Prestige Journal of Counselling Psychology, Vol. 9, No. 1, March 2026 ISSN: 2651-5687 (Print)
A publication of the Association for the Promotion of Innovation in Education (APIE) ISSN: 2651-5709 (Online)

Integrating AI into Guidance and Counselling Practices in Nigeria: Analyzing Benefits, Challenges, and Practical Implications for Secondary School Setting

Osita Ernest Igbe, Ph.D
Department of Psychological Foundation
Abia State University, Uturu
osy.igbe@gmail.com

Abstract
This study investigated the integration of Artificial Intelligence (AI) into guidance and counselling practices within Nigerian secondary schools, aiming to identify potential benefits, analyze associated challenges, explore practical implications for key stakeholders, and propose integration strategies. A sequential explanatory mixed-methods design was employed, involving a quantitative survey of 250 counsellors and qualitative interviews and focus group discussions with counsellors, administrators, and students in Rivers State. Data were analyzed using descriptive and inferential statistics and thematic analysis. Findings revealed perceived benefits including increased efficiency ($\bar{x}$ =4.25) and improved accessibility ($\bar{x}$=4.10). Major challenges included inadequate technological infrastructure ($\bar{x}$ =4.50), insufficient funding ($\bar{x}$ =4.45), digital literacy gaps ($\bar{x}$ =4.30), and ethical concerns. Practical implications suggest a necessary shift in counsellor roles and a critical need for school administration to develop robust policies and allocate resources. The study recommends that policymakers should prioritize investment in technological infrastructure and comprehensive digital literacy training for all stakeholders.

Keywords: artificial intelligence, guidance and counselling, secondary schools, technology acceptance, digital literacy.

Introduction
Every nation that is committed to national development pays premium attention to what can enhance the realization of educational goals; one of which is guidance and counselling. Guidance and counselling are vital for Nigerian secondary school students' academic, career, and personal development (Okonkwo & Eze, 2019). However, current practices face severe limitations, including high student-counsellor ratio, inadequate resources, and time constraints, hindering effective service delivery (Adeyemi & Ojo, 2020; National Association of Professional Counsellors, 2021). Artificial Intelligence (AI) is transforming various sectors globally, offering capabilities such as automation, data analysis, and personalization (Russell & Norvig, 2010). Despite growing interest in AI's potential for

educational support services, a significant gap exists in understanding its practical integration into Nigerian secondary school guidance and counselling, particularly given unresolved concerns about ethics, data privacy, and cultural relevance (Eze & Okoro, 2021; UNESCO, 2022; UCANWEST, 2024).

The theoretical foundation of this study draws on three complementary frameworks. The Technology Acceptance Model (TAM), developed by Davis (1989), posits that individuals' intention to use technology is determined by perceived usefulness and perceived ease of use. In this context, perceived usefulness refers to counsellors' belief that AI can improve their efficiency and diagnostic capabilities, while perceived ease of use relates to the simplicity of operating AI systems. Extensions of TAM, including the Unified Theory of Acceptance and Use of Technology (UTAUT), further incorporate social influence and facilitating conditions that are particularly relevant in Nigeria, where peer norms and support infrastructure critically affect adoption (Venkatesh et al., 2003). Complementing TAM, Diffusion of Innovation Theory (DIT) by Rogers (2003) explains how innovations spread through social systems, identifying relative advantage, compatibility, complexity, trialability, and observability as key adoption determinants. For AI in counselling, compatibility with existing school routines and the observability of tangible benefits are especially critical for encouraging broader uptake.

A Human-Centered Design (HCD) approach further ensures that AI tools are developed with input from counsellors, students, parents, and administrators, keeping solutions ethically sound, culturally appropriate, and genuinely beneficial (Gattupalli & Maloy, 2024; Shneiderman, 2022). These frameworks are complemented by established counselling theories: while AI cannot replicate the empathy and relational depth central to Person-Centred Therapy (Rogers, 1951), it can support structured interventions such as those found in Cognitive Behavioural Therapy, assist with career assessments, and free counsellors to concentrate on complex, relational, and crisis-oriented work (Fitzpatrick et al., 2017).

