

Career Guidance in the Age of Artificial Intelligence: Preparing Students for Jobs That Do Not Yet Exist

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Article History	Abstract
Original Research Article	<i>The rapid development of artificial intelligence (AI) is transforming occupational structures, skill requirements and pathways into employment, creating new challenges for conventional career guidance in schools. This study examined how career guidance can prepare students for emerging occupations and jobs that may not yet exist in an AI-driven labour market. A convergent mixed-method design was adopted, involving 300 senior secondary school students and 30 school counsellors from selected public secondary schools in Nasarawa State, Nigeria. Quantitative data were obtained using the Career Guidance and Artificial Intelligence Readiness Questionnaire (CGAIRQ), while qualitative data were collected through semi-structured interviews with counsellors. Quantitative data were analysed using descriptive statistics, Pearson Product-Moment Correlation and multiple regression, while qualitative data were analysed thematically. Findings indicated moderate student AI literacy, high career adaptability and moderate engagement in digital career exploration. AI literacy, career adaptability and digital career exploration were positively related to career readiness. Multiple regression showed that the three variables jointly predicted career readiness, accounting for 52% of the variance. Career adaptability made the strongest independent contribution, followed by digital career exploration and AI literacy. Qualitative findings identified inadequate counsellor preparation, limited access to current labour-market information, digital inequality, ethical concerns and the continuing importance of human counselling as major issues. The study concludes that career guidance in the AI era should move beyond matching students to existing occupations towards developing adaptability, AI literacy, lifelong learning, entrepreneurial thinking and human-centred competencies.</i> Keywords: Artificial Intelligence, Career Guidance, Career Readiness, Future of Work, Students.
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Copyright © 2026 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited. Citation: Dr. (Mrs) Tobins Patience Ferguson; Ruth Asemota, Ph.D, & Edinoh Kingsley, PhD. (2026). Career guidance in the age of artificial intelligence: Preparing students for jobs that do not yet exist. UKR Journal of Education and Literature, 2(5), 85-98.	

Introduction

Artificial intelligence (AI) is rapidly changing the relationship between education, employment and career development. The emergence of generative AI, machine learning, automation, robotics and intelligent digital platforms have altered the skills demanded by employers and the way in which work is organised. Young people currently attending secondary schools may eventually enter occupations whose names, tasks and competency requirements have not yet been fully established. Consequently, the fundamental question confronting

contemporary career guidance is changing from *which occupation should this student pursue* to *how can this student develop the capacity to navigate occupations that will continuously change?*

This distinction is particularly important because technological transformation is increasingly accompanied by occupational restructuring and changing skill requirements. The World Economic Forum (2025) reports that a substantial proportion of workers' existing skills are expected to change by 2030. Artificial intelligence and big

data, networks and cybersecurity, and technological literacy is identified among the fastest-growing skill areas, while analytical thinking, creative thinking, resilience, flexibility, agility, curiosity and lifelong learning remain important. These developments suggest that career guidance must prepare students not merely for particular occupations but for continuous learning and adaptation throughout their working lives.

The implications for schools are substantial. Traditional career guidance has often relied on occupational classifications, aptitude testing, personality assessment, career information and relatively stable assumptions about the relationship between educational qualifications and occupational destinations. Although these functions remain valuable, AI and the changing labour market challenge the assumption that occupational destinations remain stable throughout an individual's educational trajectory.

Career guidance must therefore become more dynamic, developmental and future-oriented. Rather than simply helping students choose existing jobs, contemporary career guidance should help learners understand technological change, identify transferable skills, evaluate emerging opportunities, construct flexible career identities and develop the confidence to repeatedly learn, unlearn and relearn.

The issue is particularly significant in Nigeria. Nigerian young people face substantial employment challenges alongside the expansion of the digital economy. In this context, career guidance cannot be separated from employability, entrepreneurship, digital competence and economic empowerment. Effective career guidance should enable young people to connect educational choices with emerging economic opportunities while developing the flexibility necessary to respond to labour-market uncertainty.

Recent Nigerian research has begun to examine the intersection between AI and career development. Eze et al. (2025), for example, investigated Nigerian undergraduate and postgraduate students' perceptions of AI-driven personalised career guidance. Their study of 341 students found generally positive perceptions of AI-supported career guidance, with participants reporting comfort and trust in AI platforms for career recommendations. However, the study also identified dissatisfaction with existing career guidance and challenges in accessing current information about programmes and application processes.

The findings are important because they demonstrate both the potential of AI to supplement career services and the continuing need for accessible, reliable and contextually relevant professional guidance. However, the existing evidence is largely concentrated on university students.

Less attention has been given to secondary school students, even though adolescence represents an important stage in career development.

