

INTEGRATION OF ARTIFICIAL INTELLIGENCE (AI) IN THE IMPLEMENTATION OF BUSINESS EDUCATION CURRICULUM IN TERTIARY INSTITUTIONS IN ANAMBRA STATE, NIGERIA

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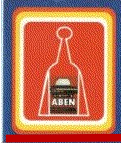
Abstract

The study was carried out to assess the integration of artificial intelligence (AI) in the implementation of Business Education curriculum in tertiary institutions in Anambra State, Nigeria. The study was guided by four research questions and four corresponding hypotheses. The study adopted descriptive survey research design. The population of the study was 63 Business Education lecturers comprising 21 male and 42 female in three tertiary institutions in Anambra State (Nnamdi Azikiwe University, Chukwuemeka Odimegwu Ojukwu University and Federal College of Education, Umunze). The entire population of the study was adopted using census technique. Questionnaire was used as instrument for data collection and was validated by three experts. The reliability of the instrument was 0.81 obtained using Cronbach Alpha Statistic. The data collected were analysed using mean and standard deviation and t-test statistic was used to test the hypotheses at 0.05 level of significance. The findings indicated that lecturers were aware of Artificial Intelligence, the level of availability of AI tools in tertiary institutions was low and the extent of the used of AI in implementation of Business Education curriculum was to a low extent. Also, the challenges confronting the adoption of AI in Business Education curriculum implementation were: High cost of AI tools, poor technological development in Nigeria, inadequate technical know-how among lecturers, inadequate training and development of lecturers on AI, resistance to change and technological phobia among lecturers. Based on the findings, it was recommended among others that Institutional policies should be enacted requiring business education lecturers to incorporate AI tools in lesson planning, instructional delivery, and assessment.

Keywords: Artificial Intelligence (AI), Business Education, Curriculum and Tertiary Institutions

Introduction

The origin of Artificial Intelligence (AI) can be traced to 1956, when John McCarthy in an academic conference at Dartmouth College in Hanover, New Hampshire coined the term "artificial
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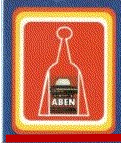


intelligence" (McGuire in Reagan, 2018). Therefore, investment and interest in AI became boomed in the first decades of the 21st century, when machine learning was successfully applied to many problems in academia and industry due to the presence of powerful computer hardware (Reagan, 2018). Artificial Intelligence (AI), sometimes called machine intelligence, is intelligence demonstrated by machines in contrast to natural intelligence displayed by humans and other animals. It is an artificial operating system that is generally based on human intelligence and is expected to exhibit high cognitive functions specific to human intelligence such as learning, comprehending, inferring, thinking and communicating (Ulaşan, 2023). In addition, AI is a technology that makes it possible to find solutions to problems and imitate the way of thinking of humans, based on the idea of copying human mental abilities (Sağlamtuğ, 2020). Today, AI is applied in many fields such as in defence industry, public administration, justice system, health sector, business, accounting and education both in administration and implementation of the curriculum at the basic and tertiary levels of education. Curriculum is therefore referred to as a prescribed and well-defined programme of studies which the learners must complete successfully in order to pass a certain academic level of education. It is also conceptualized as learning experience that makes up a particular subject matter in system of education (Ali & Ajibola, 2015). The author added that curriculum is an educational plan that spells out which goals and objectives to be achieved, which topics are to be covered, and which methods are to be used for teaching, learning and evaluation.

However, if the planned curriculum is not implemented, all efforts put together in the planning of the curriculum are in vain. Curriculum implementation may be described as the actual use of the planned curriculum or document in the classroom (Umoren, 2024). In view of Ekpo and Osam (2019) curriculum implementation is structured in various steps in achieving the desirable planned curriculum objectives of the programme of education. This implies that in order to actualize curriculum objectives, emphasis must be laid on the quality of educational programmes undertaken as well as the quality and competencies of the teachers who implement the curriculum of the different subject areas, Business Education inclusive. According to Ezeabii (2017), Business Education is an aspect of vocational education which equips individuals with the necessary skills and theoretical knowledge needed for performance in the Business world either for job or self-employment. Business Education is offered through four distinct options: Accounting Education, Office Technology and Management Education (OTME), Entrepreneurship Education and Marketing Education in accordance with the National Policy on Education. These programmes aim to equip students with the skills necessary for emerging jobs and innovations, enabling them to thrive in the world of work or pursue self-reliance. The medium of instruction is dynamic, driven by the demands of the ever-evolving job market.

