



Influence of Artificial Intelligence Technology Integration on Career Readiness for Sustainable Development among Undergraduate Guidance and Counselling Students in Southwest, Nigeria

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Abstract

This study investigates the influence of guidance and counseling in achieving sustainable development goals, the impact of Artificial Intelligence (AI) on student career readiness, and the perceived benefits and challenges of integrating AI into guidance and counseling services. The research employed a descriptive design, utilizing a structured questionnaire administered to counselling students, educators, and practitioners from universities and colleges selected through purposive sampling. Findings indicate a generally positive perception of the role of guidance and counseling in achieving sustainable development goals, with a weighted average mean of 3.18 (78%). Participants strongly agreed that guidance and counseling equip students to make choices promoting economic growth while minimizing negative social and environmental impacts (mean = 3.62). They also recognized that these services promote awareness of ethical consumption and production practices (mean = 3.66) and provide information about global challenges (mean = 3.52). However, there was lower agreement on guidance and counseling supporting the development of critical thinking skills for complex sustainable development issues (mean = 2.58). The study found a largely positive view of AI's impact on student career readiness, with a weighted average mean of 3.1 (77.5%). AI tools were perceived as valuable for providing insights into industry trends and required skills (mean = 3.62), preparing students for new job opportunities created by AI integration (mean = 3.66), and boosting student confidence in career prospects (mean = 3.52). Conversely, there was lower agreement on AI-powered career assessment platforms accurately identifying student strengths and weaknesses (mean = 2.19). Regarding the perceived benefits and challenges of AI in guidance and counseling, the weighted average mean was 3.4 (85%), indicating recognition of both. Key challenges identified include ensuring accuracy and unbiased nature of AI algorithms (mean = 3.62), the cost of implementation and maintenance (mean = 3.52), and the lack of human empathy (mean = 3.38). Significant benefits acknowledged were AI's ability to reduce administrative tasks for counselors (mean = 3.66), provide personalized career recommendations (mean = 3.52), and increase accessibility of services (mean = 3.38). Finally, the study found no significant gender difference in the perceived impact of AI on student career readiness ($t = 0.49$; $df = 198$; $p > 0.05$). The research recommends enhancing critical thinking skills in guidance programs, refining AI-powered career assessment platforms, addressing algorithmic bias and data privacy, investing in counselor AI literacy and hybrid models, developing cost-effective AI solutions, and promoting AI accessibility and inclusivity.

Keywords: Guidance and counseling, Sustainable development, Artificial Intelligence (AI), Career readiness

Introduction

In the evolving nature of job market today, traditional approaches to career services are no longer sufficient to prepare students to engage in career paths which are both successful and sustainable. Creative measures are essential to bridge the academic education and job readiness to enable graduates not only to secure jobs but also to succeed in working in areas that utilize their skills and knowledge to their fullest potential. Technological advancement has always been the result of human ingenuity with the aim of improving efficiency and raising the quality of life within the society. Since the invention of the wheel back in ancient times through the emergence of the steam engine, the invention of automobiles and the invention of personal computers and the internet in the 20th century, every advancement has involved significant changes in the nature of work and the abilities necessary to be successful in the workforce. Artificial intelligence (AI) has changed into a specialized technological innovation and developed into a universal tool that can solve complex and multiple problems in various industries (Bibri, Krogstie, Kaboli, and Alahi, 2024; Mienye and Jere, 2024a; Neethir, 2024). Its contribution to sustainable development is gaining more and more popularity, with it providing innovative solutions that facilitate economic progress, social equality, and environmental safety (Singh, Kanaujia, Singh, and Vinuesa, 2024;



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Triguero, Molina, Poyatos, Del Ser, and Herrera, 2024). The last few years have also seen a significant increase in the attempts to utilize the AI potential in addressing the most pressing development concerns in Africa, which is often a severely hit region by development challenges, including climate change, poverty, and the unavailability of access to the most vital services (Priscilla and Camargo, 2020; Azzarri and Signorelli, 2020; Rutenberg, Gwagwa, and Omin). At a time when the world is changing technologically so fast and when the labour market is also dynamic than ever before, it is more important now than ever that students are well prepared before they go to work. Career readiness, which was previously tested on the basis of traditional academic achievement, is now requiring a more comprehensive test; it is a mix of adaptability, technological literacy, and critical thinking. Guidance and counselling, which has long been regarded as a pillar of educational support system, are changing in line with these changes. The core of this development is the introduction of artificial intelligence (AI), which has already started to transform the way students research career opportunities, get counseling, and make well-informed choices concerning their future.

