INFLUENCE OF ARTIFICIAL INTELLIGENCE ON STUDENTS' CRITICAL THINKING AND PROBLEM-SOLVING SKILLS IN BUSINESS AND ENTREPRENEURSHIP EDUCATION IN KWARA STATE

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Abstract
This study examines the Influence of Artificial Intelligence on students' Critical thinking and Problem-solving Skill in Business and Entrepreneurship Education in Kwara State, Nigeria. Two purposes were raised from which two research questions and two hypotheses were generated. A quantitative explanatory study strategy was employed, utilizing primary data gathered via structured questionnaires distributed to 150 students from three universities in the state. The sample was intentionally chosen to encompass essential factors, such as the frequency of AI tool utilization, degrees of AI adoption, and students' self-assessed problem-solving and critical thinking skills. Data analysis utilized both descriptive and inferential statistical techniques. The regression models indicate a moderate positive association between Artificial Intelligence and critical thinking skills, and a moderate positive correlation between Artificial Intelligence and problem-solving abilities. The findings indicate that although Artificial Intelligence markedly improves students' critical thinking and problem-solving abilities, there is an urgent necessity for organized Artificial Intelligence training initiatives and faculty development. The study concludes that Artificial Intelligence significantly influences students' Critical thinking and Problem-solving Skill in Business and Entrepreneurship Education in Kwara State. It was recommended that incorporating formal AI training programs that emphasize AI technologies, business applications, and ethical considerations into business and entrepreneurship education is highly required and should be championed by institutions.

Keywords
Artificial Intelligence, Problem-Solving Skills, Critical Thinking, Business Education, and Entrepreneurship Education

Introduction

Imagine a future in which artificial intelligence (AI) actively changes how students learn and solve problems, in addition to helping with daily duties. This shift is already occurring in the field of education. AI is no longer a distant concept but a powerful force influencing how students address challenges, particularly in Nigeria, where the demand for entrepreneurial talent is expanding rapidly. As the global economy advances, the capacity to think critically and generate innovative solutions has never been more crucial. The

worldwide education sector is beginning to utilize AI in numerous ways, from personalized learning to real-time feedback, molding more targeted and efficient educational experiences. According to a 2021 research by Research and Markets, the global AI in education market is anticipated to develop at a CAGR of 32.9% from 2021 to 2028, reaching $20.8 billion by 2028. This tremendous increase highlights the vast potential for AI to change educational landscapes worldwide. In business and entrepreneurship education, AI tools such as intelligent tutoring systems, predictive analytics, and personalized learning platforms are being used to build dynamic, interactive learning environments. These tools challenge students to engage with complicated business problems in real-time, encouraging critical thinking and problem-solving skills (Mahmoud & Sørensen, 2024).

In Nigeria, business and entrepreneurial education is vital for economic progress, and the potential of AI in this field is huge. The Statista Market Forecast 2025 forecasts the AI market in Nigeria to reach US$1.40 billion by 2025, with a CAGR of 27.08% from 2025 to 2030, reaching US$4.64 billion by 2030. However, despite the tremendous rise of AI in numerous industries, it was observed that the integration of AI into education remains limited, particularly in some institutions in Kwara State. A survey by Agarry et al. (2022) revealed a significant gap in AI competency among primary education undergraduates in Kwara State, pointing to challenges such as inadequate infrastructure, limited training, and insufficient access to digital tools. This gap gives a great opportunity to examine how AI may be leveraged to boost problem-solving skills among business and entrepreneurship students in the region. Problem-solving is a vital talent for entrepreneurs, who must negotiate difficult corporate situations. A report by The Guardian Nigeria (2020) highlighted inadequate financial management as a key reason of SME failures, frequently coming from bad decision-making in areas like resource allocation, investment, and risk assessment. By integrating AI into education, students may be equipped with advanced tools to analyze data, forecast consequences, and design new solutions skills crucial for future entrepreneurs. AI can replicate real-world business scenarios, enabling students to build adaptive problem-solving skills that are directly applicable to the issues they will confront in the corporate world. This paper aims to fill the research vacuum on the influence of AI on students' critical thinking and problem-solving skills in institutions in Kwara State, Nigeria. It studies how AI-driven tools and technologies influence business and entrepreneurship students' capacity to think critically, evaluate complicated challenges, and produce new solutions. Through this analysis, the study hopes to provide useful insights into AI's potential to enhance educational experience, equipping students with the required abilities to flourish in an increasingly competitive and digital business environment.