The overarching goals of the Business Education programme are to produce well-qualified graduates capable of teaching courses on Business education. Also, the programmes embody the entrepreneurial spirit, develop the vocational skills of students and help them acquire the Business acumen required to succeed in the public sector as employees or in their private establishments as self-employed. To achieve these goals, specific entry requirements, essential facilities and modern technology such as AI are indispensable in the actualization of Business Education goals and objectives in tertiary institutions in Nigeria including the colleges of education.

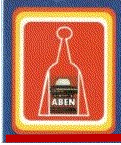
Tertiary institutions as described in the National Policy on Education referred to the education given after secondary education in universities, colleges of education, polytechnics, among others (FRN, 2014). Tertiary institutions are established to strengthen the production of middle and higher-level manpower in areas of national priority. Meanwhile, College of Education according to



Tsojon and Gidado (2017), (COE) is principally a teacher training institution established to produce teachers to teach at the secondary schools. They are tertiary educational institutions that prepare intermediate level teachers for a minimum of three years to make them qualify to teach their respective subjects. In Nigeria, Colleges of Education play a pivotal role in shaping the future educators and professionals in various disciplines. Therefore, integration of technologies such as AI tools in the implementation of any curriculum such as Business Education remain imperative in colleges of education

The AI tools for implementation of any curriculum according to Edidiong and Jude (2022) include: AI personal computer and search engines/Chatbots used as virtual assistants, AI audiopen **and** Eduaide AI lesson development tool **among others**. Edidiong and Jude added that through AI tools, the problem of lack of practical materials can be bypassed by AI adoption. Virtual workshop or laboratory could be used to supplement the limited workshop and laboratory equipment for entrepreneurship skills development of Business Education students so that the students could at least have practical experience of all Business Education entrepreneurship area taught and this will make the learning of the subject easy and meaningful and adequate skills could be acquired in the process. Meanwhile, Savaş (2021) added that AI can assist educators in giving feedback on lessons and topics, and can determine whether students understand the lessons and topics and report back to the lecturers. It also helps educators develop their professions and provide missing information. They can also support educators with always up-to-date information. It helps educators analyze exams. In educational institutions, AI can automate classification and helps institutions with data management. Niyogisubizo et al. (2022) added that AI helps lecturers save time and reduce errors by assisting them with tasks such as grading, lesson planning, and attendance taking. At the same time, AI can control their actions and thus errors can be reduced. In addition, AI-supported systems can provide lecturers with the necessary information about which subjects students are unsuccessful in and plan the lesson accordingly.

Additionally, lecturers can recognize outstanding students and their talents can be discovered earlier. AI can predict the potential of students dropping off schools. AI collects student data and quickly alert lecturers about students at risk of dropping off. Effective prediction also helps alert lecturers for early intervention of uncontrolled behaviors which could trigger dropping off and take active preventive measures (Niyogisubizo et al., 2022). However, with all the benefits of AI to the technological advancement of the society, Nigeria has not really enjoyed much of it especially in the implementation of curriculum in Business Education. This could be attributed to slow speed technological advancement in developing countries and low level of awareness among the lecturers in tertiary institutions on the integration of AI for effective implementation of curriculum (Edidiong & Jude, 2022). More so, Savaş (2021) maintained that the utilization of AI for curriculum implementation among lecturers are retard by some challenges such as: High cost of AI support devices, poor technological development in Nigeria, inadequate technical know-how among lecturers, inadequate technical support and infrastructure, inadequate training and development of lecturers on AI technical know-how among others and these challenges affect both genders of the lecturers (male and female) on the adoption of AI for curriculum implementation. Gender refers to the roles and responsibilities of men and women that are created in family, societies and culture. The concept of gender is the expectations held about characteristics, attitudes, and likely behaviour of both men and women (Ezeh, 2018). This implies that the challenges of the challenges confronting the adoption of AI in Business Education curriculum implementation in tertiary institutions are applicable to both male and female lecturers. Thus, it is therefore on this background, the researchers sought to assess the integration of



artificial intelligence (AI) in the implementation of Business Education curriculum in tertiary institutions in Anambra State, Nigeria.