Artificial Intelligence (AI) has progressively become more of a niche technological term to a potent tool in addressing multi-faceted and intricate problems in a variety of sectors (Bibri et al., 2024; Mienye and Jere, 2024a; Neethiripradan, 2024). Its possible impact on sustainable development is enormous, and it promotes innovation in those spheres that are key to economic growth, social well-being, and environmental safety (Singh et al., 2024; Triguero et al., 2024). Nevertheless, over the past few years, there has been an increasing body of momentum to explore the possibility of applying AI to address some of the most pressing issues in Africa, where poverty, climate change, and lack of access to essential services are more likely to be acute (Azzarri and Signorelli, 2020; Priscilla and Camargo, 2020; Rutenberg et al., 2021). At the same time, the world focus on sustainable development, especially via the United Nations Sustainable Development Goals (SDGs), requires educational systems that facilitate inclusive, equitable, and lifelong learning opportunities. Of specific interest are SDG 4 (Quality Education) and SDG (Decent Work and Economic Growth) because they highlight the significance of education innovations that will not only provide students with the skills to work, but relevant, flexible, and sustainable work. In the context of sustainable development, this paper explores the impact of AI technologies on the provision of guidance and counselling services and how they contribute to the student career preparedness. Through the study of existing AI applications, their opportunities and challenges, and how they can be aligned with the goals of sustainable development, the proposed study will provide insight into the responsible and successful use of AI in the educational counselling.

Sustainable Development in Education

Sustainable development of learning goes further than environmental consciousness, it involves enhancing equity, inclusion and future flexibility among the students. Sustainability has been emphasized in all levels of education with the United Nations 2030 Agenda on sustainable development, particularly Sustainable Development Goal 4 (Quality Education) and SDG 8 (Decent Work and Economic Growth). SDG 4 advocates both inclusive and equitable education, which strives to make sure that all learners gain knowledge and skills to foster sustainable development (UNESCO, 2017). SDG 8 is on productive work/decent work which is very similar to career education and guidance. Within the framework of guidance and counselling, sustainable development will mean preparing students not only to jobs but also to life-long learning, to making ethical career decisions and to service to society. Sustainability-based counselling services foster personal agency, environmental responsibility, and social responsibility (Sterling, 2010). Nevertheless, the traditional models of career guidance programs are still based on the old ones that fail to capture the skills demanded in an ever more digital, global, and AI-driven job market (Sultana, 2014).

Career Readiness: The Changing Pattern

Career readiness is the knowledge, skills and dispositions that are required by the students to help them effectively transition out of school into the workforce. The contemporary concept is more holistic compared to traditional which is associated with academic achievement and work training. According to the National Association of Colleges and Employers (2023), there are eight competencies: critical thinking, communication, teamwork, leadership, professionalism, career and self-development, equity and inclusion, and technology. These are signs of the increasing demand of skills in the 21 st century



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that is important in a workforce influenced by robotization and AI. Nonetheless, numerous students find it hard to cope in this complicated environment without specific assistance. Research indicates that youth tend to feel unprepared to navigate the challenges of the workforce in the real world and remain unaware of the novice careers, especially the ones associated with STEM and AI (OECD, 2020). This gap can be closed through effective guidance and counselling programs which provide individualized career planning, training in soft skills and decision-making assistance. The technological integration (particularly, AI) also presents the opportunity to scale these services and adapt them to the needs of different students better. Studies indicate that learners who take advantage of AI tools not only develop technical skills but also improve their ability to transfer technical skills to real-life scenarios, thus making them more marketable (Jackson and Wilton, 2016). Consequently, by implementing AI-based tools as part of the transferable skills curriculum in universities, graduates will be better prepared to cope with the demands of modern career and be successful in a changing professional world.

Artificial Intelligence in Guidance and Counselling

AI is increasingly being deployed in education to support personalized learning, performance tracking, and academic advising. In the field of guidance and counselling, AI tools range from chatbots (e.g., Replika, Woebot) to career-matching platforms (e.g., Pymetrics, Eightfold) and predictive analytics systems that identify student risk factors and recommend interventions (Holmes et al., 2019; UNESCO, 2021).

