



Influence Of Artificial Intelligence On Academic Performance Of Business Education Postgraduate Students In Public Universities In South-South Nigeria.

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Abstract

This study examined the influence of artificial intelligence on academic performance of business education students in Public Universities in South-South Nigeria. The aspect of Artificial intelligence investigated were perceived course mastery, research complexity and functionality. Four research questions were rise and answered, while four null hypotheses formulated and tested at 0.05 level of significance. The descriptive research design was adopted. The population of the study was 388 postgraduate students from tertiary institutions in South-South Nigeria The simple random sampling technique was employed and the sample size was 232 which was 60% of the population. The instrument was questionnaire. The instrument was face and content validated. The Chronbach Alpha value for the instruments showed a reliability coefficient of 0.81 was obtained. Data collected from respondents calculated with Mean, Standard Deviation and t-test Statistics. It shows that usage of perceived course mastery, complexity and functionality has positive result on Business education postgraduate students' academic performance. Also, shows significant difference between the mean responses of Business Education postgraduate students on the influence of artificial intelligence on academic performance. The study concluded that artificial intelligence does influences Business Education postgraduate students academic performance. The study recommended amongst others that institutions of higher learning should put in place facilities like a functioning and effective Internet service usage for artificial intelligence tools to be assessable for academic purposes by the Business Education postgraduate students

It is the art of acquiring knowledge, developing of the reasoning and judgmental abilities of the mind, character and manipulative competencies in a formal setting. Education can authoritatively be regarded as key to national development because it unravels economic potentials, strengthens and equips individuals in society to fully be engaged and benefit from national policies. According to Agi and Yelloiwe (2013), education is important to development of human resources, impartation of appropriate skills, knowledge and attitudes. Education plays an unquantifiable role in nation and the global world at large in terms of creating an environment of self-actualization. It is the only instrument that liberates and protects the human rights through a well detailed and acquired knowledge through a systematic process of learning. Usha (2007) opines that education is the art of teaching and training of the individuals imparting the right training and necessary skills for a particular trade and or profession for positive impart in the society through better academic performance.

Academic performance entails the different means students respond to their academic materials assigned by their teachers/lecturers. This explains that high academic performance is directly connected and measured by the examination results. This study therefore attempts to examine how Artificial intelligence influences the academic performance of business education students. Business Education is a major components of vocational education. A designed disciplined for skills, attitudes, appreciation, creativity as well as creation of awareness and competencies in the office work and business world. According to Edionwe (2022), Business education can be referred to as part of academic training which is given in higher institutions under public supervision and controls and its effect is felt in the home, the school and the society. Business education is designed for students seeking to acquire knowledge from broad base of business and education concepts to create solutions to contemporary business and education problems.

I. Introduction

Education is highly ranked in the agenda of the 21st century nations for rapid development of manpower and task efficiency. It is generally acknowledged as being crucial system of any nation.



When knowledge project that absorbs various information, analyzes these data, and studies the methods of expressing the outcomes requires immediate feedback, and collaborative activities, but further growth and improvement are needed, including training, accessibility, research, monitoring, and best practices sharing, Artificial Intelligence comes to mind

Artificial Intelligence was developed as an academic discipline in the 1950s it emerges was found to be a systemic for students' ability to interpret, learn, and achieve specific tasks from data presentation. It refer to analytical, human-inspired intelligence because of the features it contains, together with the exhibited outputs that involve cognitive, emotional, and social academic display of knowledge. In recent developments and advancements, several platforms have popularized mainstream usage of Artificial Intelligence as part of daily processes such as incorporation it in tools that are used in several industries. This has implicated the inclusion of AI systems in day-to-day used, indicating the improved outcomes of as a powerful tool to increase efficiency, quality of academic performance and technological influence on artificial intelligence among postgraduate students

To understanding the potential technological influence of artificial intelligence in the behaviour and outcomes of Business education postgraduate students and how they respond to adoption of systematic changes in the education system of research writing. It could also help in identifying how artificial intelligence helps to shape the learning process, performance, and outcomes of postgraduate students. Moreover, it also looks into the phenomenon in a wider scope. Instead of looking at artificial intelligence usage as a personal choice, it is seen in a lens wherein societal forces as aided by technological developments influenced the decision-making of postgraduate student to use artificial intelligence tools for research writing It also allows speculation of the trends and development in the education sector as artificial intelligence continues to develop and consider the trajectory on the relationship of artificial intelligence and academic performance of postgraduates in South-South Nigeria.

