement rather than replace human counselors, especially in sensitive areas like mental health support and academic advising. The gaps in system integration and video counseling adoption further indicate that while Nigerian universities are making progress in digital transformation, full implementation requires addressing technical, cultural, and infrastructural challenges.

These conclusions highlight the transformative potential of AI in university counseling services while emphasizing the importance of balanced, ethical implementation. The findings suggest that with proper training, infrastructure development, and policy frameworks, AI technologies can significantly augment counseling services to better meet the diverse needs of Nigeria's growing student population while maintaining the essential human elements of effective counseling.

Implications of the Study for Guidance and Counseling Practice

The findings of this study carry significant implications for the field of guidance and counseling in Nigerian universities and beyond. First, the demonstrated effectiveness of AI tools in certain counseling functions suggests a need for counselor training programs to incorporate digital literacy and AI competency components. Counselor education curricula should be revised to prepare future practitioners for technology-enhanced counseling environments, equipping them with skills to interpret AI-generated data and integrate digital tools ethically into their practice.

For current counseling practitioners, the study highlights the importance of adapting to technological advancements while maintaining core counseling competencies. The successful

implementation of chatbots for routine inquiries and virtual platforms for at-risk student identification indicates that counselors can leverage these tools to extend their reach and efficiency. However, the limitations observed in more complex counseling scenarios reinforce the irreplaceable value of human counselors in providing empathetic, nuanced support - suggesting AI should be viewed as a supplement rather than replacement for human expertise.

At an institutional level, the findings underscore the need for universities to develop comprehensive technology integration strategies for counseling centers. This includes investing in infrastructure, establishing clear protocols for AI use, and creating support systems to help both counselors and students navigate these technological transitions. The study particularly emphasizes the importance of maintaining ethical standards and confidentiality in digital counseling environments.

For professional counseling associations in Nigeria, these results suggest the need to develop guidelines and standards for AI adoption in counseling practice. This could include ethical frameworks for data usage, competency standards for digital counseling, and best practice guidelines for human-AI collaboration in student support services.

The study also has implications for student development approaches. The ability of AI tools to provide 24/7 support and identify at-risk students early suggests potential for more proactive, preventive counseling models. However, the findings caution against over-reliance on technology, emphasizing the continued importance of fostering genuine counselor-student relationships and campus support networks.

The mixed adoption patterns observed in the study highlight the need for ongoing research and evaluation as AI technologies evolve in counseling contexts. Future studies should examine long-term impacts on counseling outcomes, student satisfaction, and the changing role of counselors in technology-enhanced environments to guide evidence-based implementation strategies.

Recommendations

Based on the study's findings, the following recommendations are made:

1. Nigerian universities should prioritize comprehensive training programs for counseling staff to enhance their digital competencies in utilizing AI-powered tools. These programs should focus on both technical skills for operating chatbots and virtual platforms, as well as strategies for integrating AI insights into traditional counseling approaches.
2. University administrations should invest in upgrading technological infrastructure to support effective implementation of virtual counseling platforms. This includes ensuring reliable internet connectivity, providing necessary hardware, and developing secure data management systems to protect student confidentiality.
3. The National Universities Commission (NUC) should establish clear guidelines and ethical frameworks for AI integration in student counseling services. These policies should address data privacy concerns, define appropriate use cases for AI tools, and maintain standards for human oversight in counseling processes.

4. Universities should adopt a phased implementation approach for AI counseling tools, beginning with pilot programs that allow for continuous evaluation and improvement. This strategy should include feedback mechanisms from both students and counselors to refine the technologies based on user experiences.
5. Inter-university collaborations should be encouraged to share best practices and develop standardized AI solutions for student counseling. Such partnerships could reduce development costs and create more robust systems through pooled expertise and resources.
6. Counseling departments should maintain a balanced service model that combines AI tools with traditional counseling methods, ensuring that technology enhances rather than replaces the human elements of emotional support and personalized guidance that are crucial for effective student counseling.

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