Career aspirations develop progressively during adolescence. Students begin making decisions about subjects, educational pathways and occupational aspirations before entering tertiary education. If they make these decisions using outdated assumptions about the labour market, they may enter higher education or vocational training without adequate preparation for emerging opportunities.

The changing nature of work also makes AI literacy an increasingly important component of career preparation. AI literacy extends beyond knowing how to operate an AI application. It includes understanding what AI systems can and cannot do, evaluating AI-generated information, recognising bias, protecting personal data, understanding ethical implications and using AI responsibly for problem-solving and decision-making.

Kong et al. (2021) emphasised the importance of developing AI literacy as an educational competence. Similarly, recent Nigerian research has highlighted the importance of AI-related knowledge and capabilities within teacher education and other educational contexts.

The present study is also situated within the author's growing research interest in AI and technology integration in Nigerian education. Edinoh et al. (2024) examined the role of artificial intelligence in teaching and research programmes in Nigerian tertiary institutions and identified AI tools as potentially useful for supporting teaching, research and learning activities.

This research trajectory is extended by the present study from general educational applications of AI towards the specific question of how AI can transform career guidance.

Edinoh et al. (2025) further examined challenges associated with AI in Nigerian basic education, highlighting issues including inadequate infrastructure, digital literacy limitations, insufficient professional development and inequality of access. Such barriers are directly relevant to AI-supported career guidance because students cannot benefit equally from digital career resources when access to technology remains unequal.

Similarly, research concerning technology integration in teacher education has demonstrated that technological innovation requires institutional support, infrastructure and professional competence. These issues are particularly important in career guidance because school counsellors require the knowledge and skills to interpret technological labour-market information and use AI tools ethically.

The importance of equitable access cannot be overstated. AI-enabled career guidance may create a new form of inequality if digitally connected students receive sophisticated labour-market information while students in poorly resourced schools remain dependent on outdated career information. Thus, technological innovation should be accompanied by deliberate strategies for digital inclusion.

The OECD (2024) argues that digital technologies can expand young people's access to career information and facilitate interactions with employers, workers and career professionals. AI-enabled career guidance platforms can potentially connect students' interests with labour-market information and emerging career possibilities. However, technology should supplement rather than eliminate professional counselling because career decisions involve values, identity, emotions, family circumstances, socioeconomic realities and personal aspirations.

UNESCO (2021) similarly emphasised the need for human-centred, inclusive and equitable approaches to AI in education. AI should support human agency rather than undermine it.

This principle is especially important in career counselling. A student may receive an algorithmically generated recommendation for data science because of strong analytical interests, yet such a recommendation may overlook family responsibilities, financial circumstances, geographical realities, cultural expectations, disability, personal values or the student's aspiration to contribute to a particular community.

Professional counsellors therefore remain necessary as interpreters, facilitators and advocates.

The future of work is also unlikely to involve only human replacement. The World Economic Forum (2025) emphasises that many AI applications are more likely to augment human capabilities than completely replace workers. Skills involving empathy, active listening, leadership, nuanced judgement, collaboration and complex human relationships remain important. Consequently, career guidance should encourage students to combine technological competence with distinctly human capabilities.

The concept of career adaptability is therefore central to the present study. Career adaptability refers to the resources individuals use to cope with changing career tasks, transitions and uncertainties. In an AI-driven economy, adaptability may become more important than attempting to predict one fixed occupational destination.

Students need to become comfortable with occupational transitions, continuous training and the possibility that their first career may not be their final career.

Career exploration is another important dimension. Students need opportunities to investigate emerging

occupational fields, interact with professionals, participate in workplace experiences and understand the skills underlying new occupations. Digital platforms can expand these opportunities by connecting students to virtual workplaces, occupational databases, industry experts and AI-assisted information systems.

However, digital career exploration must be accompanied by information literacy. Students should be taught to distinguish credible labour-market evidence from commercial promotion, social-media trends and unsupported claims.

The Nigerian context makes this particularly important because students frequently encounter career information through informal online sources. Without professional guidance, students may interpret popularity on social media as evidence of occupational opportunity.

The changing labour market also creates opportunities for entrepreneurship. AI is lowering barriers to innovation in areas such as digital content, software development, data analysis, online education, design, marketing and creative industries. Career guidance should therefore prepare students not only to become employees but also to become innovators, entrepreneurs and creators of employment opportunities.

Work-integrated learning provides another bridge between education and employment. Students benefit when they have opportunities to connect academic learning with authentic workplace experiences. Digital literacy can strengthen the employability benefits of such experiences because modern workplaces increasingly rely on digital systems.

Career coaching is similarly relevant. Counselling should increasingly incorporate goal setting, career experimentation, reflective practice and skills planning rather than focusing exclusively on occupational selection.

