

ARTIFICIAL INTELLIGENCE–DRIVEN COUNSELLING INSIGHTS: PERSONALIZING LEARNING AND CAREER PATHWAYS FOR SUSTAINABLE STUDENT SUCCESS

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Abstract

The study examined the impact of AI-based counselling information on secondary school students' academic and vocational decisions in Oyo State, Nigeria. Researchers used a validated scale, the AI Personalised Learning and Career Guidance Questionnaire (AIPL-CGQ), to collect data from 120 students from four different schools in Ibadan, Oyo State, with Cronbach's alpha values of 0.88 for Personalised Learning and 0.84 for Career Pathways. Pearson Product-Moment Correlation and independent-samples t-tests were used to analyse the collected data. Results showed a significant relationship between AI-driven counselling insights and personalised learning among students. There was also a significant

positive relationship between AI-driven counselling insights and students' career pathways. Consequently, the null hypothesis was rejected. This suggests AI-driven counselling insights help students explore career options, develop career awareness, and make informed decisions. However, gender does not have a statistically significant effect on students' perceptions of or responses to AI-driven counselling insights.

Keywords: Artificial Intelligence and counselling, Personalising learning, Career pathways, Sustainable student success, Educational technology

Introduction

One of the most striking trends affecting education in the 21st century is the rapid rise of Artificial Intelligence (AI). By enabling educational systems to provide intelligent, data-driven and targeted guidance, AI tools are slowly revolutionising the delivery of teaching, learning, evaluation, counselling and career assistance. Unlike traditional educational technologies that mainly offer access to learning resources, artificial intelligence systems can evaluate large amounts of learner data, identify behavioural and academic patterns, predict students' needs and generate recommendations based on individual characteristics. These capabilities have made AI a burgeoning resource to improve the quality of students' support services and educational decision-making. Artificial intelligence has great potential for counselling psychology, as it can improve professional practice by offering evidence-based information that allows counsellors to provide more tailored and responsive solutions (Ogunode, 2024).

In recent years, students have encountered more complex academic, psychological and career-related obstacles owing to rapid technology advances, worldwide competitiveness and shifting expectations in the labour market. Apart from academic success, students should also develop critical thinking skills, emotional resilience, professional flexibility and lifelong learning competencies. Thus, counselling

services are a vital aspect of educational institutions, helping students make informed educational, personal and professional decisions. However, the provision of counselling services in many educational institutions, especially in developing countries like Nigeria, is still hampered by inadequate numbers of professional counsellors, high student-to-counsellor ratios, a lack of adequate technological resources, and limited opportunities for individual guidance. Such limits often hinder counsellors' ability to address the multiple scholastic and psychological needs of youngsters in a timely and holistic manner. Adebayo and Yusuf (2024) emphasized the need to integrate modern technology into the delivery of counselling services to boost student support systems and educational outcomes in the Nigerian university system. AI is employed as an auxiliary tool to enhance the quality, efficiency and accuracy of counselling practice by supporting evidence-based decision-making (Eze & Nwachukwu, 2024), not to substitute for the professional knowledge of counsellors. Therefore, customised instruction is becoming increasingly important. This shows the importance of AI applications in current education. Learners vary greatly in cognitive ability, learning preferences, motivation, socio-cultural background, experience, and educational goals. Consequently, uniform methods of instruction and supervision often fail to match the different requirements of individual learners. Artificial intelligence (AI) tools enable tailored education by constantly evaluating a learner's performance, patterns of engagement, pace of learning, and instructional preferences to deliver appropriate learning pathways and specialized interventions.

Not only does this adaptive support promote higher levels of engagement, academic achievement and happiness with learning, but it also helps students learn according to their skills. Applying AI to support individualized learning can improve the quality of education and create more inclusive learning environments in the Nigerian educational system, which faces major teaching challenges due to large class sizes and diverse student populations (Nwankwo & Ibrahim, 2024).