The formal integration of guidance and counselling into Nigerian education dates to the National Policy on Education of 1977, which mandated its provision at all school levels (Federal Ministry of Education, 2013). Despite this policy imperative, implementation remains severely constrained. A single counsellor may be responsible for hundreds or even thousands of students, rendering individualized attention virtually impossible (Adeyemi & Ojo, 2020). Schools also suffer from inadequate funding, absent of counselling offices, a dearth of modern assessment tools, and counsellors burdened with teaching duties (National

Association of Professional Counsellors, 2021). Societal stigma surrounding mental health further reduces service utilization (Eze & Okoro, 2021). Globally, AI application in education - including adaptive learning platforms, intelligent tutoring systems, automated assessment, and predictive analytics for identifying at-risk students - demonstrates transformative potential (Holmes et al., 2019; Yang et al., 2021). In guidance and counselling specifically, AI-powered career assessment tools, mental health chatbots such as Woebot, and virtual reality career simulations have been piloted internationally with promising results for accessibility, efficiency, and personalization (De Nieva et al., 2020; Oregon State University, 2025; Lopez, 2023). However, challenges including algorithmic bias, data privacy risks, the irreplaceable value of human empathy, infrastructure costs, and the need for extensive training recur throughout the literature (Baker & Hawn, 2021; Plakun, 2025; Upheal, 2025).

In Nigeria, technology adoption in education is hampered by inconsistent electricity supply, limited internet connectivity, shortage of devices in public schools, and wide disparities in digital literacy (Nwokedi & Agwagah, 2021; Olawale & Raji, 2021). Government initiatives such as the Smart School Project acknowledge technology's importance but have suffered inconsistent implementation and sustainability (Chaman Law Firm, 2024). Attitudes toward adoption are mixed: enthusiasm among younger educators coexists with skepticism driven by concerns about job displacement, tool complexity, and the cultural primacy of human relationships in teaching and counselling (DergiPark, 2024; Okon & Udo, 2021). Despite growing general discussions of AI in Nigerian education, the literature lacks empirical studies specifically examining the benefits, challenges, and practical implications of counselling-focused AI tools within this unique socio-cultural and economic context. International findings cannot be directly transposed due to fundamental differences in infrastructure, funding models, cultural norms, and regulatory frameworks (UNESCO, 2022). This study therefore addresses that gap, generating context-specific insights and actionable recommendations for policy and practice in Nigerian secondary school guidance and counselling.

Research questions

This study addresses the following research questions:

1. What are the perceived benefits of integrating AI into guidance and counselling practices in Nigerian secondary schools?
2. What are the major challenges anticipated in integrating AI into guidance and counselling practices in Nigerian secondary schools?

3. What are the practical implications for secondary school counsellors, students, and school administration in Nigeria when AI is integrated into guidance and counselling?
4. What strategies can be proposed to facilitate the effective and ethical integration of AI in guidance and counselling in Nigerian secondary schools?

Methodology

This study adopted a sequential explanatory mixed-methods research design, involving an initial quantitative phase using survey to gather broad data on perceived benefits and challenges, followed by a qualitative phase of in-depth interviews and focus group discussions (FGDs) to explore practical implications and ethical considerations. This design provides a comprehensive understanding by first establishing what the issues are, then exploring how and why they manifest within the Nigerian context (Creswell & Plano Clark, 2018).

The target population comprised professional guidance counsellors, school administrators (principals and vice-principals), and senior secondary school students in public and private secondary schools in Rivers State, Nigeria. Rivers State was selected for its diverse educational landscape that offers a representative cross-section of schools. A multi-stage sampling procedure was employed: stratified random sampling selected schools across the state's three senatorial districts, after which all available professional guidance counsellors in those schools were included in the quantitative survey. For the qualitative phase, purposive sampling selected counsellors, administrators, and students able to provide rich, contextually grounded data. Quantitative sample size was determined using Yamane's (1967) formula, yielding 250 respondents, while qualitative sampling continued until theoretical saturation was reached (Glaser & Strauss, 1967).