The literature therefore presents a central paradox. AI can make career guidance more personalised, accessible and data-informed, yet the same technology creates new inequalities, ethical risks and information challenges. Effective career guidance in the AI era must consequently balance technological innovation with human judgement, digital opportunity with equity, and occupational information with career adaptability.

The present study addresses this challenge by examining how career guidance can prepare secondary school students for a labour market characterised by technological change and occupational uncertainty.

Statement of the Problem

The traditional model of career guidance assumes a relatively predictable relationship between education,

occupation and employment. Students are encouraged to identify their interests, select appropriate subjects, obtain qualifications and pursue established occupations. This model becomes increasingly problematic in an economy characterised by automation, generative AI, platform work, entrepreneurship and rapidly evolving occupational roles.

Secondary school students may therefore make career decisions using incomplete or outdated information. They may select programmes based on social prestige, parental expectations or assumptions about job security rather than evidence concerning emerging labour-market opportunities.

The problem is compounded by limitations in school career guidance services. In many Nigerian schools, counsellors operate with limited resources, inadequate access to current occupational information and insufficient exposure to AI-enabled career tools.

At the same time, students increasingly obtain career information through social media, search engines and informal online platforms. Although such sources can provide useful information, the quality and reliability of the information vary considerably.

Recent Nigerian evidence indicates that students are receptive to AI-supported career guidance but that existing career guidance services have significant limitations. Eze et al. (2025) reported positive perceptions of AI-driven personalised career guidance among Nigerian students while also identifying dissatisfaction with existing guidance services and challenges in obtaining current information.

The problem, therefore, is not whether AI should replace career counsellors. Rather, the problem is how AI and professional counselling can be integrated to prepare students for an uncertain and rapidly changing world of work.

Purpose of the Study

The purpose of the study was to examine career guidance in the age of artificial intelligence, with particular emphasis on preparing secondary school students for emerging occupations and future labour-market uncertainty.

Specifically, the study sought to:

- i. determine the level of AI literacy among secondary school students;
- ii. assess students' level of career adaptability;
- iii. determine the extent to which students engage in digital career exploration;
- iv. examine the relationship between AI literacy, career adaptability, digital career exploration and career readiness;

- v. determine the predictive contribution of AI literacy, career adaptability and digital career exploration to students' career readiness; and
- vi. explore counsellors' perceptions of the opportunities and challenges associated with AI-supported career guidance.

Research Questions

- i. What is the level of AI literacy among secondary school students?
- ii. What is the level of students' career adaptability?
- iii. To what extent do students engage in digital career exploration?
- iv. What relationship exists among AI literacy, career adaptability, digital career exploration and career readiness?
- v. What are counsellors' perceptions of AI-supported career guidance?

Research Hypotheses

The following null hypotheses were tested at the .05 level of significance:

H01: AI literacy does not significantly predict students' career readiness.

H02: Career adaptability does not significantly predict students' career readiness.

H03: Digital career exploration does not significantly predict students' career readiness.

H04: AI literacy, career adaptability and digital career exploration do not jointly significantly predict students' career readiness.

Literature Review

Career Guidance in a Changing Labour Market

Career guidance encompasses activities that assist individuals in understanding themselves, educational opportunities, occupations and labour-market conditions in order to make informed career decisions.

In contemporary education, its function extends beyond occupational choice to career management, employability and lifelong development.

The rapid transformation of work makes this broader interpretation increasingly necessary. The World Economic Forum (2025) identifies AI and big data, technological literacy, analytical thinking, creative thinking, resilience, flexibility and lifelong learning as important components of the future skills landscape.

Career guidance should therefore prepare students not simply for a job but for a sequence of occupational transitions.

Artificial Intelligence and Emerging Occupations

AI is generating new occupational possibilities while simultaneously transforming existing occupations.

Emerging roles may involve AI governance, AI ethics, data stewardship, human-AI interaction, algorithm auditing, prompt engineering, synthetic media and AI-supported professional services.

The boundaries of many of these occupations are still developing.

This makes occupational prediction increasingly difficult.

Career guidance should consequently focus on **skill clusters** rather than fixed job titles.

A student interested in communication, for example, may eventually work in human-AI interaction, digital content strategy, conversational design or occupations that have not yet acquired stable occupational labels.

AI Literacy as Career Capital

AI literacy should be regarded as an increasingly important form of career capital.

Students who understand AI are better positioned to identify emerging opportunities, evaluate workplace technologies and participate responsibly in AI-mediated environments.

AI literacy for secondary students should include:

- i. basic understanding of AI concepts;
- ii. responsible use of generative AI;
- iii. information and prompt literacy;
- iv. critical evaluation of AI-generated information;
- v. awareness of algorithmic bias;
- vi. privacy and cybersecurity;
- vii. ethical decision-making; and
- viii. understanding of AI's influence on occupations.