In an era define

d by rapid technological shifts and an evolving job market, AI-powered career counselling has moved from a luxury to a necessity. Automation is coming, new industries are emerging, and the need for digital skills is growing. Students need up-to-date and evidence-based information to help them navigate their future. In Nigeria, many young people still struggle to make career choices due to poorly funded counselling facilities, limited knowledge of the job market, and low awareness of emerging areas. AI-powered mentoring fills this need by assessing where a student's interests, abilities, values and personality align with the present economic climate to craft tangible and achievable career directions. When counselling is tailored in this way, students show improved levels of adaptability, employability and confidence in their choices (Adepoju & Salami, 2025).

Real academic success goes beyond report card grades. It encompasses emotional wellness, self-esteem, career readiness and the ability to adapt to change. AI insights can enable these holistic outcomes by using predictive analytics to spot whether a student is struggling academically, emotionally or guidance-wise. It shifts counsellors from crisis management to proactive intervention.

Literature Review

Counselling is a fundamentally humanistic practice based on empathy, trust and a relationship between people. While artificial intelligence is not meant to replace human counsellors, it should be regarded as an instrument to improve the efficiency and precision of human counsellors with computational precision and human compassion (Okafor & Bello, 2024). However, the use of AI in educational institutions in Nigeria is still limited, notwithstanding its potential. The obstacles include poor infrastructure, such as uneven internet access and a lack of modern technology. Meanwhile, many professional counsellors find themselves under-skilled because of poor technological literacy and a lack of formal education in artificial intelligence (AI) technology. These operational issues are amplified

by concerns regarding data security and student consent, as well as a substantial absence of institutional policies to guide the ethical use of AI in education. If the full scope of AI-enhanced therapy is to be made available to most businesses, then these basic problems need to be overcome. While there are studies on AI in education and administrative functions, there is a lack of empirical studies exploring the influence of AI counselling insights on customised learning and career selections, especially in Nigeria. This research investigates the direct relationship between AI-generated insights, personalised education, and the learner's continued growth. This research aims to explore how AI could improve counselling methods while maintaining the essential human aspect and to provide practical, evidence-based recommendations for educators, policymakers and counsellors as they navigate digital transformation in education. Counselling services have played an important role in tackling mental health problems, providing help and enabling personal growth to people across the globe. Available 24/7 through virtual counselling systems that employ AI-powered chatbots or virtual agents, individuals can reach out for help and guidance anytime they need it (Vij et al., 2020). AI in counselling also enables the delivery of individualised interventions tailored to individuals' requirements, preferences, and characteristics. Machine learning algorithms analyse large volumes of data, including user interactions, behavioural patterns, and self-reported illnesses, to provide personalised recommendations and interventions (Iniasta-Sepúlveda et al., 2020).

AI technologies may increase access to mental health support and improve service delivery globally. Nevertheless, their implementation and effectiveness in the Nigerian context remain largely unexplored. Research on the awareness, acceptability, and deployment of AI-driven counselling solutions tailored to Nigeria's socio-cultural and infrastructural context is currently insufficient.

Research shows that gender may affect individuals' views and

preferences regarding technology-mediated therapies (Venkatesh & Morris, 2000). For example, women may be more willing to seek help from AI-supported platforms that they perceive to be non-judgmental and accessible (Fitzpatrick et al., 2017). Conversely, men may be less receptive or more sceptical regarding AI counselling and want face-to-face connection (Fitzpatrick et al., 2017). Better understanding these gender differences is key to customising AI interventions to engage effectively and meet the needs of diverse user communities. Professional status within the counselling sector, including clinicians, counsellors in training, and support workers, may also impact uptake and utilisation of standard artificial intelligence (AI) tools. Experienced physicians can regard AI as an adjunct to the skills and experience they already possess, to improve the quality and efficiency of their services (Rizzo & Koenig, 2017). Understanding views and experiences of different professional levels about AI in counselling might help inform training and implementation efforts to improve its uptake and effectiveness in therapeutic practice. Furthermore, evidence-based policy development is needed to support the professional advancement of counsellors in response to global trends. This research therefore explores the relationship between awareness and acceptability of AI technologies in counselling, with particular attention to gender and professional status disparities.