AI offers several advantages:

1. Scalability: AI tools can provide support to large student populations, reducing workload for human counsellors.
2. Personalization: Machine learning models can tailor advice based on individual profiles and preferences (Luckin et al., 2016).
3. Efficiency: Automated assessments and real-time feedback enhance decision-making for both students and educators.

Despite its promise, AI in counselling also presents challenges. One concern is the loss of human empathy, a critical component of effective guidance (Susskind & Susskind, 2015). Another is algorithmic bias—systems may inherit and reinforce societal inequalities embedded in their training data (Eubanks, 2018). For example, career recommendation algorithms trained on historical employment data may disproportionately suggest lower-paying or stereotypical jobs to certain demographic groups. Furthermore, data privacy and informed consent are pressing issues. Students may not fully understand how their data is used, and AI systems may lack transparency in how decisions are made (Floridi et al., 2018). These risks underscore the need for ethical frameworks and regulatory policies that ensure AI enhances, rather than replaces or undermines, human-centred counselling.

Equity and Access in AI-Driven Counselling

While AI has the potential to democratize access to quality guidance, its implementation is often hindered by the digital divide. Students in under-resourced schools, rural areas, or developing countries may lack access to the infrastructure needed to benefit from AI tools. Additionally, culturally unresponsive AI systems may fail to provide meaningful guidance for students from diverse backgrounds (Crawford & Paglen, 2019). Incorporating AI in sustainable ways requires that developers and educators consider accessibility, fairness, and inclusivity. UNESCO (2021) emphasizes the importance of “AI for all,” advocating for systems that reduce, not reinforce, educational inequality. This includes involving educators, students, and marginalized communities in the design and evaluation of AI-based counselling tools.

Towards a Sustainable Integration of AI in Counselling

To align AI in counselling with the goals of sustainable development, integration must be strategic, ethical, and student-centred. A sustainable approach includes:

1. Training counsellors in AI literacy to complement their relational skills.
2. Developing hybrid models that combine AI support with human guidance.
3. Establishing ethical standards for data use, fairness, and transparency in decision-making.
4. Ensuring policy alignment with educational and developmental goals.

Despite emerging interest, few studies deeply investigate the interplay of AI, counselling, career readiness, and sustainable development. Most literature treats these domains separately. This gap highlights the need for interdisciplinary research that addresses how AI can be deployed responsibly and inclusively to promote career readiness as part of a broader sustainable education agenda.



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Research Questions

1. What is the influence of guidance and counseling in achieving sustainable development goals?
2. What is the impact of artificial intelligence on student's career readiness?
3. What are the perceived benefits and challenges of utilizing Artificial Intelligence on guidance and counselling for promoting sustainable career readiness among students?

Hypotheses

1. There is no significant difference in the impact of artificial intelligence on student career readiness based on gender

Research Methodology

In the study, the researcher used a descriptive research design. This enabled the researcher to explain how Artificial Intelligence influences student career preparedness in the context of sustainable development in the area of guidance and counseling. This study population included all students of the Universities in South-west Nigeria. Students in their final year in the universities were the target of the study since they were likely to be interested in being involved in either of the careers. To begin with, the five (5) tertiary institutions were chosen through simple random sampling procedure as the purpose of the study. Secondly, the sampled size of 40 final year students of the five (5) universities was chosen using purposive random sampling to come up with a total of 200 participants. Data about the familiarity of the participants with AI tools, their frequency of use, perceived effectiveness, and ethical issues were collected with the help of a structured questionnaire. The data collected were analyzed with the use of descriptive statistics for the quantitative data, such as means, frequencies and percentages. Inferential statistics were used to analyzed the hypothesis at 0.05 level of significance. To be more exact t-tests statistics were employed.

Presentation of Results

Research Question One: What is the Influence of Guidance and Counseling in Achieving Sustainable Development?