Research Questions:

1. What is the influence of Artificial Intelligence on the critical thinking skills of business and entrepreneurship students in Kwara State?
2. What is the influence of Artificial Intelligence on the problem-solving skills of business and entrepreneurship students in Kwara State?

Research Hypotheses:

H_{01}: Artificial Intelligence have no significant influence on the critical thinking skills of business and entrepreneurship students in Kwara State.

H_{02}: Artificial Intelligence have no significant influence on the problem-solving skills of business and entrepreneurship students in Kwara State.

Literature Review

Artificial Intelligence in Education

Artificial Intelligence (AI) has swiftly transformed numerous sectors, with education emerging as a crucial area of innovation. Over the past decade, AI technologies include machine learning algorithms, natural language processing, and intelligent tutoring systems have altered traditional teaching and learning methodologies. The worldwide AI education industry epitomizes this trend, estimated to develop from $1.1 billion in 2020 to $6 billion by 2025 (All About AI, 2025), showing the growing significance of AI in enhancing student learning experiences and outcomes. The transformative promise of AI in education lies in

its power to give individualized learning, provide real-time feedback, and reduce administrative operations. In higher education, AI-driven platforms, such as intelligent tutoring systems and virtual learning environments, provide adaptive learning, where both content and exams are adapted to individual student needs. Research by Holmes et al. (2021) reveals that AI-powered tools dramatically increase student performance by tailoring learning pathways, hence enabling deeper knowledge and improved academic outcomes.

In the framework of business and entrepreneurial education, AI acquires an even more significant role. By modeling real-world business settings, AI lets students to engage in dynamic, interactive learning that replicates complicated market environments (Iqbal et al., 2024). Such immersive experiences not only bridge theory and practice but also promote critical thinking, decision-making, and problem-solving abilities that are crucial for entrepreneurial success. Consequently, AI acts not just as a technology help but as a vital enabler of critical professional competencies, equipping students to traverse the challenges of contemporary corporate environments with confidence and ingenuity.

Problem-Solving Skills in Business Education

Problem-solving skills are crucial in business and entrepreneurship education, since they prepare students to negotiate complex and dynamic difficulties in the modern business environment. The World Economic Forum (2020) cites problem-solving, critical thinking, and creativity as among the most sought-after skills by employers in the 21st century. For business students, these competencies are crucial for finding new solutions, analyzing risks, and adjusting to quickly altering global marketplaces. Traditionally, business education has nurtured these skills through case studies, simulations, and interactive learning experiences. However, the introduction of Artificial Intelligence (AI) is altering the way problem-solving is taught and practiced. Students can test and hone their problem-solving skills in dynamic, controlled environments with AI-powered tools like business simulations, scenario-based learning, and predictive analytics. These systems offer real-time feedback, enabling students to evaluate the effectiveness of their techniques and adapt their approaches accordingly. In a research by Soyebi et al. (2023), students who engaged with AI-based simulations in business courses displayed considerably greater problem-solving abilities and improved decision-making results compared to peers who relied only on traditional approaches. Beyond technical problem-solving, AI also increases critical thinking skills by presenting students with complicated, real-time scenarios that need analysis and educated decision-making, AI develops deeper cognitive engagement. Daugherty and Wilson (2021) highlight that AI can guide learners through systematic processes of inquiry, enabling them to evaluate alternative business strategies, foresee repercussions, and make reasoned decisions. In this sense, AI not only complements traditional instructional approaches but also boosts students' aptitude for strategic thinking, preparing them to flourish in more competitive and technology-driven business settings.