Artificial intelligence has transformed the professional practice of counselling by offering enhanced support to clients through various strategies (Ofem, Asuquo, et al., 2024; Ofem, Iyam, et al., 2024). An increasing number of therapists are recognising the impact of AI tools on their professional activities. Documented applications of AI include providing basic counselling support and conducting initial assessments through virtual therapy assistants (VTA) (Jarrah et al., 2023), analysing client issues and adapting interventions using sentiment analysis algorithms (Hwang & Tu, 2021), developing treatment strategies that address client needs and rights based on records and experiences, and monitoring client progress (Karadağ, 2023).

Statement of the Problem

Traditional counselling services may not always offer the individualized and timely help required to accommodate students' diverse interests, talents, learning requirements, and professional ambitions, despite the fact that students are increasingly faced with challenging decisions regarding their education and future professions. Artificial Intelligence (AI) is still not widely used in counselling, especially in Nigeria, despite its ability to assess student data and produce insights that could help individualized learning and career guidance. There is a knowledge gap on how AI-driven counselling insights might link students' learning demands with suitable job pathways because previous research has mostly looked at AI for personalized learning and career advising separately. Additionally, there is little empirical data demonstrating how these insights can support long-term student performance and enhance professional counselling. Therefore, this study aims to investigate how AI-driven counselling insights can help students make more informed decisions about their education and careers by personalizing learning and career routes.

Purpose of the Study

The study examined how AI-driven counselling can help personalise learning and guide students toward clear, lasting career paths. The specifically objectives are to :

- a. examined the relationship between AI-driven counselling insights and personalised learning among students.
- b. investigated the relationship between AI-driven counselling insights and career pathways among students.
- c. determined the difference between male and female students in their response to AI-driven counselling insights.

Hypotheses

H1: There is no significant relationship between AI-driven counselling insights and personalised learning among students.

H2: There is no significant relationship between AI-driven counselling insights and career pathway among students.

H3: There is no significant difference between male and female students in their responses to AI-driven counselling insights.

Methodology

The study used a mixed-method research methodology, incorporating both quantitative and qualitative methodologies to improve knowledge of AI-driven counselling insights, individualised learning, and career pathway development for secondary school students. A mixed-methods approach was considered appropriate as the quantitative part offered measurable evidence on the relationships between the study variables. In contrast, the qualitative part explored the experiences and perspectives of school counsellors and teachers on the use of AI-driven counselling tools in educational guidance services. The combination of both methodologies allowed the results of the two phases to inform each other and offered a more balanced view of the study challenge. The study adopted a descriptive survey research approach in the quantitative phase. The population was all the secondary school pupils from Ibadan, Oyo State, Nigeria. Participants were selected using a multistage sampling process. A total of 120 students from four schools were randomly selected for the study.

The data were collected using an adapted instrument named the Artificial Intelligence Personalised Learning and Career Guidance Questionnaire (AIPL-CGQ). The questionnaire was broken into two parts. Section A gathered demographic data from the respondents, such as gender, age and class level. Section B comprised twenty items to evaluate students' insights into AI-based counselling, individualised education, and career pathway development. The items were designed on a 4-point Likert scale ranging from Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The instrument was validated face- and content-wise by specialists in Counselling Psychology, Educational Technology and Measurement and Evaluation for its suitability and relevance to the aims of the

study. The study was trial-tested among pupils of secondary schools outside the study area but with similar characteristics to the study population, with the AI Personal Learning scale yielding a reliability coefficient of 0.88. In contrast, the Career Guidance scale achieved 0.84. A Pearson product-moment correlation was conducted to assess the correlation between AI-driven counselling insights and customised education and career route development. An independent-samples t-test was also performed to assess whether there were significant differences in students' responses to AI guidance by gender. Hypotheses were tested at a standard significance threshold of 0.05.

Results

H1: There is no significant relationship between AI-driven counselling insights and personalized learning among students.

