

INTERGRATING ARTIFICIAL INTELLIGENCE FOR DEVELOPING ENTREPRENEURIAL SKILLS IN OFFICE TECHNOLOGY AND MANAGEMENT STUDENTS IN NORTH CENTRAL POLYTECHNIC, NIGERIA

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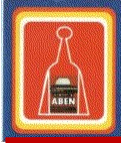
Abstract

The study examined the integration of artificial intelligence for developing entrepreneurial skills in polytechnics in North Central, Nigeria. Two research questions guided the study and two hypotheses were tested at 0.05 level of significance. The study adopted the descriptive survey research design. The population of the study comprised 153 respondents. The instrument of data collection was a structured validated questionnaire developed by the researchers. The test of reliability of the instrument using Cronbach Alpha yielded reliability co-efficient of 0.83 and 0.89 for clusters, 1 and 2 with a general reliability co-efficient of 0.85. Mean, standard deviation and t-test were used to analyse data for the study. The findings of the study revealed that the prospects of integrating artificial intelligence in Office Technology and Management programmes include; artificial intelligence can promote hands-on learning experiences that stimulate critical thinking, problem-solving, and creativity among students, it assists OTM programmes to align academic curricula with the needs of industries that rely on automation; and artificial intelligence encourages entrepreneurship by empowering students to develop innovative solutions and products. The study further revealed the challenges of integrating artificial intelligence which are lack of infrastructure to support the integration; and lack of experts to facilitate its integration in OTM programs in tertiary institutions among others. Furthermore, findings revealed no significant difference in the mean ratings of lecturers in Federal owned tertiary institutions and State owned tertiary institutions. The researchers therefore recommended that the Federal and State governments in collaboration with polytechnic authorities should prioritize investment in infrastructure to support the integration of artificial intelligence and that the school curriculum should be interwoven with new technologies such that teachers and students are exposed to training and retraining in the use of artificial intelligence in delivering their services in order to develop the appropriate skills for digital entrepreneurial endeavours.

Keywords: *Integrating, artificial intelligence, Benefits, Challenges.*

Introduction

Education is widely accepted as the instrument for human capital development. It achieves this through the impartation of knowledge, attitudinal value and skills in line with the current trends. The acquisition of skills depends on the type of education received as well as the method of delivery of



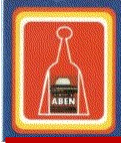
such education. The acquisition of relevant skills is a tool for increasing and boosting the productive power-base of the nation. Akpan in Baba and Ali (2023) opined that education is a tool through which a person is taught by means of a set of instructions (formal and informal) to bring about beneficial changes in the learner's actions and allow him/her to lead a useful and appropriate life in society.

Different scholars have defined the concept of Artificial Intelligence (AI). Artificial Intelligence was first mentioned by John McCarthy at a conference in 1956. John McCarthy proposed the use of the term artificial intelligence to describe computer with the ability to mimic or duplicate the functions of the human brain (Ralph and George, in Alabi). Artificial Intelligence has several specialty areas, such as (1) expert system (2) robotics (3) vision system (4) natural language processing and voice recognition (5) learning systems and (6) neural networks. Pedro et al. in Chen, Ifenthaler, Yau and Sun (2024) stated that AI refers to human performance and rationality of computers, systems or software. AI as a trend of educational technologies, which mainly applies to the realm of higher education, releases the burden of educators via automation and therefore saves time and human resources.

According to Benhamou and Janin (2018) Artificial Intelligence involves a collection of technologies that enable machines to act with a very high level of intelligence similar to humans. Merriam-Webster English Dictionary (2018) stated that artificial intelligence is "a part of computer science that deals with giving ability to the machines to look as if they have natural human intelligence". Similarly, Ralph and George in Alabi, (2022) posited that Artificial Intelligence systems includes the people, procedure, hardware, software, data and knowledge needed to develop computer systems and machines to display features of Intelligence. The adoption of Artificial Intelligence in training office technology and management students will help the polytechnic institutions meet up with global digitalization faster. Artificial Intelligence is considered a tool for sustainable development.