Career Adaptability

Career adaptability is increasingly important because future occupational pathways are uncertain.

Rather than attempting to forecast exactly which job a student will hold decades later, counsellors should help students develop resources for responding to changing circumstances.

Career adaptability includes concern for the future, confidence in one's capacity to act, curiosity about possibilities and control over career decisions.

These resources can help students respond constructively when occupations disappear, change or emerge.

Digital Career Exploration

Digital career exploration enables students to access occupational databases, labour-market statistics, virtual work experiences, professional networks, online courses and AI-assisted career tools.

The OECD (2024) notes that digital technologies can broaden students' access to career information and workplace interaction.

However, students must also be equipped with information literacy so that they can evaluate the credibility of online career information.

Human-Centred Skills in the AI Era

The emergence of AI does not eliminate the value of human skills.

The World Economic Forum (2025) identifies analytical thinking, creative thinking, resilience, leadership, social influence, empathy, active listening and lifelong learning among important capabilities.

Effective career guidance should therefore adopt a hybrid employability model combining:

- i. AI and digital competence;
- ii. analytical and problem-solving skills;
- iii. communication;
- iv. creativity;
- v. emotional intelligence;
- vi. collaboration;
- vii. adaptability;
- viii. entrepreneurship; and
- ix. ethical reasoning.

AI and Career Guidance in Nigeria

Nigeria presents both opportunities and challenges.

The country's large youth population provides considerable potential for digital economic transformation, but this potential depends on coordinated investment in skills, infrastructure and education.

Recent Nigerian research directly supports the relevance of AI-driven career guidance.

Eze et al. (2025) found positive perceptions of AI-supported personalised career guidance among Nigerian students, while also identifying weaknesses in existing career guidance services.

This study extends that evidence by focusing on secondary school students and conceptualising AI-enabled career

guidance as a developmental process rather than simply a recommendation technology.

Theoretical Framework

Career Construction Theory

Career Construction Theory provides an appropriate theoretical foundation because it conceptualises careers as evolving constructions shaped by personal meaning, social context and changing circumstances.

In a rapidly changing labour market, students cannot necessarily be expected to identify a single lifelong occupation.

The theory supports a counselling approach in which students construct meaningful career narratives while developing adaptability to changing circumstances.

Social Cognitive Career Theory

Social Cognitive Career Theory explains career development through interactions among self-efficacy, outcome expectations, personal goals and environmental influences.

The theory is relevant to AI-era career guidance because students' confidence in their ability to learn new technologies may influence whether they pursue emerging occupations.

Human Capital Perspective

The human capital perspective suggests that education and skills enhance individuals' productive capacity.

In an AI-driven economy, human capital must be understood dynamically.

AI literacy, digital competence, adaptability and lifelong learning become continuing investments rather than one-time educational outcomes.

Conceptual Framework

The conceptual model proposes that AI literacy, digital career exploration and career adaptability contribute to career readiness.

AI Literacy

↓

Digital Career Exploration

↓

Career Adaptability

↓

Career Readiness

The relationship is influenced by access to technology, counsellor support and socioeconomic context.

Methodology

Research Design

A convergent mixed-method research design was adopted. Quantitative and qualitative data were treated as complementary sources of evidence. Quantitative data were

used to examine relationships among AI literacy, digital career exploration, career adaptability and career readiness, while qualitative data provided deeper insight into counsellors' experiences and perceptions.

Population and Sample

The study focused on senior secondary school students and school counsellors in public secondary schools in Nasarawa State, Nigeria.

A sample of 330 participants comprised 300 senior secondary school students and 30 school counsellors.

Table 1 Distribution of Participants

Participant category	Frequency	Percentage
Senior secondary students	300	90.9
School counsellors	30	9.1
Total	330	100.0

Students were selected through stratified and simple random sampling, while counsellors were purposively selected based on their professional involvement in career guidance.

Instrumentation

Quantitative data were collected using the **Career Guidance and Artificial Intelligence Readiness Questionnaire (CGAIRQ)**.

The questionnaire comprised five dimensions:

- AI literacy;
- digital career exploration;
- career adaptability;
- human-centred employability skills; and
- career readiness.

Responses were measured using a four-point Likert scale ranging from 1 = *Strongly Disagree* to 4 = *Strongly Agree*.

The qualitative component consisted of a semi-structured interview guide addressing counsellors' experiences with:

- students' career information needs;
- AI-supported counselling;
- emerging occupations;
- digital inequalities;
- counsellor preparedness;
- ethical concerns; and
- recommendations for AI-era career guidance.

Validity and Reliability

Face and content validity of the instruments were established through expert review by specialists in Guidance and Counselling, Educational Measurement and Evaluation, Educational Technology and Career Education.