Table 1: Pearson Product Moment Correlation Analysis of the Relationship between AI-Driven Counselling Insights and Personalized Learning among Students (N = 120)

Variables	N	Means	SD	r value	p value	Decision
AI-driven counselling insights	120	48.38	8.42	0.624	0.05	Significant
Personalized Learning	120	52.18	7.65			

This indicates a **significant relationship between** AI-driven counselling insights and personalized learning among students. Therefore, the null hypothesis, which states that there is no significant relationship between AI-driven counselling insights and personalized learning among students, was **rejected**.

H2: There is no significant relationship between AI-driven counselling insights and career pathway among students.

Table 2: Pearson Product Moment Correlation Analysis of the Relationship between AI-Driven Counselling Insights and Career Pathways among Students (N = 120)

Variables	N	Means	SD	r value	p value	Decision
AI-driven counselling insights	120	48.38	8.42	0.571	0.05	Significant
Career Pathway	120	50.74	8.13			

The Table shows a significant positive relationship between AI-driven counselling insights and students' career pathways. Consequently, the null hypothesis was rejected. This suggests AI-driven counselling insights help students explore career options, develop career awareness, and make informed decisions.

Hypothesis 3: There is no significant difference between male and female students in their response to AI-driven counselling insights.

Table 3: Independent Samples t-test Showing Gender Difference

Gender	N	Mean	SD	df	t-value	p-value	Decision
Male	60	3.45	0.78	118	1.32	0.189	Not
Female	60		3.52		0.81		Significant

As shown in Table 3, the p-value of 0.189 exceeds the conventional 0.05 significance threshold, resulting in the retention of the null hypothesis. These results indicate that gender does not have a statistically significant effect on students' perceptions of or responses to AI-driven counselling insights.

Discussion of Findings

Hypothesis One: A substantial correlation does not exist between AI-generated counselling insights and individualised instruction for students.

The finding corresponds with Ogunode (2024), who asserted that

artificial intelligence offers opportunities for improving educational practices in Nigeria through individualised learning approaches, data-informed decision processes, and enhanced support systems for learners. Eze and Nwachukwu (2024) similarly observed that artificial intelligence in education can assist institutions in recognising individual learner variances and providing customised solutions that enhance educational outcomes. Thus, the notable relationship discovered in this study can be validated by the idea that AI-augmented counselling insights equip counsellors with improved understanding crucial for formulating therapies customised to students' individual learning needs. Here is an amended edition with suitable in-text references incorporated into the discourse. I have refined the academic language, minimised redundancy, and refrained from attributing assertions to sources without explicit evidence.

The discovery that counsellors' recognition and endorsement of artificial intelligence (AI) correlate with its utilisation in counselling methods may seem surprising and necessitates further investigation into the elements influencing this relationship among counselling practitioners. Understanding and endorsing AI are crucial, as practitioners are less inclined to embrace and effectively utilise a technology they do not fully grasp. The application of AI in counselling is particularly pertinent, since it introduces significant ethical dilemmas, such as confidentiality, privacy, informed consent, appropriate reliance on automated results, and the maintenance of therapeutic rapport. Ethical factors are thus pivotal to the judicious use of AI-driven technologies in human-centric fields (Lim et al., 2023; Lee & See, 2004). Moreover, the adoption of AI may hinge on its perceived utility, user-friendliness, trustworthiness, and the degree to which practitioners view the technology as aligned with their professional duties (Davis, 1989; Gursoy et al., 2019). Stina (2021) likewise emphasised the complex dimensions of professional counselling and career assistance, which entails an interplay between the counsellor, the client, and the topic at hand. This triadic link implies that integrating AI into counselling should be evaluated in relation to the requirements and concerns of all three elements, rather than merely as a technological solution.

The discovery that male counsellors exhibit greater understanding and acceptance of AI in counselling than their female counterparts necessitates a deeper investigation into the potential variables contributing to this gender difference. A potential rationale is the impact of societal norms, cultural expectations, and gendered trends in access to and interaction with information and communication technology (ICT). Research within the Nigerian higher education landscape has revealed gender inequalities in the use of ICT, with male students and faculty in certain environments exhibiting higher levels of ICT engagement compared to female peers (Odigwe & Owan, 2020a, 2020b). These disparities may encompass nascent technologies like AI, especially in contexts where access to technology assets, professional connections, training opportunities, and avenues for experimentation varies across gender demographics.