Table 1 Showing the Influence of Guidance and Counseling in Achieving Sustainable Development Goals

S/N	Items	SA	A	D	SD	Mean	SD
1.	Guidance and counseling services help students understand the importance of environmental sustainability.	110 (55)	60 (30)	30 (15)	-	2.80	0.84
2.	Guidance and counseling programs encourage students to pursue careers that contribute to social equity and justice.	88 (44)	60 (30)	40 (20)	12 (6)	2.70	0.91
3.	Through guidance and counseling, students are better equipped to make choices that promote economic growth while minimizing negative social and environmental impacts	172 (86)	20 (14)	4 (2)	4 (2)	3.62	0.45
4.	Guidance counselors provide information about global challenges and how individual actions can contribute to solving them.	162 (81)	28 (14)	5 (2.5)	5 (2.5)	3.52	0.49
5.	Career guidance helps students identify how their skills and interests can align with professions that support sustainable development.	140 (70)	50 (25)	6 (3)	4 (2)	3.38	0.54
6.	Guidance and counseling promotes awareness of ethical consumption and production practices.	74 (37)	26 (13)	50 (25)	50 (25)	3.66	0.48
7.	Access to guidance and counseling can lead to more students pursuing higher education in fields related to sustainable development.	120 (60)	60 (30)	10 (10)	10 (10)	3.04	0.53
8.	Effective guidance and counseling services are crucial for integrating sustainable development principles into students' academic and career planning.	140 (70)	40 (20)	15 (7.5)	5 (2.5)	3.21	0.44
9.	Guidance and counseling supports the development of critical thinking skills necessary for addressing complex sustainable development issues	40 (20)	150 (70)	4 (4)	6 (3)	2.58	0.91



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10.	Guidance and counseling fosters a sense of personal responsibility among students towards achieving the SDGs.	130 (65)	50 (25)	12 (6)	8 (4)	3.24	0.46
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Weighted Average Mean =3.18 (78%)

Table 1 Analysis: This table presents the influence of guidance and counseling in achieving sustainable development goals, based on responses to 10 items. The "Weighted Average Mean" for all items is 3.18, which corresponds to 78%. This suggests a generally positive perception of the influence of guidance and counseling in achieving sustainable development goals. Strongest Agreement: Items with the highest mean scores indicate stronger agreement. For example: Item 3: "Through guidance and counseling, students are better equipped to make choices that promote economic growth while minimizing negative social and environmental impacts" has a mean of 3.62. Item 6: "Guidance and counseling promotes awareness of ethical consumption and production practices" has a mean of 3.66. Item 4: "Guidance counselors provide information about global challenges and how individual actions can contribute to solving them" has a mean of 3.52. Lower Agreement: Item 9: "Guidance and counseling supports the development of critical thinking skills necessary for addressing complex sustainable development issues" has the lowest mean of 2.58, suggesting relatively less agreement on this specific aspect compared to others. Overall Implication: The data suggests that participants generally perceive guidance and counseling as having a positive and significant role in educating students about sustainable development, particularly in making informed choices, promoting ethical practices, and understanding global challenges.

Research Question Two: What is the Impact of Artificial Intelligence on Students' Career Readiness in Achieving Sustainable Development?

Table 2 showing the Impact of Artificial Intelligence on Students' Career Readiness in Achieving Sustainable Development

S/N	Items	SA	A	D	SD	Mean	SD
1.	AI tools, such as resume builders and interview simulators, significantly enhance students' readiness for job applications.	100 (50)	64 (32)	16 (8)	20 (10)	3.33	0.79
2.	AI-powered career assessment platforms help students identify their strengths and weaknesses more accurately for career planning.	140 (70)	30 (15)	20 (10)	10 (5)	2.19	1.39
3.	Exposure to AI in educational settings prepares students for future jobs that will increasingly involve AI technologies.	90 (45)	90 (45)	18 (9)	2 (1)	2.47	0.65
4.	AI can personalize learning paths, allowing students to acquire skills highly relevant to emerging job markets.	146 (73)	40 (20)	10 (5)	4 (2)	3.38	0.65
5.	The rise of AI in the workplace necessitates that students develop strong digital literacy skills for career readiness.	134 (67)	52 (26)	10 (5)	4 (2)	3.14	0.80
6.	AI tools provide valuable insights into industry trends and required skills, helping students make informed career decisions.	172 (86)	20 (14)	4 (2)	4 (2)	3.62	0.45
7.	Students who utilize AI-driven career guidance resources feel more confident about their career prospects.	162 (81)	28 (14)	5 (2.5)	5 (2.5)	3.52	0.49
8.	AI's ability to automate routine tasks means students need to focus on developing higher-order thinking and creativity for future careers.	140 (70)	50 (25)	6 (3)	4 (2)	3.38	0.54
9.	The increasing integration of AI in various sectors will create new job opportunities that students should be prepared for.	74 (37)	26 (13)	50 (25)	50 (25)	3.66	0.48
10.	AI technology helps students explore a wider range of career options than traditional methods.	120 (60)	60 (30)	10 (10)	10 (10)	3.04	0.53