Entrepreneurs, starting their own businesses, have the potential to decrease the rate of unemployment and increase the amount of economic growth using innovative ideas/products/services/technologies and the foundation of ventures, generated as a result of entrepreneurship. AI has been adopted in science, technology, engineering and mathematics teaching and learning at all levels of education institutes whereas social science struggles with this intelligent technology because of ill-structured content. Meanwhile, despite the recent surge in the utilization of generative AI and its applications, the progression of AI technology, from weak to strong, has yet to reach a point where it can effectively replace the tasks performed by experienced educators (Obschonka and Audretsch, in Chen, Ifenthaler, Yu and Sun, 2024).

Office technology and management (OTM) is a component of the umbrella business education. Business education, in the view of Ikechukwu in Oladeji and Afolabi (2021) encompasses office environment, vocational practices, business understanding, teaching career and entrepreneurship in order to give the necessary guidelines for starting a business, to give proper orientation in dealing with business risks, to provide the necessary background for teaching business subjects, to develop the necessary office skills for office occupation, to identify viable business opportunities, to develop entrepreneurial growth and to promote national development. Business Education is key among the academic disciplines which major goal is skills acquisition. Office Technology and Management programme being a skill acquiring discipline, remains a relevant channel for the transmission of the appropriate information and communication technology (ICT) skills and knowledge in order to make its graduates ICT savvy to embrace globalization and meet the demands of today's work place. Business Education comprises activities that are aimed



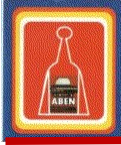
at planning, teaching and development through experience that provide individual with the ability to become entrepreneur for self-reliance.

Based on the definition of business education and its objectives, artificial intelligence is highly needed in order to perform academic and administrative functions faster and efficiently. Therefore, the adoption of artificial intelligence in business education is long overdue. Nuseir, Basheer and Aljumah, (2020) observed that AI augments human skills in the workplace and serves as an educational partner, enhancing content and competencies. Elhajjar, Karam and Borna (2021) advocate integrating AI into education to equip students with skills essential for future jobs and digital society's demands, such as innovation, creativity, and design thinking. AI employs diverse tools, techniques, and systems in educational activities (McGrath et al., 2023). Southworth et al. (2023) highlight AI benefits, fostering technical skills, creativity, critical thinking, and problem-solving abilities for students.

AI-based education enhances entrepreneurial competencies and fosters creativity, benefiting businesses (Nuseir, Basheer and Aljumah, 2020). AI tools have proven firmly and vastly helpful in various fields, in education or business education. Amongst them, there are computer vision, prediction systems, data mining (Das et al. in Surugiu et al. 2024), intelligent learning or teaching systems, learning analytics (Ley et al., 2023), facial recognition systems, voice or speech recognition systems, virtual laboratories, augmented reality, virtual reality, hearing and sensing technologies, edge computing, virtual personalised assistants, real-time analysis, AI chatbot, image recognition, personalised learning approach, academic analytics, and adaptive learning method (al-Zyoud, 2020; Han, Park and Lee, 2022).

Teachers significantly contribute to society by educating generations of upcoming students that will become future entrepreneurs. Office technology and management lecturers irrespective of their gender, teaching in polytechnics were trained using the traditional approach with obsolete facilities. To be able to meet with educational advancement in terms of technological innovation which has become inevitable, serious efforts, commitment and determination on the part of the teachers to improve him/her self in terms of these technological explosions are required continually (Okolocha and Nwadiani, in Baba 2023).