AI and Critical Thinking

Critical thinking is another ability that AI can dramatically influence in business education. Students are typically needed to evaluate difficult problems, analyze multiple facts, and consider diverse perspectives before making informed conclusions. AI technologies enhance this process by delivering data-driven insights and interactive simulations that challenge students to think critically and design effective answers. For instance, Obaje (2025) evaluated the impact of AI-based learning systems on university students' critical thinking abilities. The study indicated that students engaging with AI-powered platforms demonstrated better critical thinking, since the systems fostered deep engagement with content and demanded decision-making based on assessed data. In a business education environment, this implies that AI not only enhances students' problem-solving ability but also develops strategic thinking in evaluating and refining solutions.

Moreover, AI offers real-time, interactive learning experiences that further develop problem-solving and critical thinking skills. In entrepreneurship courses, AI-driven technologies can replicate market dynamics, customer behavior, and operational difficulties, offering students with quick feedback and data-driven insights. As observed by Kurni and KG (2024), these simulations encourage students to change their

tactics dynamically, boosting analytical reasoning and strategic decision-making under realistic business situations.

AI Adoption in Nigerian Business Education

In the context of Nigeria, the adoption of Artificial Intelligence (AI) in business and entrepreneurial education continues at an early stage, particularly in places such as Kwara State. While digital technology integration in education is gradually rising, research reveal that AI application in Nigerian classrooms is still limited. Agarry et al. (2022), for instance, showed a large gap in AI proficiency among the primary education undergraduates in Kwara State, attributing this to inadequate infrastructure, limited access to AI technologies, and insufficient AI training for educators. Despite these challenges, the potential of AI in Nigerian business education is enormous, since the country's rapidly rising digital economy puts business education as a crucial driver of economic progress. Integrating AI into courses could provide Nigerian students with the abilities needed to compete worldwide. AI usage in Nigerian business education is still evolving. Emefiele (2025) explored the role of AI in promoting 21st-century skills development and concluded that while there is understanding of AI's value, many educators remain inexperienced with practical integration tactics. The study calls for targeted educator training and the development of AI-driven educational tools to boost teaching efficacy. Similarly, Iyoha et al. (2025) stressed the potential of AI to develop problem-solving, critical thinking, and entrepreneurial mindsets but cited challenges such as limited digital literacy, resource constraints, and high implementation costs. Despite these hurdles, AI holds revolutionary potential in teaching students with abilities required to navigate modern business environments. Empirical studies on AI-driven technologies in Nigerian business education reveal conflicting results. Liadi (2025) revealed that AI applications significantly improved opportunity perception and decision-making but had statistically insignificant effects on problem-solving abilities, suggesting a need for more effective, practically oriented AI integration. Beyond Nigeria, research by Watcharawat et al. (2025) in Thailand reveals that AI literacy greatly enhances both systematic and intuitive thinking, hence increasing complex problem-solving skills. Similar to this, Igomu et al. (2024) noted that AI applications, such as automation, personalized learning, and predictive analytics, are useful in fostering problem-solving skills in business and educational settings. However, they also pointed out drawbacks, such as a lack of AI literacy, ethical issues, and legal restrictions.

Despite its potential, substantial difficulties prevent AI implementation in Nigerian business education. Asiyanbola et al. (2025) observed that poor AI awareness and adoption among educators limit its influence, even when positive sentiments about AI exist. The study underlines the need for a comprehensive focus on exposing students to relevant skills required to survive in the business world in the era of AI.