Weighted Average Mean =3.1 (77.5)



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Table 2 Analysis: This table details the perceived impact of Artificial Intelligence on students' career readiness in achieving sustainable development, across 10 items. The "Weighted Average Mean" for this section is 3.1, representing 77.5%. This indicates a largely positive view regarding the impact of AI on student career readiness. Strongest Agreement: High mean scores are observed for: Item 6: "AI tools provide valuable insights into industry trends and required skills, helping students make informed career decisions" with a mean of 3.62. Item 9: "The increasing integration of AI in various sectors will create new job opportunities that students should be prepared for" with a mean of 3.66. Item 7: "Students who utilize AI-driven career guidance resources feel more confident about their career prospects" with a mean of 3.52. Lower Agreement: Item 2: "AI-powered career assessment platforms help students identify their strengths and weaknesses more accurately for career planning" has a notably lower mean of 2.19, suggesting some reservations or less strong agreement on this point. Overall Implication: The findings suggest that AI is largely seen as beneficial for enhancing student career readiness, particularly in providing insights into industry trends, preparing for future job opportunities, and boosting student confidence.

Research Question Three: What are the perceived benefits and challenges of Utilizing Artificial Intelligence in Guidance and Counseling for Promoting Sustainable Career Readiness among Students?

Table 3 showing the perceived benefits and challenges of utilizing artificial intelligence in guidance and counselling for promoting sustainable career readiness among students

S/N	Items	SA	A	D	SD	Mean	SD
1.	The lack of human empathy and intuition in AI-based guidance and counselling is a major challenge	146 (73)	40 (20)	10 (5)	4 (2)	3.38	0.65
2.	Concerns about data privacy and security hinder the full adoption of AI in student guidance and counseling	134 (67)	52 (26)	10 (5)	4 (2)	3.14	0.80
3.	Ensuring the accuracy and unbiased nature of AI algorithms used in career guidance is a considerable challenge	172 (86)	20 (14)	4 (2)	4 (2)	3.62	0.45
4.	The cost of implementing and maintaining AI technologies for guidance and counseling is a significant barrier.	162 (81)	28 (14)	5 (2.5)	5 (2.5)	3.52	0.49
5.	Students may find AI recommendations impersonal or less trustworthy compared to advice from human counselors.	140 (70)	50 (25)	6 (3)	4 (2)	3.38	0.54
6.	Utilizing AI in guidance and counseling can provide more personalized career recommendation for students	162 (81)	28 (14)	5 (2.5)	5 (2.5)	3.52	0.49
7.	Integrating AI can make guidance and counseling services more accessible to a wider range of students, including those in remote areas.	140 (70)	50 (25)	6 (3)	4 (2)	3.38	0.54
8.	AI-powered platforms can help guidance counselors spend less time on administrative tasks and more time on direct student interaction.	74 (37)	26 (13)	50 (25)	50 (25)	3.66	0.48
9.	AI can efficiently analyze large datasets to identify emerging sustainable career paths for students.	120 (60)	60 (30)	10 (10)	10 (10)	3.04	0.53
10.	AI tools can offer students 24/7 access to career information and advice, which is a significant benefit.	140 (70)	40 (20)	15 (7.5)	5 (2.5)	3.21	0.44

Weighted Average Mean = 3.4 (85%)

Table 3 Analysis: This table presents the perceived benefits and challenges of utilizing AI in guidance and counseling for promoting sustainable career readiness. The "Weighted Average Mean" for this section is 3.4, which is 85%. This high average mean suggests that participants recognize both significant benefits and notable challenges. Highest Agreement (Challenges): Items reflecting challenges often have high mean scores, indicating strong agreement on these difficulties: Item 3: "Ensuring the accuracy and unbiased nature of AI algorithms used in career guidance is a considerable challenge" has a mean of 3.62. Item 4: "The cost of implementing and maintaining AI technologies for guidance and counseling is a