In envisioning future jobs and human resources specialists' requirements, teachers must equip students with proficiency that makes them adaptable to challenges. Usman et al. (2024) pointed out that timely deliveries, accurate inventory management, and responsive customer service, facilitated by AI, contribute to an enhanced customer journey. Businesses that prioritize operational excellence through AI-driven strategies can build customer loyalty, attract new clients, and differentiate themselves in competitive markets. The authors further stated that AI provides entrepreneurs with the capability to make informed, data-driven decisions. The insights derived from AI analytics empower entrepreneurs to understand market trends, customer behaviours, and operational performance. This data-driven decision-making not only improves strategic planning but also enables businesses to stay ahead of the competition by anticipating and capitalizing on emerging opportunities. The scalability inherent in AI allows businesses to handle increased workloads without a proportional increase in costs, enabling efficient expansion and market penetration. Operational processes represent a transformative shift for entrepreneurs, offering unparalleled opportunities for optimization, efficiency, and competitiveness. From supply chain management to logistics and resource optimization, AI-driven strategies empower businesses to adapt swiftly to dynamic environments and achieve operational excellence. Entrepreneurs who harness the power of AI in their operational strategies gain a significant competitive edge. The agility, cost savings, enhanced customer experience, data-driven decision-making, and innovation facilitated by AI contribute to the long-term success and sustainability of entrepreneurial ventures.



Tan (2020) underlined that the teacher exerts a triple role, being a content expert and creator, a knowledge spreader, and “an ethical-spiritual guide” with wisdom. The students should be able to chase trends and not just stay current with the events and environment (Elhajjar, Karam and Borna, in Surugiu, Grădinaru and Surugiu, 2024). Hence, the demand for innovative teachers embracing change, integrating new materials, and enabling student-AI interactions in education is increasing.

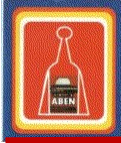
The integration of artificial intelligence in teaching is a central matter in ensuring quality of OTM programme. Integrating artificial intelligence comes not only with opportunities but mostly with challenges for both educators and learners. According to Johnson et al in Winter et al (2021), challenges to its use have been identified to include; availability of equipment, access to resources, training and support.

Integrating AI in business education programmes in tertiary institutions is greatly shaped by individual preferences, which are in turn influenced by various factors such as gender, cultural and ethical background, level of education, and technological expertise. For example, individuals with strong technical knowledge are more inclined to adopt and apply new technologies in their designs compared to those with less experience. Similarly, those from traditional cultural backgrounds may be less inclined to use new technologies or may prefer to apply them in a more conventional manner (Akande, et al. 2024). Supporting this assertion, Nyako et al. (2023) opined that some of the drawback in the integration of emerging technologies include negative attitude, a lack of computers, technical difficulties, poor funding, resistance to change, poor administrative support, low levels of computer literacy and technical skills, technology misaligned with the curriculum, lack of incentives, poor training opportunities, a lack of vision for integrating technology into learning processes, a lack of required IT skills, and feelings of discomfort.

Polytechnic education is one of the tertiary levels of education given after secondary school. Polytechnic institutions are largely owned by both federal and state governments. Federal owned polytechnics are those polytechnics owned, financed and managed by the federal government while the state polytechnics are those polytechnics owned, financed and managed by state governments. Ndinechi and Gude in Baba, Baba and Iwuoha (2021) posited that it is a two tier programme of studies that consist of National Diploma (ND) and Higher National Diploma (HND) with one year industrial experience as one of the pre-requisites for HND programme. Unfortunately, there appears to be a cog in the wheel of technological impact on OTM programme. The authors identify a gap in the literature regarding the benefits and challenges of integrating AI for developing entrepreneurial skills with particular reference to OTM students in Polytechnic, Nigeria.

Statement of the Problem

Business education programs play a crucial role in preparing students for the business world by equipping them with essential skills, knowledge, and competencies. Office technology and management which is an aspect of Business education programme in tertiary institutions is meant to be pacesetters in the integration of novel initiatives and innovations in the business and academic environment. The integration of artificial intelligence and other emerging technologies in teaching and learning is transforming education globally. Unfortunately, there appears to be a cog in the wheel of technological impact on OTM programme. Consequently, it is observed that OTM programme in polytechnic, Nigeria have not fully embraced these innovations. Many OTM lecturers are yet to fully utilize Digital technologies for teaching. This gap raises concerns about the effectiveness of graduates from this program. The failure to adapt to these technological trends could negatively impact the quality of business education graduates, limiting their ability to function effectively in the increasingly digital and automated business world which will ultimately affect their



employability and contribution to the economy. Against this background, the researchers examine the integration of artificial intelligence for developing entrepreneurial skills in OTM students in polytechnics, Nigeria.