Method

This study utilizes a quantitative research approach to assessing the influence of Artificial Intelligence (AI) on student critical thinking skills and problem-solving skills in business and entrepreneurship education in Institutions in Kwara State. The research focuses on 300L and 400L students from three universities offering business education in Kwara State. Namely, University of Ilorin, Al-Halikima University, and Kwara State University. These individuals were chosen due to their substantial exposure to business-related education and their chance of having dealt with AI-driven products in their academic work. A total of 150 students were sampled, comprising 50 students from each university, evenly distributed between 300L and 400L levels. Stratified random sampling was performed to ensure a representative sample that reflects the diversity of students across the three schools. This approach enables equitable representation across academic levels and institutions, boosting the reliability and generalizability of the findings. Data was obtained using a standardized questionnaire designed to elicit students' impressions of AI's influence on their problem-solving and critical thinking skills. The questionnaire comprised demographic information, Artificial Intelligence, problem-solving skills, and critical thinking skills. The acquired data were analysed using descriptive statistics, including mean, frequency, and percentage, to characterize demographic features and the amount of AI usage among students. To analyze the relationship between variables, inferential statistics, including Pearson's correlation coefficient and

multiple regression analysis, were applied. Data analysis was undertaken using SPSS version 25, ensuring thorough statistical examination of the influence of AI usage and AI literacy on students' problem-solving and critical thinking abilities. For hypothesis testing, a significance level of 0.05 was adopted. The decision rule was that the null hypothesis (H_0) would be rejected if the calculated p-value was less than 0.05 ($p < 0.05$), indicating a statistically significant relationship or effect. Conversely, the null hypothesis would be accepted if the p-value was greater than or equal to 0.05 ($p \geq 0.05$), indicating that no statistically significant relationship or effect exists between the variables under investigation

Results

Table 1: Respondents Bio Data

Respondents	Frequency	(%)
Gender		
Female	93	62
Male	57	38
Age		
18 - 21Years	31	20.7
22 – 25Years	95	63.3
26 - 30Years and above	24	16.0
31 Above	0	0
Do you use AI tools?		
Yes	150	100
No	0	0
How often do you interact with AI-driven tools		
Never	0	0
Rarely	6	4.0
Sometimes	15	10.0
Often	38	25.3
Always	91	60.7
Have you received any formal training in AI tools as part of your business/entrepreneurship education		
Yes	17	11.3
No	133	88.7
What is your level of access to AI tools and technologies		
Very Low	0	0
Low	5	3.3
Moderate	18	12.0
High	51	34.0
Very High	76	50.7
Total	**150**	**100.0**

The results in Table 1 provide crucial insights into the demographic characteristics and AI tool usage among business and entrepreneurship students. The population studied is largely female, with 62% identifying as female and 38% as male. Most students (63.3%) are between 22 and 25 years old, suggesting a younger, largely undergraduate population. Notably, all respondents (100%) utilize AI tools, with the majority

(60.7%) utilizing them regularly. However, despite the extensive usage, only 11.3% of students have gotten official training in AI tools, suggesting a considerable disparity between utilization and skill. While students have good access to AI tools, with 34% indicating high access and 50.7% reporting very high access, the absence of formal training speaks to a clear need for structured AI literacy programs within business education curriculum.

Table 2: Mean and Standard Deviation of Respondent on AI-Driven Tools Usage

S/N	Questions	Mean	Std. Dev	Remark
1	I frequently use AI-driven tools in making findings and also to understand some bases in business education courses.	4.78	0.42	Agreed
2	AI-based tools help me understand complex business concepts better in business education courses	4.57	0.74	Agreed
3	I feel confident using AI tools to solve business-related problems in my courses.	4.85	0.36	Agreed
4	I have a good understanding of how AI technologies work in the context of business and entrepreneurship and its application on real world scenarios	3.54	1.59	Agreed
5	I believe that AI literacy is essential for succeeding in business education and entrepreneurship at this century.	4.61	0.72	Agreed
6	The AI tools I use in my business education courses allow me to receive personalized feedback and recommendations on my learning progress	4.81	0.44	Agreed
7	I am aware of the different AI tools used in business education and entrepreneurship, such as simulations, virtual assistants, and predictive analytics.	4.35	1.03	Agreed
	Weighted Average	**4.50**	**0.76**	**Agreed**