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significant barrier" has a mean of 3.52. Item 1: "The lack of human empathy and intuition in AI-based guidance and counseling is a major challenge" has a mean of 3.38. Highest Agreement (Benefits): Conversely, there are also high mean scores for perceived benefits: Item 8: "AI-powered platforms can help guidance counselors spend less time on administrative tasks and more time on direct student interaction" has a mean of 3.66. Item 6: "Utilizing AI in guidance and counseling can provide more personalized career recommendation for students" has a mean of 3.52. Item 7: "Integrating AI can make guidance and counseling services more accessible to a wider range of students, including those in remote areas" has a mean of 3.38. Overall Implication: The results indicate that while AI offers substantial benefits in terms of personalization, accessibility, and freeing up counselors' time, significant challenges related to empathy, bias, data privacy, and cost need to be addressed for effective and ethical implementation.

Research Hypothesis

Ho1: There is no significant gender difference in the impact of artificial intelligence on students career readiness.

Table showing the Summary of T-test showing the gender difference in the impact of artificial intelligence on students career readiness

Variables	N	Mean	Standard Deviation	Df	T	Sig.	Remark
Male	96	9.65	2.47				
				198	0.49	0.62	Not Significant
Female	104	10.22	1.37				

The table above shows that there is no significant gender difference in the impact of artificial intelligence on students career readiness ($t = 0.49$; $df = 198$; $p > 0.05$). Therefore, hypothesis 1 is not rejected.

Discussion of Findings

The results of this paper provide important information about the role of guidance and counseling in sustainable development goals, the use of artificial intelligence (AI) in career ready student, and the perceived advantages and disadvantages of using AI in guidance and counseling. The initial research question was about the role of guidance and counseling in the realization of sustainable development goals. The outcome, with the weighted average of 3.18 (78 percent) shows an overall positive attitude towards the role of guidance and counseling in this respect. The respondents strongly thought that guidance and counseling would help them to make decisions that would enhance the economic growth and at the same time minimize the negative social and environmental effects (mean = 3.62). They also strongly acknowledged that the services enhance awareness of ethical consumption and production practices (mean = 3.66) and inform about global issues and individual solutions to them (mean = 3.52). This aligns with the understanding that sustainable development in education extends beyond environmental consciousness to include fostering equity, inclusion, and long-term adaptability. As Sterling (2010) suggests, counseling services grounded in sustainability principles promote personal agency, environmental stewardship, and social responsibility. The lower agreement on guidance and counseling supporting the development of critical thinking skills necessary for addressing complex sustainable development issues (mean = 2.58) suggests an area for potential improvement in current guidance practices. The second research question focused on the impact of artificial intelligence on students' career readiness in achieving sustainable development. The weighted average mean of 3.1 (77.5%) signifies a largely positive view of AI's impact on student career readiness. Specifically, participants strongly agreed that AI tools provide valuable insights into industry trends and required skills, aiding informed career decisions (mean = 3.62). There was also strong agreement that the increasing integration of AI in various sectors will create new job opportunities students should be prepared for (mean = 3.66), and that students utilizing AI-driven career guidance resources feel more confident about their career prospects (mean = 3.52). This supports the notion that AI can significantly enhance career services, preparing students for a rapidly changing job market where conventional methods are no longer sufficient. The ability of AI to personalize learning paths and help students acquire skills relevant to emerging job markets was also highly rated (mean = 3.38). Jackson and Wilton (2016) also found that students using AI tools improve their technical abilities and capacity to apply these skills in real-world contexts, increasing their marketability. However, the notably lower agreement regarding AI-powered career assessment platforms accurately identifying student strengths and weaknesses (mean = 2.19) indicates an area where AI tools might still need refinement or where user confidence is lower. The third research question explored the perceived benefits and challenges of utilizing