Research Questions

The following research questions guided the study:

1. What are the prospects of integrating artificial intelligence for developing entrepreneurial skills in OTM students in polytechnics, Nigeria?
2. What are the challenges of integrating artificial intelligence for developing entrepreneurial skills in OTM students in polytechnics, Nigeria?

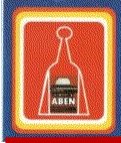
Hypotheses

The following null hypotheses have been formulated and tested at 0.05 level of significance:

1. There is no significant difference in the mean ratings of office technology and management lecturers in federal and state owned polytechnics on the prospects of integrating artificial intelligence for developing entrepreneurial skill in OTM students in Polytechnics, Nigeria.
2. There is no significant difference in the mean ratings of male and female office technology and management lecturers on challenges of integrating artificial intelligence for developing entrepreneurial skill in OTM students in Polytechnics, Nigeria.

Methods

The descriptive survey research design was adopted for the study. The study was carried out in ten polytechnics in Nigeria. The population of the study comprised 153 OTM lecturers in the polytechnics. The instrument for data collection were two rating scale developed by the researcher. The instrument was titled "Questionnaire on Integrating Artificial Intelligence for Developing Entrepreneurial Skills in OTM Students (QIAIDES)". The instrument contains 26 items spread in two sections; A and B. Section "A" contains information relating the ownership of the respondents institutions (Federal and State). Section "B" was broken down into two clusters; B1 and B2. Cluster B1 contains 15 items on the benefits of integrating artificial intelligence for developing entrepreneurial skills in Office Technology and Management students in polytechnics north central, Nigeria. Cluster B2 contains 11 items on the challenges of integrating artificial intelligence for developing entrepreneurial skills in Office Technology and Management students in polytechnics, North central Nigeria. The instrument was structured on a 4 point rating scale of Strongly Agree (SA), as 4; Agree (A) as 3; Disagree (D) as 2 and Strongly Disagree (SD) as 1. The instrument was validated by three experts in the School of Business Studies, Federal Polytechnic, Idah. The application of the Cronbach Alpha reliability test on the returned data yielded coefficient values of 0.95 for both clusters combined. The researcher administered the questionnaire by sending copies of the questionnaires to the e-mails and Whatsapp numbers of the respondents. In cases where it was difficult administering the instrument electronically, an appointment was scheduled and the instrument was administered and retrieved on the spot. Out of the 153 copies of questionnaire administered, 132 copies were returned in good condition. Amounting to 84% return rate and 16% lose rate. The data collected from the respondents were analyzed using mean, standard deviation and independent sample t-test. The mean values were employed to address the research questions, while the standard deviation was used to determine the level of homogeneity among the respondents' ratings. Any item with a mean score of 2.50 or higher was considered as agree, while any item with a mean score below 2.50 was regarded disagree. Independent Sample t-test was employed to test the null hypotheses at .05 level of significance. Where the p value is greater than



the significant level of .05, it means that there is no significant difference and the hypothesis was accepted. Conversely, where the p value is equal to or less than the significant level of .05, it means that there is a significant difference and the hypothesis was not accepted.

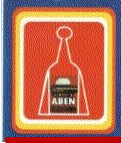
Research Questions 1

What are the benefits of integrating artificial intelligence for developing entrepreneurial skills in Office Technology and Management (OTM) students in polytechnics, north central Nigeria?