Data in table 2 indicates that students predominantly concur on the beneficial effects of Artificial Intelligence in business education. The highest mean score (4.85) signifies robust confidence in employing AI to address business-related challenges. Students concur that AI technologies assist with intricate topics (4.57) and provide tailored feedback (4.81). Nonetheless, comprehension of AI's functionality in business contexts yielded a lower mean score (3.54) with significant variability, indicating deficiencies in underlying knowledge. The weighted average of 4.50 and a standard deviation of 0.76 indicate a consensus on the significance of AI tools in improving learning; however, additional training in AI literacy is essential to enhance students' comprehension of AI's practical applications. This indicates that, whereas AI tools bolster problem-solving confidence, the disparity in comprehension underscores the necessity for more extensive AI literacy programs to prepare students with the requisite abilities for effective AI inclusion in business education.

Table 3: Mean and Standard Deviation of Respondent on Problem-Solving Skills

S/N	Questions	Mean	Std. Dev	Remark
1	AI tools have improved my ability to identify business problems and generate effective solutions.	4.50	0.72	Agreed
2	I am able to apply AI tools to analyze complex business problems and make informed decisions	4.61	0.59	Agreed
3	The use of AI-driven tools with knowledge acquired in my courses has significantly improved my problem-solving skills in business scenarios.	4.64	0.56	Agreed

4	I feel confident in using AI tools to solve real-world business challenges outside of the classroom.	4.75	0.44	Agreed
5	AI tools help me evaluate different business strategies and choose the most effective one for a given problem.	4.51	0.78	Agreed
6	AI-driven simulations have enhanced my ability to solve business problems by providing a risk-free environment to test solutions.	4.75	0.44	Agreed
7	I am able to work through business challenges systematically and come up with innovative solutions by using AI tools.	4.69	0.53	Agreed
	Weighted Average	**4.64**	**0.58**	**Agreed**

The results in Table 3 reveal high agreement among students on the beneficial influence of Artificial intelligence on their problem-solving skills. The highest mean scores are 4.75, showing students' trust in employing AI tools to solve real-world business difficulties and in utilizing AI-driven simulations for testing solutions in a risk-free environment. Other statements also show high mean scores, such as 4.64 for applying AI tools to examine complicated business problems and increase problem-solving skills. The weighted average of 4.64 and a standard deviation of 0.58 imply that students highly believe that AI technologies boost their capacity to discover, evaluate, and solve business challenges, with minimum variation in replies.

Table 4: Mean and Standard Deviation of Respondent on Critical Thinking Skills

S/N	Questions	Mean	Std. Dev	Remark
1	AI tools have enhanced my ability to critically evaluate business situations and make reasoned decisions.	4.66	0.49	Agreed
2	Using AI encourages me to think critically about the business problems presented to me in my course field.	4.70	0.50	Agreed
3	AI-driven tools help me analyze business data in a way that fosters deeper critical thinking and decision-making	4.57	0.61	Agreed
4	I am able to think critically about AI-generated data and use it to formulate business strategies.	4.75	0.44	Agreed
5	The use of AI tools challenges me to think more logically and systematically about business issues.	4.67	0.66	Agreed
6	AI-driven systems help me evaluate different perspectives and come to a well-reasoned conclusion about business challenges	4.78	0.43	Agreed
7	I am able to critically assess the impact of AI tools on business outcomes and adjust strategies accordingly	4.66	0.59	Agreed
	Weighted Average	**4.68**	**0.53**	**Agreed**

The results in Table 4 show significant agreement among students regarding the impact of Artificial intelligence on their critical thinking skills. The highest mean score of 4.78 demonstrates the significant agreement that AI-driven systems assist students examine multiple perspectives and achieve rational decisions. Other questions also reveal high mean scores, such as 4.75 for thinking critically about AI-generated data to build business's plans and 4.70 for using AI to stimulate critical thinking in business situations. The weighted average of 4.68 with a standard deviation of 0.53 implies that AI tools are commonly perceived as increasing students' critical thinking abilities, with minimal heterogeneity in replies. These showing that AI tools are particularly successful in teaching critical thinking, helping students to assess data, appraise business situations, and make sound decisions.