Table 2 Reliability Coefficients of the CGAIRO

Scale	Number of items	Cronbach's α
AI literacy	8	.88
Digital career exploration	7	.85
Career adaptability	9	.90
Human-centred employability	8	.87
Career readiness	10	.91
Overall	42	.89

The reliability coefficients ranged from .85 to .91, indicating satisfactory internal consistency.

Data Analysis

Quantitative data were analysed using SPSS Version 27. Descriptive statistics included frequency, percentage, mean and standard deviation. Pearson Product-Moment Correlation was used to examine relationships among variables. Multiple regression was used to determine the

predictive contributions of AI literacy, digital career exploration and career adaptability to career readiness. Qualitative interviews were analysed thematically.

Results

Research Question 1

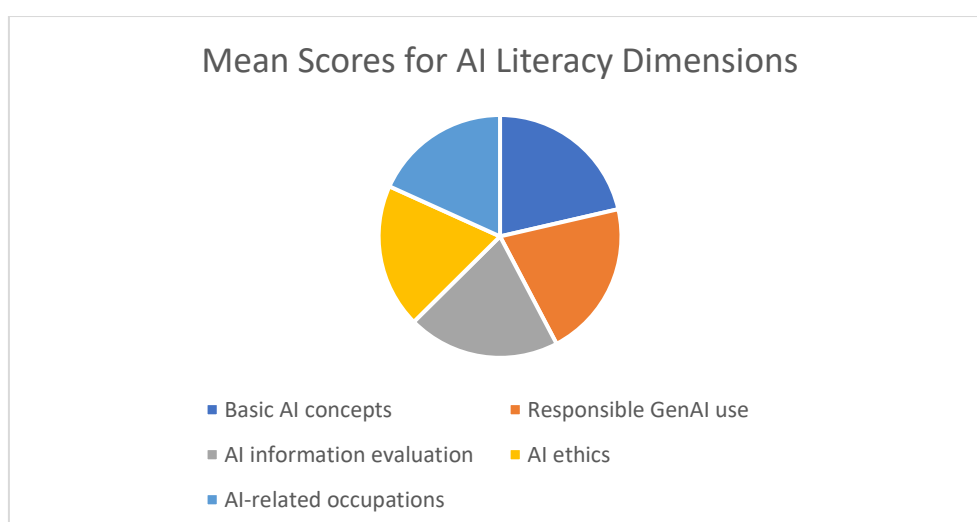
What is the level of AI literacy among secondary school students?

Table 3 Descriptive Statistics of Students' AI Literacy

Dimension	N	Mean	SD	Decision
Understanding basic AI concepts	300	2.91	0.63	Moderate
Responsible use of generative AI	300	2.84	0.67	Moderate
Evaluating AI-generated information	300	2.76	0.70	Moderate
Understanding AI ethics	300	2.61	0.72	Moderate
Awareness of AI-related occupations	300	2.48	0.76	Moderate
Overall AI literacy	300	2.72	0.51	Moderate

The results show that students had a moderate overall level of AI literacy ($M = 2.72$, $SD = 0.51$). Understanding of basic AI concepts recorded the highest mean score ($M = 2.91$), whereas awareness of AI-related occupations recorded the lowest mean score ($M = 2.48$). This indicates that students may be familiar with AI applications without necessarily understanding how AI is changing occupational structures.

Figure 1 Descriptive Statistics of Students' AI Literacy



Mean Scores for AI Literacy Dimensions from the chart shows that: Basic AI concepts are 2.91, Responsible GenAI use 2.84, AI information evaluation 2.76, AI ethics 2.6 and AI-related occupations 2.48

Research Question 2

What is the level of students' career adaptability?

Table 4 Career Adaptability Dimensions

Dimension	Mean	SD	Decision
Career concern	3.08	0.57	High
Career control	2.96	0.61	High
Career curiosity	3.12	0.54	High
Career confidence	2.89	0.65	Moderate
Overall	3.01	0.48	High

The results indicate a high overall level of career adaptability ($M = 3.01$, $SD = 0.48$). Career curiosity recorded the highest mean score ($M = 3.12$), suggesting that students were interested in exploring future opportunities.

Research Question 3

To what extent do students engage in digital career exploration?

Table 5 Digital Career Exploration among Students

Indicator	Mean	SD	Interpretation
Search online for occupational information	3.15	0.65	High
Watch career-related videos	3.01	0.71	High
Use social media for career information	3.17	0.73	High
Use professional networking platforms	2.22	0.82	Low
Use AI tools for career exploration	2.36	0.78	Low
Consult counsellors after online exploration	2.49	0.76	Low
Overall	2.73	0.49	Moderate

The findings indicate moderate overall engagement in digital career exploration. Students reported relatively high use of social media and online searches but low use of professional networking platforms and AI-specific career tools.