Table 1: Mean ratings on the benefits of integrating artificial intelligence for developing entrepreneurial skills in OTM students in polytechnics, North Central, Nigeria (N=153)

S/No.	Item Statements	Mean	SD	Remarks
1.	Artificial intelligence encourages entrepreneurship by empowering students to develop innovative solutions and product	3.06	0.93	Agree
2.	Helps students to participate in research projects.	3.23	0.82	Agree
3.	Artificial intelligence may help OTM students develop analytical skills	3.14	0.92	Agree
4.	Artificial intelligence increases students' interest and drive to study	3.08	0.82	Agree
5.	Facilitates personalised learning experiences aimed at improving specific needs of students	3.40	0.64	Agree
6.	Fosters the development of technical skills necessary for today's job needs.	3.30	0.76	Agree
7.	Fosters the development of digital skills necessary for today's business needs.	3.04	0.95	Agree
8.	Foster interdisciplinary learning among students across various departments in OTM programmes in Polytechnics	3.05	0.94	Agree
9.	Facilitate increased responsiveness of OTM students to consumer needs.	3.02	0.98	Agree
10.	Fosters the development of entrepreneurial decision making skills required for a successful business.	3.02	0.98	Agree
11.	Artificial intelligence can help OTM programmes in polytechnics promote hands-on learning experiences that stimulate critical thinking.	3.28	0.84	Agree
12.	Artificial intelligence can be used to promote problem-solving skills among students.	3.33	0.73	Agree
13.	Artificial intelligence can help OTM students develop creative skills among students.	3.21	0.84	Agree
14.	Artificial intelligence allows the connection with the business environment.	2.91	1.05	Agree
15.	Artificial intelligence can help OTM students develop problem solving skills.	3.36	0.66	Agree
	Cluster Mean	47.43	12.86	Agree

Source: Field Study (2024)



Data in Table 1 revealed that items 1 to 15 are rated as benefits of integrating artificial intelligence for developing entrepreneurial skills in OTM students by the respondents with mean ratings ranging from 2.91 to 3.40. Also the cluster mean of 3.15 falls within the . Thus, OTM lecturers in North Central Polytechnics, Nigeria agreed that the integration of artificial intelligence in teaching is a central matter in ensuring quality of OTM programme The standard deviations for all the items are within the same range indicating that the respondents were homogeneous in their ratings in integrating artificial intelligence for entrepreneurial skill development in OTM students.

Research Question 2

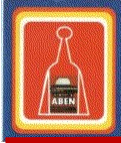
What are the challenges of integrating artificial intelligence for developing entrepreneurial skills in Office Technology and Management (OTM) students in polytechnics, North Central, Nigeria?

Table 2: Mean rating on the challenges of integrating artificial intelligence for developing entrepreneurial skills in OTM students in Polytechnics, Nigeria (N=153)

S/No.	Item Statements	Mean	SD	Remarks
16.	Lack of infrastructure to support the integration of artificial intelligence	3.09	0.82	Agree
17.	Lack of expertise to handle technical issues related to integration of artificial intelligence in OTM programmes in polytechnics	3.23	0.81	Agree
18.	Lack of funds for integration of artificial Intelligence	2.92	1.03	Agree
19.	High cost of materials and tools for integrating artificial intelligence in OTM programmes in polytechnics	2.91	0.91	Agree
20.	Poor institutional commitment to integrating artificial intelligence in OTM programmes in polytechnics	3.11	2.87	Agree
21.	Poor attitude of lecturers towards the integration of artificial intelligence in OTM programmes in polytechnics	2.87	1.02	Agree
22.	Lack of training for lecturers on current trends in intergrating artificial intelligence in OTM programmes in polytechnics	3.28	0.79	Agree
23.	Non-alignment with existing curriculum in OTM programme in polytechnics	3.21	0.82	Agree
24.	Challenges in facilitating collaboration with industry for practical training opportunities.	2.80	1.04	Agree
25.	Resistance to change towards the integration of artificial intelligence among lecturers	3.17	0.86	Agree
26.	Cultural barriers	2.73	1.06	Agree
	Cluster Mean	33.32	12.03	Agree

Source: Field Study (2024)

Data in Table 2 showed that the respondents rated all the items (16-26) as the challenges of integrating artificial intelligence for developing entrepreneurial skills in OTM students in



polytechnics, North Central, Nigeria with mean rating ranging between 2.73 and 3.28. the grand mean of 3.32 indicated that the challenges of integrating artificial intelligence in polytechnics in north central, Nigeria among others are lack of infrastructure to support the integration of artificial intelligence, lack of experts to facilitate the integration of artificial intelligence, lack of funding, challenges in facilitating collaboration with industry for practical training opportunities and poor institutional commitment to integrating artificial intelligence. The standard deviation scores ranging between 0.81 and 1.06 showed the extent of consistency of scores of respondents in their observed challenges of integrating artificial intelligence for developing entrepreneurial skills in OTM students in polytechnics, north central. Nigeria.