Statement of Problem

The emergence Artificial intelligence represents a pivotal development in the realm of technological advancement and its adverse effects on students' academic performances. Many students do not take cognizance of recent development of vocabularies when communicating using Artificial

intelligence. Merhi (2023) discovered several deficiency responsible for Artificial Intelligence to be classified into three general concepts: technology, organization, and environment. These three categories determine the context of using and how the adoption of technology responds to its environmental needs. When considering internal and external factors, emphasize shows that the use of Artificial Intelligence is context-based, and that perceived direct and indirect benefits vary on its categorical differences.

Business education postgraduate students requires Artificial Intelligence -powered tools that are technological based. These tools have been used across various disciplines taught by educational institutions but mainly influenced developments in Information and Communication Technologies (ICT). Based on the study conducted by Crompton & Burke (2023), it was revealed that 72% of Artificial Intelligence users in academic institutions are students to access learning materials, answer student assessments, and do self-testing purposes. Klutka et al. (2018) explained that not using artificial intelligence in higher education could create low academic grades, lack of self -confidence during defense. They emphasized that artificial intelligence could provide aid, not only in learning and instruction but also in absorbing required knowledge and applying them in the field of business education. The purpose of this study was to examine influence of Artificial intelligence on the academic performance of business education students in Delta state tertiary institutions

Research Questions

The following research questions guided the study:

1. What is the influence of artificial intelligence on the academic performance of business education postgraduate students?
2. What is the influence of course mastery on academic performance of students' in business education?
3. What is the influence of research complexity on academic performance of business education students?
4. What is the influence of research functionality on academic performance of business education students?

Research Hypotheses

The following hypotheses formulated guided the study at 0.05 level of significance:

Ho₁: There is no significant difference in the mean responses of male and female respondents on the influences of Artificial intelligence on the



academic performance of business education postgraduate students.

Ho₂: There is no significant difference in the mean responses of male and female respondents on the influences of course mastery on the academic performance of business education postgraduate students.

Ho₃: There is no significant difference in the mean responses of male and female respondents on the influences of research complexity on the academic performance of business education postgraduate students

Ho₄: There is no significant difference in the mean responses of male and female respondents on the influences of research functionality on the academic performance of business education postgraduate students.

II. Methodology

The study adopted descriptive survey design. This design was considered most appropriate for the study because a survey design, utilizes questionnaire, observations, tests, and interviews as tools in obtaining information. The population of the study was made up of 388 Business Education

postgraduate students from 2023/2024 academic session. The simple random sampling method was employed to select 60% of population, which gave 232 as sample size for study. The instrument for data collection was a questionnaire, validity of research instrument was determined by three experts, two, the copies of the instrument were administered to 30 Business education postgraduate students of public universities in South-South Nigeria. With compute reliability co-efficient of instrument using the Cronbach Alpha statistics overall reliability coefficient of 0.82. The instrument was administered to respondents by the researcher, completed copies of the questionnaire were correctly checked to ensure their level of completeness by the respondents. The mean and standard deviation was employed in answering the four research questions on a benchmark of 2.50; while t-test statistic was employed in testing the four null hypotheses formulated at 0.05 levels of significance. The hypotheses was based on 0.05 level of significance. Therefore, when any calculated value is higher than 0.05, the null hypotheses was accepted and when any calculated value is lesser than 0.05, the null hypotheses was rejected.

Presentation of Data and Discussion of Results

Research Question One

What is the influence of artificial intelligence on the academic performance of Business Education postgraduate students in public Universities in South-South Nigeria?

Table 1.1: Mean and Standard Deviation responses on influence of artificial intelligence on Academic performance of Business Education Postgraduate Students. (N=232)

S/N	Statement	X	SD	Remark
1	Using artificial intelligence in learning encourages students to discuss issues concerning their academics	2.92	0.94	Agreed
2	Students can apply artificial intelligence in business education teamwork and assignments using Twitter	2.93	0.92	Agreed
3	Students can use artificial intelligence in carrying out collaborative assignment.	3.08	0.86	Agreed
4	Artificial intelligence enable students to check the academic activities	2.96	0.87	Agreed
5	Students can access high quality research material using artificial intelligence	2.99	0.88	Agreed
6	Artificial intelligence enable students to search for any topic of their choice, join other great group available using artificial intelligence	3.02	0.86	Agreed
7	Artificial intelligence help students to understand a knowledge application to problem stating.	3.02	0.82	Agreed
8	Artificial intelligence assist students to seek assistance from experts in their field, hence influence their academic performance.	3.04	0.88	Agreed