Research Question 4

What relationship exists among AI literacy, career adaptability, digital career exploration and career readiness?

Table 6 Correlation Matrix

Variable	1	2	3	4
i. AI literacy	1.00			
ii. Career adaptability	.46**	1.00		
iii. Digital career exploration	.53**	.49**	1.00	
iv. Career readiness	.58**	.64**	.61**	1.00

Note. ** $p < .01$.

The results show significant positive relationships among all four variables. Career adaptability had the strongest relationship with career readiness ($r = .64$), followed by digital career exploration ($r = .61$) and AI literacy ($r = .58$). The findings suggest that students with stronger AI literacy, greater career adaptability and more active digital career exploration tend to demonstrate higher levels of career readiness.

Research Question 5

What are the predictive contributions of AI literacy, career adaptability and digital career exploration to career readiness?

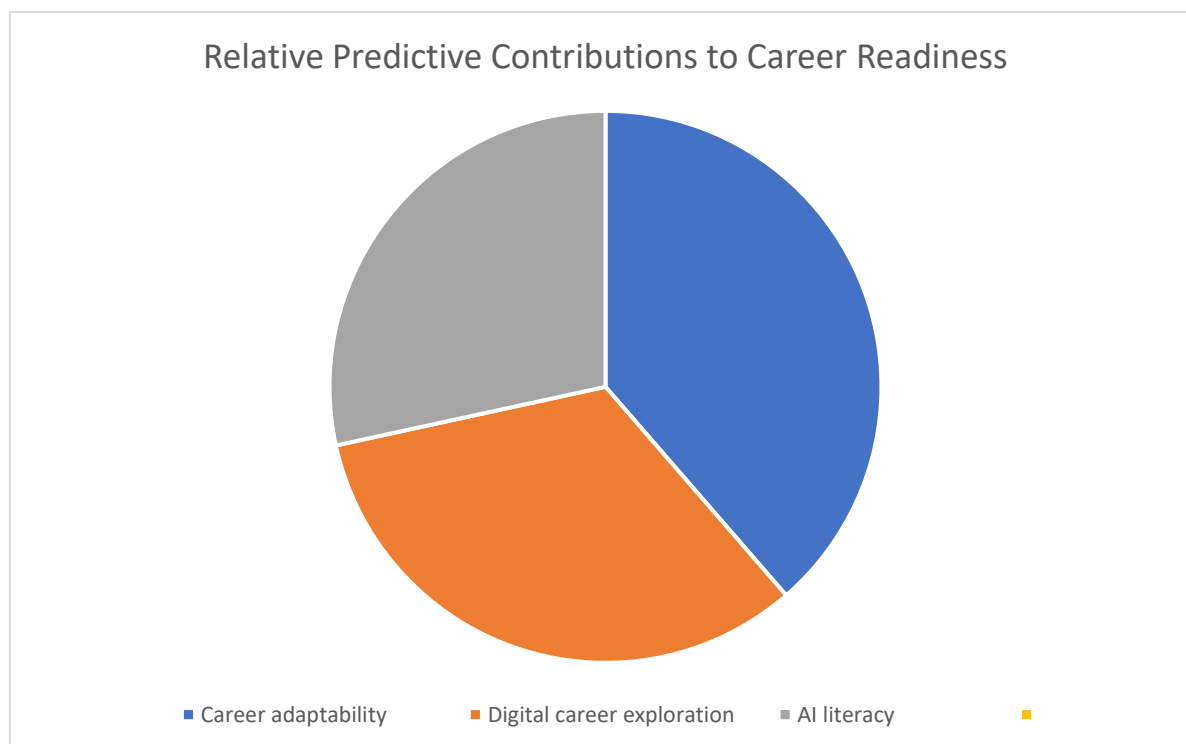
Table 7 Multiple Regression Predicting Career Readiness

Predictor	B	SE B	β	t	p
Constant	0.71	0.19	—	3.74	<.001
AI literacy	0.24	0.06	.25	4.02	<.001
Career adaptability	0.31	0.06	.34	5.18	<.001
Digital career exploration	0.27	0.06	.29	4.46	<.001

$R = .72$; $R^2 = .52$; Adjusted $R^2 = .51$; $F(3, 296) = 106.94$, $p < .001$.

The regression model indicates that AI literacy, career adaptability and digital career exploration jointly explain 52% of the variance in career readiness. Career adaptability made the strongest independent contribution ($\beta = .34$), followed by digital career exploration ($\beta = .29$) and AI literacy ($\beta = .25$).

Figure 2 Relative Predictive Contributions to Career Readiness



Relative Predictive Contributions to Career Readiness shows that Career adaptability is $\beta = .34$, Digital career exploration $\beta = .29$ and AI literacy $\beta = .25$

Qualitative Findings

The qualitative component generated five major themes.