Two instruments were used. The "AI Integration in Guidance and Counselling Survey (AIGCS)" comprised sections on demographics, perceived benefits, perceived challenges (both on a 5-point Likert scale), and technological infrastructure. Semi-structured interview guides and FGD protocols, consisting of open-ended questions, explored practical implications and ethical concerns (Kvale & Brinkmann, 2009). Content validity was established through expert review by three guidance and counselling psychologists and two AI-in-Education experts from Nigerian universities, whose feedback informed revisions for clarity and contextual appropriateness. Reliability was assessed via a 30-respondent pilot study, yielding Cronbach's Alpha of 0.82 for Perceived Benefits and 0.79 for Perceived

Challenges, indicating good internal consistency (Hair et al., 2010). Inter-coder agreement was used to enhance reliability for qualitative data.

Data collection commenced after obtaining ethical approval from the university's Institutional Review Board and the Rivers State Ministry of Education. Informed consent was secured from all participants, with questionnaire distributed both physically and online; interviews and FGDs were conducted in-person over approximately eight weeks. Quantitative data were analyzed using descriptive statistics including frequencies, mean and standard deviation; via SPSS version 26.0. Qualitative data were analyzed through thematic analysis (Braun & Clarke, 2006), with recurring patterns coded and grouped into overarching themes. Anonymity, confidentiality, and the right to withdraw were upheld throughout.

Presentation of results

This section presents findings sequentially, addressing each research question in turn. Quantitative data from the AIGCS are summarized using descriptive statistics and illustrated through tables; qualitative data from interviews and FGDs are presented thematically, with participants' quotes providing contextual depth.

Research question 1: What are the perceived benefits of integrating AI into guidance and counselling practices in Nigerian secondary schools?

Table 1 presents mean and standard deviation scores for perceived benefits of AI integration as reported by guidance counsellors (N=250).

Table 1: Perceived benefits of AI integration in Guidance and Counselling (N=250)

Perceived benefits	Mean	SD	Decision
Increased efficiency in routine tasks	4.25	0.78	Agreed
Improved accessibility to counselling services	4.10	0.85	Agreed
Enhanced data analysis for decision-making	4.05	0.75	Agreed
Provision of personalized guidance	3.98	0.80	Agreed
Reduction of counsellor workload	3.85	0.92	Agreed
Support for career exploration	3.70	0.95	Agreed

Findings indicate a strong consensus on the potential benefits of AI. "Increased efficiency in routine tasks" ($\bar{x}$=4.25) was rated highest, with counsellors noting that AI could automate scheduling, record management, and information dissemination. This was also captured in one participant's remark: "If AI can handle the paperwork, I can spend more time actually talking to students who need it" (Counsellor A, Interview). "Improved accessibility" ($\bar{x}$=4.10) was also highly rated; participants envisioned AI-powered chatbots providing 24/7 preliminary support, with one student affirming, "Sometimes you just have a quick question or don't want to bother the counsellor, an AI could help with that, even at home" (Student B, FGD). "Enhanced data analysis for decision-making" ($\bar{x}$=4.05) was viewed as enabling proactive identification of at-risk students, while "Provision of personalized guidance" ($\bar{x}$=3.98) was seen as a means of tailoring interventions to individual student profiles despite high caseloads.

Research question 2: What are the major challenges anticipated in integrating AI into guidance and counselling practices in Nigerian secondary schools?

Table 2 summarizes perceived challenges, ranked by mean score.