Statement of the Problem

The adoption of AI for effective curriculum implementation in Nigeria and the essential role AI plays in the technological advancement of the society cannot be undermined. It provides opportunities for lecturers to be exposed to different techniques of instructional delivery, lesson preparation, content delivery skills, grading and evaluation of students' knowledge and skills. With all the benefits of AI to the technological advancement of the society, Nigeria has not really enjoyed much of it, especially in the area of integration of AI for Business Education curriculum implementation. This could be attributed to the fact that knowledge of AI has not been fully localized and utilized. Adoption of AI for teaching and learning of Business Education in tertiary institutions are still at its early stage. Hence, many lecturers lack high level of awareness couple with inadequate availability of AI tools in tertiary institutions which also affect the extent of the use of AI for instructional tasks. This has contributed to poor implementation of curriculum in tertiary institutions and poor learning outcomes on the part of students where many graduates do not acquire adequate knowledge and skills on the course they studied. Consequently, it is on this backdrop it became imperative to assessed with empirical evidence the integration of artificial intelligence (AI) in the implementation of Business Education curriculum in tertiary institutions in Anambra State, Nigeria

Research Questions

The following research questions guided the study:

1. What are the levels of availability of AI tools for the implementation of Business Education curriculum in tertiary institutions in Anambra State?
2. What are the awareness levels of lecturers on the use of AI in the implementation of Business Education curriculum in tertiary institutions in Anambra State?
3. To what extent does AI used in implementation of Business Education curriculum in tertiary institutions?
4. What are the challenges confronting the adoption of AI in Business Education curriculum implementation in tertiary institutions in Anambra State?

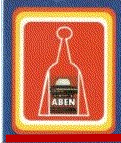
Hypotheses

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

- H0₁:** There is no significant difference between the mean ratings of male and female Business Education lecturers on the levels of availability of AI tools for the implementation of Business Education curriculum in tertiary institutions in Anambra State.
- H0₂:** There is no significant difference between the mean ratings of male and female Business Education lecturers on the awareness levels of lecturers on the use of AI in the implementation of Business Education curriculum in tertiary institutions in Anambra State.
- H0₃:** There is no significant difference between the mean ratings of male and female Business Education lecturers on the extent of the used of AI in implementation of Business Education curriculum in tertiary institutions and
- H0₄:** There is no significant difference between the mean ratings of male and female Business Education lecturers on the challenges confronting the adoption of AI in Business Education curriculum implementation in tertiary institutions in Anambra State.

Methods

The study adopted descriptive survey research design. The population of the study was 63 Business Education lecturers comprising 21 male and 42 female in three tertiary institutions in



Anambra State (Nnamdi Azikiwe University, Chukwuemeka Odimegwu Ojukwu University and Federal College of Education, Umuze). The entire population of the study was adopted using census technique. Questionnaire tagged: Integration of Artificial Intelligence (AI) in the Implementation of Business Education Curriculum Questionnaire (IAIBECQ) was developed by the researcher and validated by three experts. The reliability of the instrument was 0.81 obtained using Cronbach Alpha statistic. The data collected were analysed using mean, standard deviation and t-test analysis. Research question 1, 2 and 3 were answer using real limit of numbers as follows: Very Low Level (VLL) 1.00 – 1.49, Low Level (LL) 1.50 – 2.49, High Level (HL) 2.50 – 3.49 and Very High Level (VHL) 3.50 - 4.00., Not Aware (NA) 1.00 - 1.49, Aware (A) 1.50 - 2.49, Highly Aware (HA) 2.50 - 3.49 and Very High Aware (VHA) 3.50 - 4.00. and Very Low Extent (VLE) 1.00 - 1.49, Low Extent (LE) 1.50 - 2.49, High Extent (HE) 2.50 - 3.49 and Very High Extent (VHE) 3.50 - 4.00 respectively.

In addition, mean and standard deviation was used to answer research question 4. On the other hand, t-test statistic was used to test the four null hypotheses at 0.05 level of significance.

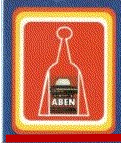
However, the mean was computed as follows $\bar{X} = \frac{\sum X}{n} = \frac{4+3+2+1}{4} = \frac{10}{4} = 2.50$. Therefore, the mean cut-off mark of 2.50 and above was considered as agreed while the mean cut off below 2.50 was considered as disagreed. With respect to the hypotheses, the hypotheses of no significant difference was upheld for items since t-calculated value are less then t-table value and rejected on the contrary.