Theme 1: Career Information Is Changing Faster Than Counselling Resources

Counsellors reported that students increasingly ask questions about artificial intelligence, remote work, digital entrepreneurship and emerging occupations. However, many school counselling resources continue to focus on conventional occupations.

Theme 2: Students Use AI Before Consulting Counsellors

Counsellors reported that students increasingly obtain career information from search engines, social media and generative AI systems before approaching professional counsellors. This development changes the role of the counsellor from information gatekeepers to information interpreter and verifier.

Theme 3: Counsellor AI Competence Is Limited

A recurring concern was inadequate professional development. Counsellors require training in AI literacy,

digital labour-market information, algorithmic bias, data privacy and ethical AI use.

Theme 4: Digital Inequality May Become Career Inequality

Counsellors emphasised that students without reliable devices or internet connectivity may be disadvantaged as career guidance becomes increasingly digital. This finding reinforces concerns about infrastructure and digital access in Nigerian education.

Theme 5: Human counselling remains indispensable

Counsellors recognised that AI can provide information and personalised suggestions but cannot replace the relational, emotional and contextual dimensions of professional counselling.

Discussion

The findings indicate that students possess moderate AI literacy while demonstrating comparatively stronger career adaptability.

This pattern is important because familiarity with AI does not necessarily translate into an understanding of its implications for employment.

The positive relationship between AI literacy and career readiness supports the growing recognition that

technological literacy is becoming increasingly important in the labour market.

The World Economic Forum (2025) identifies AI and big data and technological literacy among the fastest-growing skill categories towards 2030.

The finding is also consistent with research demonstrating increasing interest in AI literacy within educational contexts.

The strongest relationship identified in the present study was between career adaptability and career readiness.

This finding is particularly important because preparing students for unknown jobs requires an educational philosophy that values adaptability over occupational prediction.

Students cannot be expected to know precisely which occupations will exist in 10 or 20 years.

They can, however, develop the capacity to investigate possibilities, acquire new skills and respond to labour-market changes.

The findings therefore support a shift from **career matching to career navigation**.

Digital career exploration was also positively related to career readiness.

This finding is consistent with the OECD's (2024) argument that digital technologies can expand young people's access to career information and workplace interaction.

However, the relatively low use of AI-specific career tools suggests that students may be active digital users without necessarily being sophisticated digital career researchers.

Students may consume career information through social media without systematically evaluating its reliability.

Career counsellors should therefore help students develop digital career-information literacy.

The regression analysis further indicates that AI literacy, career adaptability and digital career exploration jointly explain a substantial proportion of variation in career readiness.

The finding demonstrates that no single competency is sufficient.

AI literacy without adaptability may not produce effective career decisions.

Likewise, adaptability without knowledge of emerging technologies may leave students unable to recognise new opportunities.

Digital exploration without professional interpretation may expose students to unreliable information.

An integrated model is therefore required.

The qualitative findings reinforce this interpretation.

Counsellors' concerns about inadequate professional development suggest that AI-era career guidance requires investment not only in technological infrastructure but also in human capacity.

This is consistent with the author's earlier research on AI and technology integration in Nigerian education, which identified infrastructure, professional development and institutional support as important conditions for effective technology adoption.

The findings are also consistent with Eze et al. (2025), who found that Nigerian students generally perceived AI-driven personalised career guidance positively while reporting limitations in conventional career guidance services.

The present study extends that evidence by focusing on secondary school students and by emphasising career adaptability as a central outcome.

Implications for Career Counselling

From Occupational Matching to Capability Development

Counsellors should focus less on matching students to fixed occupations and more on developing transferable capabilities.

From Information Provision to Information Interpretation

Students already have access to large quantities of information. The counsellor's value increasingly lies in helping students determine whether information is credible, relevant and personally appropriate.

From One-Time Counselling to Continuous Career Development

Career guidance should become a continuous developmental process beginning in secondary education and continuing through post-secondary education and employment.

From Conventional Aptitude Testing to Dynamic Career Profiling

AI may support dynamic career profiling by combining interests, skills, learning preferences and labour-market information. However, such systems should remain transparent and professionally supervised.

Educational Implications

Schools should integrate AI literacy and future-of-work education into career education programmes.

Table 8 Recommended Components of an AI-Era Career Guidance Curriculum

Area	Suggested focus
AI literacy	AI concepts, generative AI and limitations
Career exploration	Emerging occupations and labour-market trends
Digital literacy	Online information evaluation
Employability	Communication, collaboration and problem-solving
Adaptability	Resilience, flexibility and lifelong learning
Entrepreneurship	Digital enterprise and opportunity recognition
Ethics	Bias, privacy, fairness and responsible AI
Work exposure	Industry visits, mentorship and virtual internships

Policy Implications

The Federal Ministry of Education, state ministries of education, professional counselling associations and relevant educational agencies should develop guidelines for AI-enabled career guidance.