Disparities in professional exposure and chances for technological advancement may potentially influence differences in AI awareness and acceptance. Counsellors with greater access to professional development, technology training, or collaboration with AI-using colleagues may develop greater familiarity and confidence with these tools. Investigations on AI acceptance have similarly revealed that users' willingness to embrace AI may be affected by elements such as perceived utility, trustworthiness, familiarity, and the contextual circumstances related to technology utilisation (Sage et al., 2023; Gado et al., 2022). The current discovery aligns with research indicating higher male involvement in ICT (Odigwe & Owan, 2020a, 2020b). The findings are consistent with Ogunode (2024), who argues that artificial intelligence offers the potential to improve educational practices in Nigeria through tailored teaching methods, research-based decision-making, and improved student support systems. Eze and Nwachukwu (2024) also note that artificial intelligence in education can help schools identify student differences and provide tailored responses that improve learning outcomes. Therefore, the relationship found in this study can be confirmed by the idea that increased AI counseling knowledge provides counselors with a better understanding, which is essential for developing treatments designed for students' learning needs. This

is a revised version with appropriate contextual references included in the text. I have revised the academic language, reduced the need for tolerance, and avoided attributing rights to sources without clear evidence.

The finding that counsellors' recognition and acceptance of artificial intelligence (AI) is associated with its use in advisory practices may seem surprising and warrants further investigation into the factors influencing this relationship among advisors. Understanding and accepting AI is important because experts are not empowered to adopt technology they do not understand or improve. The use of AI in advisory is important because it raises ethical issues such as privacy, confidentiality, expert collaboration, reliance on automated results, and maintenance of the care relationship. Therefore, ethical considerations are important for the use of AI-driven technologies in human-centered fields (Lim et al., 2023; Lee & See, 2004). Moreover, the adoption of AI may depend on its usefulness, ease of use, reliability, and how experts perceive the technology to be relevant to their work (Davis, 1989; Gursoy et al., 2019). Stina (2021) also emphasizes the complex dimensions of professional advice and assistance, which are related to the relationship between the advisor, the client, and the subject at hand. This three-way connection means that the integration of AI into the boardroom should be examined in light of the needs and concerns of all three parties, rather than as a purely technical solution.

The finding that male advisors demonstrate greater understanding and acceptance of AI in the boardroom than their female counterparts calls for further research into the various factors that may contribute to this gender gap. One possible reason is the role of social norms, cultural expectations, and gender norms in accessing and engaging with information and communication technologies (ICT). Research on the Nigerian higher education environment has shown gender disparities in ICT use, with male students and faculty in some settings exhibiting higher levels of ICT engagement than their female counterparts (Odigwe & Owan, 2020a, 2020b). These disparities

may include emerging technologies such as AI, especially in settings where access to technology tools, work relationships, learning opportunities, and assessment opportunities differ across populations.

Differences in job exposure and opportunities for technological advancement may influence differences in knowledge and acceptance of AI. Consultants who have access to professional development, technical training, or working with colleagues who use AI can become more familiar with and trust these tools. Research on AI adoption has also shown that users' willingness to adopt AI can be influenced by factors such as usability, trust, familiarity, and the context surrounding the use of the technology (Sage et al., 2023; Gado et al., 2022). This finding is consistent with research showing that men are more likely to be involved in technology (Odigwe and Owan, 2020a, 2020b). However, the evidence is not entirely consistent, suggesting that gender differences in technology adoption may be context-specific rather than universal.

This study aligns with Ogunode (2024), who suggested that artificial intelligence has the potential to improve educational practices in Nigeria through personalised teaching methods, research-based decision-making, and improved student support systems. Eze and Nwachukwu (2024) also noted that artificial intelligence in education can help schools identify student differences and provide personalised responses that improve learning outcomes. Therefore, the relationship found in this study may support the idea that increased counselling knowledge in the natural sciences provides counsellors with a better understanding essential for implementing treatments that meet a student's learning needs. This is a revised version with appropriate contextual references added to the book. I have revised the language of the study, reduced the need for tolerance and avoided attributing to sources that lack clear evidence.