Results

Research Question 1:What are the levels of availability of AI tools for the implementation of Business Education curriculum in tertiary institutions in Anambra State?

Table 1: Mean and Standard Deviation Responses on the Levels of Availability of AI Tools for the Implementation of Business Education Curriculum in Tertiary Institutions in Anambra State N=63

S/N	ITEM STATEMENTS	\bar{X}_m	S.D _m	\bar{X}_f	S.D _f	\bar{X}_{mf}	S.D _{mf}	t-cal.	Rmks
1.	AI Personal Computer (AI-PC)	1.83	0.37	1.76	0.42	1.79	0.39	0.68	NS
2.	AI audiopen	1.81	0.38	1.78	0.41	1.79	0.39	0.29	NS
3.	Intelligent robot	1.87	0.33	1.81	0.38	1.84	0.35	0.65	NS
4.	Eduaide AI lesson development tool	1.83	0.37	1.81	0.38	1.82	0.38	0.20	NS
5.	Century tech	1.75	0.43	1.74	0.43	1.74	0.43	0.09	NS
6.	Canva magic write	1.85	0.35	1.80	0.40	1.82	0.37	0.51	NS
7.	Knewton’s Alta	1.77	0.41	1.78	0.41	1.77	0.41	-0.29	NS
8.	AI Curipod	1.80	0.40	1.88	0.32	1.84	0.36	-0.80	NS
9.	AI Slidesgo	2.41	0.83	2.38	0.79	2.39	0.81	0.14	NS



Keys: \bar{x}_m = Mean of male lecturers, \bar{x}_f = Mean of female lecturers, SD_m = Standard deviation of male lecturers, SD_f = standard deviation of female lecturers, \bar{x}_{mf} = Grand mean of male and female lecturers, SD_{mf} = Grand standard deviation of male and female lecturers, N =Number of respondents, t -table value= 1.99, t -calculated = significant level: 0.05, S^* =Significant, NS = Not Significant, Degree of Freedom = $n_1+n_2 -2= 21+43-2= 61$.

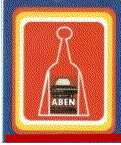
The data presented in Table 1 above revealed that the mean responses of the respondents in all the 9 items ranged between 1.74 and 2.39 indicating that respondents agreed with those item statements on a low level. The standard deviation of all the 9 items also ranged between 0.35 and 0.81 which shows that the respondents were close to one another in their responses.

In addition, the data further shows that the 9 items in the table had its t -calculated (t -cal.) value ranged from -0.29 to 0.68 which is less than t -table (t -tab.) value of 1.99 at $p \leq 0.05$ level of significance and at 61 degree of freedom (df). This finding revealed that there is no significant difference between the mean ratings of male and female Business Education lecturers on the levels of availability of AI tools for the implementation of Business Education curriculum in tertiary institutions. Therefore, the null hypothesis was accepted.

Research Question 2: What are the awareness levels of lecturers on the use of AI in the implementation of Business Education curriculum in tertiary institutions in Anambra State?

Table 2: Mean and Standard Deviation Responses on the Awareness Levels of Lecturers for the Use of AI Tools for the Implementation of Business Education Curriculum in Tertiary Institutions in Anambra State

S/N	ITEM STATEMENTS	\bar{x}_m	S.D _m	\bar{x}_f	S.D _f	\bar{x}_{mf}	S.D _{mf}	t-cal.	Rmks
10.	AI Personal Computer (AI-PC) for processing of information	2.37	0.95	2.25	0.91	2.31	0.93	0.50	NS
11.	AI audiopen for generating text	2.32	0.87	2.30	0.92	2.31	0.89	0.84	NS
12.	Intelligent robot (like Mavis Beacon)	2.42	1.04	2.34	0.83	2.38	0.94	0.62	NS
13.	Century for tracking students' progress	2.40	0.78	2.37	0.80	2.38	0.79	0.14	NS
14.	Canva magic write for brainstorming and creating outline	2.44	1.25	2.40	0.77	2.42	1.01	0.13	NS
15.	Knewton's Alta for learning with provision of textbooks and videos	2.33	1.05	2.30	0.85	2.32	0.95	0.11	NS
16.	AI Curipod for lesson customization	2.48	1.00	2.42	0.79	2.45	0.89	0.24	NS
17.	Eduaide AI lesson development tool for lesson preparation	2.46	0.93	2.38	0.79	2.42	0.86	0.34	NS