Test of Hypotheses

Hypothesis 1

There is no significant difference in the mean ratings of Office Technology and Management lecturers in federal and state owned polytechnics on integrating artificial intelligence for developing entrepreneurial skill in OTM students in polytechnics, north central, Nigeria.

Table 3: t-test statistics on mean scores of OTM lecturers in federal and state polytechnics on the integrating artificial intelligence for developing entrepreneurial skills in OTM students in Polytechnics, North Central Nigeria

	Polytechnic	N	M	StD	S E	T	Df	p
Mean Rating	Fed Poly	4	3.3525	.63031	.31516	-.672	8	.521
	State Poly	6	3.5900	.49120	.20053			

The p-value (0.521) is greater than the alpha level of 0.05. This indicates that there is no statistically significant difference in mean ratings of the lecturers from Federal and State Polytechnics regarding the integration of artificial intelligence for developing entrepreneurial skills in OTM students. Hence, the null hypothesis that there is no significant difference in the mean ratings between male and female lecturers in both federal and state polytechnics regarding the integration of artificial intelligence in the curriculum for developing entrepreneurial skills is accepted.

State the sample size for both Federal and State Polytechnic separately.

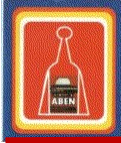
Hypothesis 2:

There is no significant difference in the mean ratings of male and female Office Technology and Management lecturers in federal and state owned polytechnics on integrating artificial intelligence for developing entrepreneurial skill in OTM students in polytechnics, north central, Nigeria.

Table 4: t-test statistics on mean ratings of male and female OTM lecturers on integrating artificial intelligence for developing entrepreneurial skill in OTM students in polytechnics, north central, Nigeria

	Gender	N	M	StD	S E	T	Df	p
Mean Rating	Male	59	3.9076	.36498	.04752	13.876	130	.000
	Female	73	2.5901	.65635	.07682			

Data in Table 4 of the t-test analysis showed that the p-value (0.000) is less than the alpha value of 0.05, indicating a statistically significant difference in the mean ratings of male and female lecturers regarding integrating artificial intelligence for developing entrepreneurial skills in OTM students. Hence, the null hypothesis that there is no significant difference in the mean ratings



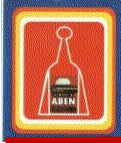
between male and female lecturers in both federal and state polytechnics regarding the integration of artificial intelligence in the curriculum for developing entrepreneurial skills is rejected.

Discussion of Findings

Findings on the research question one revealed that OTM lecturers in North Central polytechnics, Nigeria agreed that the benefits of integrating artificial intelligence (AI) for developing entrepreneurial skills in OTM students among others include; AI may help OTM students develop analytical skills; promote hands-on learning experiences that stimulate critical thinking, problem-solving, and creativity skills; facilitates the implementation of blended learning models that combine traditional face-to-face instruction with online learning activities; fosters the development of technical skills necessary for today's digital market and encourage interdisciplinary learning among students. The findings of this study is in consonance with the findings of a study carried out by Usman et al (2024) who stated that AI provides entrepreneurs with the capability to make informed, data-driven decisions. The insights derived from AI analytics empower entrepreneurs to understand market trends, customer behaviours, and operational performance. In line with this, Elhajjar, Karam and Borna (2021) study also found that integrating AI into education equips students with skills essential for future jobs and digital society's demands, such as innovation, creativity, and design thinking. Similarly, Southworth et al. (2023) highlight AI benefits to include; fostering technical skills, creativity, critical thinking, and problem-solving abilities for students. Pedro et al. in Chen, Ifenthaler, Yau and Sun (2024) in their study further pointed out AI as a trend of educational technologies, which mainly applies to the realm of higher education, releases the burden of educators via automation and therefore saves time and human resources.