Policy should address:

- i. minimum AI competencies for school counsellors;
- ii. ethical use of student data;
- iii. validation of AI career recommendation systems;
- iv. digital inclusion;
- v. school-industry partnerships;
- vi. access to current labour-market information;
- vii. continuous counsellor professional development; and
- viii. monitoring and evaluation of AI-supported career interventions.

Conclusion

Artificial intelligence is changing not only the jobs students will perform but also the way careers are constructed. Consequently, career guidance must evolve from a model centred on identifying existing occupations to one centred on developing students' capacity to navigate occupational uncertainty. The findings indicate that AI literacy, career adaptability and digital career exploration are important components of future career readiness. However, technology should not be regarded as a substitute for professional counselling. Instead, AI should augment counsellors by expanding access to labour-market information, identifying emerging opportunities and supporting personalised career exploration.

The central argument of this study is that **students should not be trained merely for jobs that exist today; they should be equipped with the capabilities required to**

create, adapt to and succeed in occupations that may not yet exist.

Recommendations

Based on the findings, the following recommendations are made:

- i. **AI literacy should become part of secondary school career education.** Students should understand both the opportunities and limitations of AI.
- ii. **Career guidance should be redesigned around career adaptability.** Students should be taught how to manage uncertainty, occupational transitions and lifelong learning.
- iii. **School counsellors should receive specialised AI training.** Professional development should cover generative AI, labour-market analytics, AI ethics and digital career counselling.
- iv. **Schools should establish AI-supported career information centres.** These centres should provide students with current information about emerging occupations, skills and educational pathways.
- v. **Schools should strengthen school-industry partnerships.** Students should interact with professionals working in emerging technology, creative, entrepreneurial and interdisciplinary fields.
- vi. **AI career guidance must remain human-centred.** AI recommendations should be interpreted by qualified counsellors rather than automatically determining students' career choices.
- vii. **Digital inequality should be addressed.** Government and school authorities should provide

devices, connectivity and digital learning opportunities to disadvantaged students.

- viii. **Career guidance should incorporate entrepreneurship.** Students should be encouraged to view themselves not only as future employees but also as innovators and job creators.
- ix. **Labour-market information should be continuously updated.** Career education materials should reflect changing occupational and skill demands.
- x. **AI career guidance programmes should be empirically evaluated.** Schools should monitor whether AI-supported interventions improve students' career decision-making, adaptability and employability.

Limitations of the Study

The study was limited geographically to selected public secondary schools in Nasarawa State, Nigeria. Consequently, caution should be exercised in generalising the findings to other Nigerian states or educational contexts. The use of self-report measures may also introduce response bias.

The cross-sectional nature of the study limits the ability to establish long-term causal relationships among AI literacy, career adaptability, digital career exploration and career readiness. Future longitudinal research would provide stronger evidence concerning whether AI-oriented career guidance produces sustained improvements in students' career adaptability and employment outcomes.

Suggestions for Further Research

Future studies should:

- i. conduct longitudinal research tracking students from secondary school into higher education and employment;
- ii. compare AI-assisted and conventional career counselling interventions;
- iii. investigate gender differences in AI-related career aspirations;
- iv. examine rural-urban differences in access to AI career guidance;
- v. investigate parents' perceptions of AI-driven career counselling;
- vi. develop and validate culturally responsive AI career guidance systems for Nigerian students;
- vii. examine the effectiveness of AI-supported career coaching;

viii. investigate counsellors' AI literacy and professional readiness; and

- ix. examine how AI career guidance influences students' entrepreneurial intentions.

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Author's Related Research and Scholarly Contribution

The present study forms part of a developing scholarly research trajectory focusing on artificial intelligence, technology integration, digital equity and educational development in Nigeria.

Edinoh et al. (2024) examined AI applications in teaching and research programmes in Nigerian tertiary institutions, establishing the educational relevance of AI within the Nigerian context.

The author's subsequent work on challenges associated with AI in basic education addresses infrastructural limitations, digital literacy, professional development and equitable access.

The author's research on AI-supported educational assessment further contributes an empirical perspective on AI adoption, perception and responsible implementation.

Research on technology integration and the digital divide extends this trajectory by demonstrating that successful technology adoption requires infrastructure, professional competence and institutional support.

The present paper advances this line of inquiry from **AI in education** to **AI for career development**, thereby creating a coherent research pathway:

AI in Nigerian Education → AI Implementation Challenges → AI Literacy → Technology Integration →

Digital Equity → AI-Supported Career Guidance → Future-of-Work Readiness.

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