18.	AI Slidesgo for preparing instructional presentation	2.38	1.24	2.37	0.80	2.37	1.02	0.03	NS
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Keys: \bar{x}_m = Mean of male lecturers, \bar{x}_f = Mean of female lecturers, SD_m = Standard deviation of male lecturers, SD_f = standard deviation of female lecturers, \bar{x}_{mf} = Grand mean of male and female lecturers, SD_{mf} = Grand standard deviation of male and female lecturers, N = Number of respondents, t -table value = 1.99, t -calculated = significant level: 0.05, S^* = Significant, NS = Not Significant, Degree of Freedom = $n_1+n_2-2= 21+43-2= 61$.

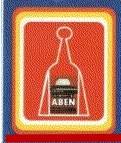
The data presented in Table 2 above revealed that the mean responses of the respondents in all the 9 items ranged between 2.31 and 2.45 indicating that the lecturers were aware of the use of different AI tools in the implementation of Business Education curriculum in tertiary institutions. The standard deviation of all the 9 items also ranged between 0.89 and 1.02 which shows that the respondents were close to one another in their responses.

In addition, the data further shows that the 9 items in the table had its t -calculated (t -cal.) value ranged from 0.03 to 0.84 which is less than t -table (t -tab.) value of 1.99 at $p \leq 0.05$ level of significance and at 61 degree of freedom (df). This finding revealed that there is no significant difference between the mean ratings of male and female Business Education lecturers on the awareness levels of lecturers on the use of AI in the implementation of Business Education curriculum in tertiary institutions. Therefore, the null hypothesis was accepted.

Research Question 3: To what extent does AI used in implementation of Business Education curriculum in tertiary institutions in Anambra State?

Table 3 Mean and Standard Deviation Responses on the Extent of the Used of AI in the Implementation of Business Education Curriculum in Tertiary Institutions in Anambra State. $N=63$

S/N	ITEM STATEMENTS	\bar{x}_m	S.D _m	\bar{x}_f	S.D _f	\bar{x}_{mf}	S.D _{mf}	t-cal.	Rmks
19.	AI is used for lesson planning and preparation in Business Education	1.80	0.40	1.72	0.44	1.76	0.42	0.72	NS
20.	AI is used for the development of Business Education instructional content	1.70	0.45	1.68	0.46	1.69	0.45	0.17	NS
21.	AI is used as virtual platform to provide students with first-hand information in Business Education	1.67	0.47	1.61	0.48	1.64	0.47	0.47	NS
22.	AI is used in teaching students different skills	1.67	0.47	1.63	0.48	1.65	0.47	0.31	NS
23.	AI is used to access new information on a particular subject matter in	1.78	0.41	1.75	0.43	1.76	0.42	0.27	NS



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24.	AI is used to enhance communication in the classroom by lecturers	1.74	0.43	1.66	0.47	1.70	0.45	0.67	NS
25.	AI is used as self-support for extra-tutorials for study clarification in Business Education subject matter	1.79	0.40	1.70	0.45	1.74	0.42	0.81	NS
26.	It keeps the instructors updated with new skills on the subject area	1.74	0.43	1.70	0.45	1.72	0.44	0.34	NS
27.	AI is used to identify curriculum gaps	1.68	0.46	1.62	0.48	1.65	0.47	0.48	NS
28.	Evaluation of students performance	1.64	0.47	1.60	0.49	1.62	0.48	0.31	NS

Keys: \bar{x}_m = Mean of male lecturers, \bar{x}_f = Mean of female lecturers, SD_m = Standard deviation of male lecturers, SD_f = standard deviation of female lecturers, \bar{x}_{mf} = Grand mean of male and female lecturers, SD_{mf} = Grand standard deviation of male and female lecturers, N = Number of respondents, t -table value = 1.99, t -calculated = significant level: 0.05, S^* = Significant, NS = Not Significant, Degree of Freedom = $n_1+n_2-2= 21+43-2= 61$.