Table 2: Perceived challenges of AI integration in Guidance and Counselling (N=250)

Perceived Challenges	Mean	SD	Decision
Lack of adequate technological infrastructure	4.50	0.65	Agreed
Insufficient funding for AI tools	4.45	0.70	Agreed
Gaps in digital literacy among staff/students	4.30	0.72	Agreed
Inadequate training for counsellors	4.20	0.70	Agreed
Ethical concerns (for example, bias, privacy)	4.15	0.88	Agreed
Resistance to change	3.90	0.90	Agreed
Perceived loss of human touch in counselling	3.80	0.98	Agreed

"Lack of adequate technological infrastructure" ($\bar{x}$ =4.50) was the leading barrier, encompassing unreliable electricity, poor internet connectivity, and hardware scarcity. An administrator summarized the challenge succinctly: "We can talk about AI, but if we don't have stable power or internet, it's just a dream" (Administrator C, Interview). "Insufficient

funding" ($\bar{x}$=4.45) compounded this, as procurement and maintenance of AI software would impose significant costs. "Gaps in digital literacy" ($\bar{x}$=4.30) and "Inadequate training" ($\bar{x}$=4.20) highlighted a human capacity deficit, with one counsellor observing: "It's not just about having the technology; it's about knowing how to use it effectively and safely" (Counsellor D, Interview). Ethical concerns regarding bias, privacy, and data security ($\bar{x}$=4.15) were strongly felt, reflecting anxiety about AI handling sensitive counselling information. Socio-psychological barriers - "resistance to change" ($\bar{x}$=3.90) and "perceived loss of human touch" ($\bar{x}$=3.80) - rounded out the challenges, with participants expressing fears that AI could erode the relational core of counselling.

Research question 3: What are the practical implications for secondary school counsellors, students, and school administration in Nigeria when AI is integrated into guidance and counselling?

For counsellors, the primary implication is a fundamental shift in role orientation: from sole providers of information to facilitators and interpreters of AI-generated insights. This demands advanced digital literacy, understanding of AI limitations, and clear ethical guidelines. As one counsellor articulated, "Our role won't disappear, but it will change. We'll need to learn how to work with AI, not against it" (Counsellor E, Interview). AI would assume routine inquiries, freeing counsellors for complex emotional support and crisis intervention. For students, AI integration promises improved information access and personalized guidance, but requires digital literacy to critically evaluate AI outputs. Crucially, AI cannot replicate the empathy and trust central to the counselling relationship: "AI can tell me about careers, but my counsellor helps me with my worries" (Student F, FGD). For school administration, implications centre on policy development, resource allocation, and change management. Schools must formulate data privacy policies and ethical frameworks for AI use, invest substantially in infrastructure and professional development, and cultivate an institutional culture that embraces innovation while safeguarding the human dimension of counselling.

Research question 4: What strategies can be proposed to facilitate the effective and ethical integration of AI in guidance and counselling in Nigerian secondary schools?

Qualitative findings consistently pointed to several strategic priorities. A phased, evidence-based approach beginning with pilot programmes in well-resourced schools before broader rollout was widely endorsed. Counsellors emphasized that introduced technology must be compatible with existing routines and counselling frameworks, consistent with DIT's

compatibility attribute. Robust training - encompassing ethical use, data interpretation, and recognition of AI limitations - was identified as essential before and during implementation. Participants also stressed inclusive policy development, involving counsellors, students, and parents, to ensure a human-centred design rather than a top-down imposition of tools. Public-private partnerships were seen as viable mechanisms for bridging infrastructure and funding gaps, while continuous monitoring and evaluation frameworks were considered essential for verifying that AI integration genuinely improves counselling outcomes.

Discussion of the findings

The strong endorsement of efficiency ($\bar{x}$=4.25) and accessibility ($\bar{x}$=4.10) as primary benefits aligns closely with TAM's construct of perceived usefulness, suggesting that Nigerian counsellors recognize AI's instrumental value (Davis, 1989). This finding resonates with international evidence on AI's capacity to automate routine tasks and extend service reach (UCANWEST, 2024). The high rating for data-driven decision-making also reflects a readiness to embrace evidence-based practice, provided appropriate tools and training are made available.