Further, findings on research question two revealed that integrating artificial intelligence comes with challenges for both educators and learners such as negative attitude, a lack of computers, technical difficulties, poor funding, resistance to change, poor administrative support, low levels of computer literacy and technical skills, technology misaligned with the curriculum, lack of incentives, poor training opportunities, a lack of vision for integrating technology into learning processes, a lack of required IT skills, and feelings of discomfort. This study is in collaboration with a study carried out by Obschonka and Audretsch, in Chen, Ifenthaler, Yu and Sun, (2024) who posited that AI has been adopted in science, technology, engineering and mathematics teaching and learning at all levels of education institutes whereas social science struggles with this intelligent technology because of ill-structured content. The authors asserted that despite the recent surge in the utilization of generative AI and its applications, the progression of AI technology, from weak to strong, has yet to research a point where it can effectively replace the tasks performed by experienced educators. Supporting this assertion, Johnson et al in Winter et al (2021), identified some challenges AI integration to include; availability of equipment, access to resources, training and support. OTM teachers and students are no exception. If there is no access to computers and fast internet connections, then integrating AI for teaching is not feasible. If teachers have not had sufficient training in technology, then they lack the necessary skills.

Also, the findings of the study revealed no statistically significant difference in the mean ratings of lecturers in federal owned polytechnics and state owned polytechnics on the benefits of integrating AI as an emerging technology for developing entrepreneurial skills in OTM students in north central polytechnics. This is in agreement with a study carried out by Nuseir, Basheer and Aljumah, (2020) observed that AI augments human skills in the workplace and serves as an educational partner, enhancing content and competencies. In the same vein, McGrath et al., (2023). Advocated that integrating AI into education to equip students with skills essential for future jobs and digital society's demands, such as innovation, creativity, and design thinking. AI employs diverse tools, techniques, and systems in educational activities. Nevertheless, it was found that



there was a statistically significant difference in the mean ratings of male and female lecturers regarding integrating artificial intelligence for developing entrepreneurial skills in OTM students.

This could be as a result teaching exposure, experience or academic qualification of male and female lecturers in north central polytechnics. This is in collaboration with Akande, et al. (2024) stated that integrating AI in business education programmes in tertiary institutions is greatly shaped by individual preferences, which are in turn influenced by various factors such as gender, cultural and ethical background, level of education, and technological expertise.

Conclusion

Based on the findings of the study, the researchers conclude that Artificial intelligence is a digital technology, being resource for digital entrepreneurship. The study underscores both the immense potential and the intricate challenges associated with integrating artificial intelligence into business operations. The end goal is to train and develop the student's ability to utilize these tools and techniques to critically analyze business problems and opportunities and to make cogent recommendations and decisions for the betterment of the organization. Embedding artificial intelligence and other 21st century skills into OTM programme becomes an imperative. It is the role of OTM programme to prepare the students in the use of the tools encompassing the artificial intelligence world. This will enable them to quickly adapt to and be successful in the rapidly changing business environment. However, despite the numerous advantages of potentials of artificial intelligence, some teachers still find it challenging in transiting from the analogue to the digital in teaching and learning and it has been seriously affecting the office technology and management students' academic performance as regards to the development of appropriate entrepreneurial skills.

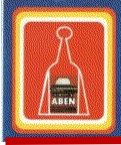
Recommendations

The following recommendations are made based on the findings of the study.

1. The school curriculum should be interwoven with new technologies such that teachers and students are exposed to training and retraining in the use of artificial intelligence in delivering their services in order to develop the appropriate skills for digital entrepreneurial endeavours.
2. The Federal and State governments in collaboration with polytechnic authorities in North Central should come together to proffer the way forward to enable implementation of AI in OTM departments.

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