The data presented in Table 3 above showed that the mean responses of the respondents in all the 10 items ranged between 1.62 and 1.74 indicating that AI tools were used on low extent in the implementation of Business Education curriculum in tertiary institutions. The standard deviation of all the 9 items also ranged between 0.42 and 0.48 which shows that the respondents were close to one another in their responses.

More so, the data further shows that the 10 items in the table had its t -calculated (t -cal.) value ranged from 0.17 to 0.81 which is less than t -table (t -tab.) value of 1.99 at $p \leq 0.05$ level of significance and at 61 degree of freedom (df). This finding revealed that there is no significant difference between the mean ratings of male and female Business Education lecturers on the extent of the used of AI in implementation of Business Education curriculum in tertiary institutions. Therefore, the null hypothesis was accepted.

Research Question 4: What are the challenges confronting the adoption of AI in Business Education curriculum implementation in tertiary institutions?

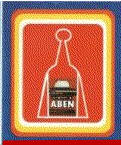
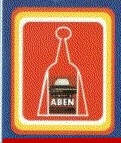


Table 4: Mean and Standard Deviation Responses on the Challenges Confronting the adoption of Lecturers for the Use of AI Tools for the Implementation of Business Education Curriculum in Tertiary Institutions
N=63

S/N	ITEM STATEMENTS	\bar{x}_m	S.D _m	\bar{x}_f	S.D _f	\bar{x}_{mf}	S.D _{mf}	t-cal.	Rmks
29.	Poor technological development in Nigeria	3.78	0.43	3.77	0.64	3.77	0.53	0.07	NS
30.	Inadequate technical know-how among lecturers	3.82	0.56	3.50	0.83	3.66	0.69	1.81	NS
31.	High cost of AI tools	3.64	0.60	3.76	0.51	3.70	0.55	-0.78	NS
32.	Inadequate training and development of lecturers on utilization of AI	3.69	0.57	3.73	0.47	3.71	0.52	-0.28	NS
33.	Resistance to change by some lecturers	3.64	0.51	3.90	0.29	3.77	0.40	-2.20	NS
34.	Technological phobia among lecturers	3.56	0.62	3.54	0.72	3.55	0.67	0.11	NS
35.	Instability of power supply in tertiary institutions	3.65	0.63	3.64	0.63	3.64	0.63	0.06	NS
36.	High cost of subscription for some AI application	3.50	0.76	3.55	0.83	3.52	0.79	-0.24	NS
37.	Poor funding of education	3.70	0.53	3.63	0.73	3.66	0.63	0.43	NS

Keys: \bar{x}_m = Mean of male lecturers, \bar{x}_f = Mean of female lecturers, SD_m = Standard deviation of male lecturers, SD_f = standard deviation of female lecturers, \bar{x}_{mf} = Grand mean of male and female lecturers, SD_{mf} = Grand standard deviation of male and female lecturers, N =Number of respondents, t-table value= 1.99, t-calculated = significant level: 0.05, S^* =Significant, NS = Not Significant, Degree of Freedom = $n_1+n_2-2= 21+43-2= 61$.

From the table 4 above, the means response of the respondents ranges from 3.52 to 3.77 which are above the cut-off point of 2.50. This implies that the 9 items are the challenges confronting the adoption of AI in Business Education curriculum implementation in tertiary institutions. Also the standard deviation of all the items ranges from 0.40 - 0.79 which shows that the responses of the
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respondents are close to one another in their responses and that they were not far from the mean.

Meanwhile, the data further indicated that the 9 items in the table had its t-calculated (t-cal.) value ranged from -0.24 to 1.81 which is less than t-table (t-tab.) value of 1.99 at $p \leq 0.05$ level of significance and at 61 degree of freedom (df). This finding revealed that there is no significant difference between the mean ratings of male and female Business Education lecturers on the challenges confronting the adoption of AI in Business Education curriculum implementation in tertiary institutions. Therefore, the null hypothesis was accepted.

Discussions of the Findings

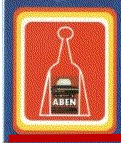
The findings were discussed in accordance with the research questions and hypotheses that guided the study as follows:

From the findings of the study on research question one, it was revealed that the level of availability of AI tools for the implementation of Business Education curriculum in tertiary institutions was low. In addition, the finding revealed that there was no significant difference between the mean ratings of male and female Business Education lecturers on the levels of availability of AI tools for the implementation of Business Education curriculum in tertiary institutions. Therefore, the findings correspond to the study of Edidiong and Jude (2022) that the level of availability of AI tools for teaching physics was low in Nigerian schools. The findings also relate with the study of Chassignol, Khoroshavin, Klimova, and Bilyatdinova, (2018) that the level of availability of AI tools for instructional tasks in schools are low.