The pronounced infrastructural and financial barriers - particularly inadequate infrastructure ($\bar{x}$=4.50) and insufficient funding ($\bar{x}$=4.45) - represent challenges qualitatively different from those typically emphasized in Western AI adoption literature, which tends to foreground attitudinal or behavioural resistance. In the Nigerian context, these contextual prerequisites constitute a more fundamental bottleneck. This resonates with DIT's concept of facilitating conditions: even where an innovation is perceived as advantageous, adoption stalls when requisite infrastructure is absent (Rogers, 2003). The digital divide documented here mirrors broader patterns in Nigerian public education (Nwokedi & Agwagah, 2021; Olawale & Raji, 2021), underscoring that AI integration cannot be considered in isolation from systemic underfunding.

Digital literacy gaps ($\bar{x}$=4.30) and inadequate training ($\bar{x}$=4.20) reinforce the HCD perspective that technology provision alone is insufficient; human capacity must be developed alongside infrastructure (Shneiderman, 2022). Importantly, counsellors' demonstrated awareness of their own limitations and their calls for structured training suggest receptivity to change when support structures are in place - a distinction policymakers should heed rather than interpreting caution as wholesale resistance.

ISSN: 2651-5687 (Print)
ISSN: 2651-5709 (Online)

Ethical concerns ($\bar{x}$=4.15) regarding algorithmic bias, data privacy, and the perceived loss of human touch ($\bar{x}$=3.80) demand particular attention. The counselling relationship is grounded in trust, empathy, and unconditional positive regard - values central to Person-Centred Therapy (Rogers, 1951) and deeply embedded in Nigerian relational norms. Participants' fears that AI might dehumanize counselling echo global critiques of AI in therapeutic contexts (Plakun, 2025) and are legitimate. Successful integration must therefore explicitly position AI as supplementary to human counselling, automating routine tasks to free counsellors for complex, emotionally demanding work - precisely the framing adopted by international mental health chatbot and predictive analytics programmes (De Nieva et al., 2020; Lopez, 2023). The practical implications across stakeholder groups collectively underscore a systemic readiness-challenge requiring coordinated institutional, policy, and capacity-building responses.

Conclusion

The integration of Artificial Intelligence into guidance and counselling practices in Nigerian secondary schools presents a compelling opportunity to enhance service delivery, address long-standing systemic limitations, and expand access to personalized student support. While potential benefits are widely recognized by practitioners, successful integration is contingent on overcoming substantial infrastructural, financial, and human capacity challenges. Resolving these challenges requires a concerted, multi-stakeholder effort prioritizing strategic technology investment, comprehensive digital literacy training, and the development of culturally sensitive ethical frameworks. AI must be positioned not as a replacement for human counsellors but as an augmentative tool that frees practitioners to focus on the complex, empathetic, and relational dimensions of their work, ultimately producing a more effective and equitable guidance system for Nigerian students.

Recommendations

For policy makers at the federal and state levels, a clear national policy framework should be developed to govern AI integration in guidance and counselling, encompassing data privacy, ethical AI use, and minimum standards for technological infrastructure. Budgetary allocations must be increased for infrastructure development - reliable internet, sustainable power, and hardware procurement - in public secondary schools, with dedicated funding lines for the acquisition and maintenance of AI counselling tools.

For school administration, priority should be given to ensuring consistent electricity supply and reliable internet connectivity on school premises. Continuous professional development programmes focusing on AI literacy, ethical application, and practical tool use should be

organized and sustained. Schools should also develop site-specific policies on AI use in counselling, with clear protocols for data security, confidentiality, and transparency with students and parents. Administrators should foster an institutional culture that supports innovation while proactively addressing concerns about job security and the preservation of human-centred counselling.

For counsellors, active engagement in professional development opportunities and participation in the design and evaluation of AI tools used in their settings is strongly encouraged, ensuring that technology adoption is informed by practitioner expertise and grounded in counselling ethics. Future research should employ longitudinal designs to assess the actual impact of AI integration on counselling outcomes in Nigerian schools and explore the development of culturally adapted AI tools that reflect Nigeria's diverse socio-cultural contexts.

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ISSN: 2651-5687 (Print)
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