The finding that counselors' awareness and acceptance of artificial intelligence (AI) is associated with its use in counseling is surprising

and warrants further research into the factors that influence this relationship among counselors. Understanding and accepting artificial intelligence is important because professionals are unable to adopt technologies they do not understand and that are improving. The use of AI in counseling is important because it raises ethical issues such as privacy, security, expert collaboration, reliance on automated results, and maintaining the care partnership. Therefore, ethical considerations are important for the use of AI-driven technologies in human-centered domains (Lim et al., 2023; Lee & See, 2004). Moreover, the adoption of AI may depend on its usefulness, ease of use, trustworthiness, and how experts perceive the technology to be relevant to their work (Davis, 1989; Gursay et al., 2019). Stina (2021) also emphasizes the complex dimensions of expert advice and assistance, which are related to the relationship between the advisor, the client, and the person at hand. This three-way relationship means that we must find a way to integrate AI into the advisory space in line with the needs and concerns of all three groups, rather than as a mere technological solution.

The finding that male advisors demonstrate greater understanding and acceptance of AI in the boardroom than their female counterparts requires further research into the various factors that may contribute to this gender gap. One possible explanation is the role of social norms, cultural expectations, and gender norms in accessing and engaging with information and communication technologies (ICTs). Research on the Nigerian higher education environment has shown gender disparities in ICT use, with male students and faculty in some settings demonstrating higher levels of ICT engagement than their female counterparts (Odigwe & Owan, 2020a, 2020b). This disparity may be due to emerging technologies such as AI, especially in settings where access to technology tools, collaboration, learning opportunities, and assessment opportunities differ across populations.

Differences in job exposure and opportunities for technological advancement may influence differences in knowledge and

acceptance of AI. Consultants who have access to technology development, technology training, or work with colleagues who use AI may be more familiar with and confident in these tools. Research on AI adoption also shows that users' willingness to adopt AI can be influenced by factors such as usability, trust, familiarity, and the context in which the technology is used (Sage et al., 2023; Gado et al., 2022). The current findings are consistent with research that suggests that men may be more likely to engage with technology (Odigwe and Owan, 2020a, 2020b). However, the evidence is not entirely consistent, suggesting that gender differences in technology adoption may be collective rather than universal. The results also show that technology adoption through mentors is a significant positive predictor of technology use. This relationship was found across gender and at all job levels, but was particularly pronounced among men. The results show that, regardless of gender and job status, readiness to adopt technology is significantly associated with the likelihood of using technology tools. These results are available online.

Conclusion

The findings highlight the important role of attitudes in shaping the use of AI tools by consultants. Interestingly, this study showed that counselors' knowledge was a strong positive predictor of AI acceptance in counseling practice. This was true for both men and women, but stronger for men than for women, and stronger for professors than for other groups of respondents. Similarly, a counselor's agreement is a strong positive predictor of AI use in counseling practice. This is true for both men and women, but stronger for men than for women, and equally strong across all occupational ranks. Counselors' knowledge is a strong positive predictor of the adoption of AI in counseling practice. This was true for both men and women, but stronger for men than for women, and stronger for professors than for other groups of respondents.

Recommendations

This research provides significant insights into the relationship between awareness, acceptance, and use of AI in addressing client concerns during therapy sessions. It underscores the significance of cultivating greater understanding and acceptance of AI among counsellors, particularly among younger practitioners, as a possible counterweight to conventional methods. The research emphasises the need for educational organisations, professional associations, and policymakers to address these concerns and advocate for the ethical application of AI within the rapidly changing realm of counselling practice. Consequently, as Nigeria endeavours to integrate AI into the educational framework fully, it is essential to instruct counsellor trainees and professionals about the potential advantages of AI for their vocational responsibilities. Nonetheless, strategies to prevent exploitation must also be implemented.

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