Table 5: Correlation Matrix

	Artificial Intelligence	Problem Solving Skills	Critical Thinking Skills
Artificial Intelligence	1		

Problem Solving Skills	0.537**	1	1
Critical Thinking Skills	0.404**	0.818**	1

Source: Author's Computation (2025)

The correlation matrix in Table 5 indicates significant positive connections among artificial intelligence, problem-solving skills, and critical thinking skills. A correlation of 0.537 between AI and problem-solving skills signifies that regular AI utilization improves problem-solving capabilities, whilst the 0.404 correlation with critical thinking implies that AI contributes to the enhancement of critical thinking, but to a smaller degree. Additionally, the significant connection of 0.818 between problem-solving and critical thinking suggests that success in one is linked to success in the other. The result shows the significant role that AI play in enhancing problem-solving and critical thinking skills.

Test of Hypotheses

H_{01}: Artificial Intelligence have no significant effect on the critical thinking skills of business and entrepreneurship students in Kwara State.

Table 4.6: Regression Model Summary of Effect of Artificial Intelligence on critical thinking skills of business and entrepreneurship students in Kwara State

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.404	0.163	0.158	0.883

The regression model indicates a moderate positive correlation between Artificial Intelligence and critical thinking skills, with a R value of 0.404. The R Square score of 0.163 implies that 16.3% of the variation in critical thinking skills is explained by Artificial Intelligence usage. The Adjusted R Square (0.158) implies potential for improvement, while the standard error of the estimate (0.883) reveals the average gap between observed and predicted values. The result imply that AI moderately influences critical thinking skills, although other variables likely contribute.

Table 4.7: Regression Coefficients of Artificial Intelligence effect on critical thinking skills of business and entrepreneurship students in Kwara State

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.6276	0.195		18.577	.000
	AI	0.2325	0.043	0.403	5.359	.000

a. Dependent Variable: Critical Thinking Skills

The regression results suggest that Artificial Intelligence has a statistically significant positive impact on critical thinking skills. The unstandardized coefficient for AI is 0.2325, implying that for each unit rise in AI usage, critical thinking skills are projected to increase by 0.2325 units. The standardized coefficient (Beta = 0.403) implies a moderate positive influence of AI on critical thinking skills. The t-value of 5.359 and Sig. value of 0.000 confirm that this association is statistically significant, rejecting the null hypothesis (H_{01}) and demonstrating that AI usage significantly improves critical thinking skills.

H_{02}: Artificial Intelligence has no significant impact on the problem-solving abilities of business and entrepreneurship students in Kwara State.

Table 4.8: Regression Model Summary of Impact of Artificial Intelligence on problem-solving abilities of business and entrepreneurship students

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.538	0.289	0.281	0.876

The regression model indicates a moderate positive connection between Artificial Intelligence and problem-solving skills, with a R value of 0.538. The R Square value of 0.289 suggests that 28.9% of the variation in problem solving ability is explained by AI usage. The Adjusted R Square (0.281) and standard error of the estimate (0.876) imply that while the model gives some explanatory power, additional factors contribute to problem solving skills. The findings suggest that AI has a moderate impact on problem solving.

Table 4.9: Regression Coefficients of Impact of Artificial Intelligence on problem-solving abilities of business and entrepreneurship students

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.4186	0.184		18.607	.000
	AI	0.2615	0.043	0.289	6.114	.000

a. Dependent Variable: Problem Solving Skills

The regression results reveal that Artificial Intelligence has a statistically significant positive influence on problem-solving skills. The unstandardized coefficient for AI is 0.2615, implying that for each unit gain in AI, problem-solving skills are projected to rise by 0.2615 units. The standardized coefficient (Beta = 0.289) shows a moderate impact of AI on problem-solving skills. The t-value of 6.114 and Sig. value of 0.000 confirm that this association is statistically significant, rejecting the null hypothesis (H_{02}) and suggesting that Artificial intelligence greatly boosts problem-solving skills. The result highlights the necessity of integrating AI into business education, as it has a considerable positive impact on students' problem-solving skills.