The findings of the study on research question two indicated that the lecturers were aware of the use of different AI tools in the implementation of Business Education curriculum in tertiary institutions. Furthermore, the corresponding hypothesis tested revealed that there is no significant difference between the mean ratings of male and female Business Education lecturers on the awareness levels of lecturers on the use of AI in the implementation of Business Education curriculum in tertiary institutions. The findings relate with the study of Edidiong and Jude (2022) that teachers were aware on the integration of AI for teaching and learning but the awareness level was low.

More so, the findings of the study on research question three showed that AI tools were used on low extent in the implementation of Business Education curriculum in tertiary institutions. Meanwhile, the corresponding hypothesis tested revealed that there is no significant difference between the mean ratings of male and female Business Education lecturers on the extent of the used of AI in implementation of Business Education curriculum in tertiary institutions. Thus, the findings align with the study of Umoh (2024) that the extent of the applications of artificial intelligence gadgets for teaching and learning agricultural education in colleges of education was on low extent. The findings also relate with the study of Chassignol, Khoroshavin, Klimova, and Bilyatdinova, (2018) that the level of the used of AI tools for instructional tasks in schools are on a low extent.

From the findings of the study on research question one, it was revealed that the challenges confronting the adoption of AI in Business Education curriculum implementation in tertiary institutions include: Poor technological development in Nigeria, inadequate technical know-how among lecturers, high cost of AI tools, inadequate training and development of lecturers on utilization of AI, resistance to change by some lecturers, technological phobia among lecturers and poor funding of education. Also, the corresponding hypothesis tested revealed that mean ratings of male and female Business Education lecturers on the challenges confronting the adoption of AI in Business Education curriculum implementation in tertiary institutions. Thus, the study is in tandem with Savas (2021) who found out that the utilization of AI for curriculum



implementation among lecturers are retard by some challenges such as: high cost of AI support devices, poor technological development in Nigeria, poor technical know-how among lecturers, poor technical support and infrastructure, inadequate training and development of lecturers on AI technical know-how among others. The findings also align with the study of Edidiong and Jude (2022) that Nigeria has not really enjoyed much of the benefits of AI in the implementation of curriculum due to slow speed technological advancement in developing countries and low level of awareness among the lecturers in tertiary institutions on the integration of AI for effective implementation of curriculum.

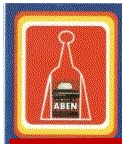
Conclusion

From the findings of the study, it was concluded that the level of availability of AI tools for the implementation of Business Education curriculum in tertiary institutions was low. In addition, the lecturers were aware of the use of different AI tools in the implementation of Business Education curriculum in tertiary institutions. Furthermore, the AI tools were used on low extent in the implementation of Business Education curriculum in tertiary institutions. Meanwhile, the challenges confronting the adoption of AI in Business Education curriculum implementation in tertiary institutions include: Poor technological development in Nigeria, inadequate technical know-how among lecturers, high cost of AI tools, inadequate training and development of lecturers on utilization of AI, resistance to change by some lecturers, technological phobia among lecturers and poor funding of education.

Recommendations

Based on the findings and conclusion drawn from the study, it was recommended that:

1. The Anambra State government and tertiary institution management should prioritise the provision of modern AI tools and supportive infrastructure by allocating dedicated budget lines for acquiring AI hardware and software
2. Tertiary institutions should integrate mandatory training and orientation sessions on AI applications into their induction programmes for academic staff, ensuring all business education lecturers develop a thorough understanding of the functions, relevance, and instructional possibilities of available AI tools
3. Institutional policies should be enacted requiring business education lecturers to incorporate AI tools in lesson planning, instructional delivery, and assessment.
4. Stakeholders should develop and implement a comprehensive support framework that includes funding subsidies, reliable power supply solutions, and continuous capacity-building programmes to address barriers such as high costs, technological phobia, inadequate training, and infrastructural deficits hindering effective AI adoption.



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