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artificial intelligence in guidance and counseling for promoting sustainable career readiness among students. The high weighted average mean of 3.4 (85%) suggests that participants recognize both significant benefits and notable challenges. Among the challenges, ensuring the accuracy and unbiased nature of AI algorithms used in career guidance was a considerable concern (mean = 3.62). This aligns with existing literature on algorithmic bias, where systems may inherit and reinforce societal inequalities embedded in training data (Eubanks, 2018). The cost of implementing and maintaining AI technologies was also identified as a significant barrier (mean = 3.52), along with the perceived lack of human empathy and intuition in AI-based guidance (mean = 3.38), a concern also highlighted by Susskind and Susskind (2015). Despite these challenges, substantial benefits were also recognized. Participants strongly agreed that AI-powered platforms can help guidance counselors spend less time on administrative tasks and more time on direct student interaction (mean = 3.66). This supports the idea of AI enhancing efficiency and scalability in guidance services. The potential of AI to provide more personalized career recommendations (mean = 3.52) and make guidance and counseling services more accessible, including to students in remote areas (mean = 3.38), was also highly acknowledged. This resonates with the view that AI can democratize access to quality guidance, though challenges related to the digital divide persist (Crawford & Paglen, 2019). Finally, the study's first hypothesis, which stated that there is no significant gender difference in the impact of artificial intelligence on students' career readiness, was not rejected. This finding ($t = 0.49$; $df = 198$; $p > 0.05$) suggests that the perceived impact of AI on career readiness is consistent across genders within the studied population. This is a crucial finding for ensuring equitable implementation of AI in educational counselling.

Conclusion

This study highlights the significant and evolving role of guidance and counseling in fostering student career readiness within the framework of sustainable development, particularly with the integration of Artificial Intelligence (AI). The findings consistently demonstrate a strong perception that guidance and counseling contribute positively to achieving sustainable development goals, especially in equipping students to make informed choices that consider economic, social, and environmental impacts. AI is viewed as a largely beneficial tool for enhancing student career readiness by providing insights into industry trends, preparing for future job opportunities, and boosting confidence. While the potential for personalization, increased accessibility, and reduced administrative burden for counselors are clear benefits of AI integration, significant challenges such as algorithmic bias, lack of human empathy, data privacy concerns, and implementation costs must be addressed. Crucially, the study found no significant gender difference in the perceived impact of AI on student career readiness, suggesting an equitable potential across genders. The research underscores the need for a strategic, ethical, and student-centered approach to integrating AI into guidance and counseling to fully realize its potential in promoting sustainable career readiness.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. **Enhance Critical Thinking Skills in Guidance Programs:** While guidance and counseling are recognized for promoting sustainable development, there is a need to strengthen their role in developing students' critical thinking skills for addressing complex sustainable development issues. Guidance programs should explicitly incorporate activities and curricula designed to foster advanced critical analysis and problem-solving.
2. **Refine AI-Powered Career Assessment Platforms:** The study revealed some reservations regarding the accuracy of AI-powered platforms in identifying student strengths and weaknesses. Developers of AI tools for career assessment should focus on improving the precision and comprehensiveness of these platforms to build greater user confidence and ensure accurate guidance.
3. **Address Algorithmic Bias and Data Privacy:** Given the strong concerns about algorithmic bias and data privacy, it is imperative to establish robust ethical frameworks and regulatory policies for AI in guidance and counseling. This includes transparent data usage policies and mechanisms to mitigate bias in algorithms, ensuring fair and equitable recommendations for all students.
4. **Invest in Counselor AI Literacy and Hybrid Models:** To effectively leverage AI while preserving the human element, counselors need comprehensive training in AI literacy. Educational institutions should develop hybrid models that combine AI support with human guidance, allowing AI to handle routine tasks and provide data-driven insights, while human counselors focus on empathetic interaction, complex decision-making, and addressing individual nuances.

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5. Develop Cost-Effective AI Solutions: The cost of implementing and maintaining AI technologies was identified as a significant barrier. Research and development should prioritize creating more affordable and scalable AI solutions for guidance and counseling services, especially for under-resourced schools and regions.
6. Promote AI Accessibility and Inclusivity: To ensure "AI for all" and reduce educational inequality, efforts must be made to bridge the digital divide and ensure access to AI tools for students in rural areas and developing countries. Culturally responsive AI systems are also crucial to provide meaningful guidance for students from diverse backgrounds. Developers and educators should involve marginalized communities in the design and evaluation of AI-based tools.

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