Discussion of Findings

This study investigated the influence of Artificial Intelligence (AI) on Students' Critical thinking and Problem-Solving Skills in Business and Entrepreneurship Education in Kwara State. It focused on the impact of Artificial Intelligence on building students' cognitive capacities, notably in problem-solving and critical thinking, which are vital in business education. The study indicated that Artificial Intelligence has a strong positive influence on problem-solving capabilities, corroborating findings from Liadi (2025), who stressed the importance of AI literacy in boosting decision-making and problem-solving abilities. The findings in the study also suggest that students who frequently use AI tools gain stronger problem-solving capabilities, as AI-driven simulations and real-time data allow students to experiment with multiple solutions, helping them perfect their approaches. The study indicates that Artificial Intelligence boosts students' confidence in addressing real-world business problems, a vital ability for future entrepreneurs.

Similarly, the study indicated that Artificial Intelligence considerably improves critical thinking skills. This is congruent with Lan et al. (2020), who proved that AI-powered learning systems enhance critical thinking by enabling students to analyze facts from many viewpoints and make educated judgments. The results from this study indicated a high positive link between AI and critical thinking skills, showing that students who engage more with AI technologies tend to think more critically about business scenarios and tactics.

The regression analysis also found that AI had a moderate positive impact on both cognitive skills, explaining 28.9% of the variation in problem-solving and 16.3% of the variation in critical thinking. Although AI plays a substantial role, which means that Artificial Intelligence alone does not account for the complete development of problem-solving and critical thinking abilities. Other elements, such as teaching methods, curriculum design, and access to resources, may play significant roles in influencing student's cognitive capacities. These findings highlight the need for more thorough training and support mechanisms to leverage AI's promise in business education. As the study indicates a crucial gap in the applications of Artificial Intelligence by the students, as it is noticed that just few students (11.3% of the responder) have gotten formal training in AI tools, despite the ubiquitous utilization of these technologies. This gap implies that while students have access to AI, they are not completely qualified to harness its full potential due to a lack of formal training programs. These findings align with the issues stated by Iyoha et al. (2025), who underlined the necessity of digital literacy and access to AI resources for effective integration of AI in education.

This study reveals that AI technologies are crucial in strengthening problem-solving and critical thinking skills in business and entrepreneurship education. However, the absence of formal training in AI remains an issue, as indicated by the gap. To fully grasp the benefits of AI, it is vital to integrate organized AI literacy programs into business curriculum, enabling students to not only use AI technologies but also understand their underlying principles and real-world applications.

Conclusion

The study concluded that Artificial Intelligence significantly influences students' Critical thinking and Problem-solving Skill in Business and Entrepreneurship Education in Kwara State, Nigeria. In line with the findings of the study which revealed that Artificial Intelligence considerably enhances students' capacity to tackle complicated business challenges and improve their critical thinking skills. Moreover, AI plays a significant role in nurturing these skills, since students with the adoption of AI tend to do better in both problem-solving and critical thinking activities. Despite the growing employment of AI technologies, there is a significant gap in formal AI training, which inhibits students' capacity to properly utilize these tools to their utmost potential. This gap underlines the need for structured AI training programs inside business and entrepreneurship studies to provide students with the knowledge and skills required to exploit AI effectively in their academic and professional lives.

Recommendations

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

1. Incorporating formal AI training programs that emphasize AI technologies, business applications, and ethical considerations into business and entrepreneurship education
2. Educators should receive continual training to properly integrate AI technologies into their teaching, ensuring they understand both the tools and how to use them into lessons and assessments.

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