9	When business education postgraduate students applies artificial intelligence responsibly, it can improve their academic performance.	3.09	0.83	Agreed
10	Artificial intelligence serves as a source of inspiration and motivate the business education postgraduate students in research	3.07	0.83	Agreed
	Cluster Mean/SD	3.01	0.89	Agreed

Table 4.1 revealed that respondents agreed to the items measuring the influence of Artificial intelligence on the academic performance of Business Education postgraduate students this is reflected in the mean score of 3.01 and 0.89 which is above the mean benchmark of 2.50 for region of acceptance. Hence, it is safe to say that Artificial intelligence application do influence students' academic performance.

Research Question Two

What are the influences of course mastery on the academic performance of Business Education postgraduate students in public Universities in South-South Nigeria?

Table 1.2: Mean and Standard Deviation responses on influence of course mastery on Academic performance of Business Education Postgraduate Students. (N=232)

S/N	Statement	X	SD	Remark
1	Business education postgraduate students can discuss assignment using course mastery.	2.71	0.91	Agreed
2	Business education students can collaborate through the use of course mastery	2.95	0.85	Agreed
3	Students can form groups on course mastery to require feedback from peers.	2.92	0.92	Agreed
4	Course mastery helps students share information across in a flash of light.	2.84	0.93	Agreed
5	With the course mastery students can interpret links recorded in classroom sessions and provide written notes which assist to improve their academic performance.	2.82	0.97	Agreed
6	Course mastery help students to follow journals and periodicals that they might find important citing their sources and worthy evidence for their papers.	2.81	0.93	Agreed
7	Course mastery help students become visible in the virtual realm by them discussing with confident and expressing their views.	2.88	0.94	Agreed
8	Using course mastery more for academic activities increase students' academic performance	2.34	0.86	Disagreed
9	Course mastery usage influence students study pattern	3.01	0.83	Agreed
10	Course mastery usage enhance academic performance of students	2.51	0.85	Agreed
	Cluster Mean/SD	2.78	0.90	Agreed

Table 1.2 revealed that respondents agreed to nine items measuring the influence of course mastery and disagreed on item 8 with regards to academic performance of Business Education postgraduate students. Also this is reflected in the mean score of 2.78 and standard deviation of 0.90 which is above

the mean benchmark of 2.50. It also showed that the respondents were not far apart in their responses. Hence, Facebook usage by Business Education postgraduate students influences their academic performance.



Research Question Three

What is the influence of Research complexity on the academic performance of Business Education postgraduate students in public universities in South-South Nigeria?

Table 1.3: Mean and Standard Deviation responses on influence of Research Complexity on Academic performance of Business Education Postgraduate Students. (N=232)

S/N	Statement	X	SD	Remark
21	Easy accessibility of research complexity by business education students help to increase their academic performance	2.66	0.85	Agreed
22	Research complexity allows business education students to create problem-solving skills which influence academic performance	2.80	0.97	Agreed
23	Research complexity help students to share videos, documents, images, class materials, assignment and other educational resources which enhance their academic performance.	2.79	0.97	Agreed
24	Business education lecturers uses research complexity to updates research skills which help to improve the students' academic performance.	2.83	0.96	Agreed
25	Research complexity makes it easy for sharing of content document which may enhance students' academic performance.	2.84	0.96	Agreed
26	Interaction can easily help in communicating with fellows and to give update about their research progress.	2.82	0.97	Agreed
27	The use of research complexity encourages collaboration between business education students.	2.89	0.94	Agreed
28	Private studies of research complexity influence students' academic performance.	2.88	0.95	Agreed
29	Research complexity habitual usage enhance better knowlegde interaction for students	2.85	0.95	Agreed
30	Communicating through the use of Research complexity boost students' ability to express confident, thereby help to improve academic performance.	2.83	0.96	Agreed
	Cluster Mean/SD	2.82	0.95	Agreed

Table 1.3 revealed that respondents agreed to all items measuring is reflected in at 2.82 and standard deviation of 0.95 which is above the mean benchmark of 2.50 for region of acceptance. The standard deviation portrayed that the respondents are no far apart in their responses. Hence, the use of research complexity do influences students' academic performance.

Research Question Four

What are the influences of Research functionality on the academic performance of Business Education students in public universities in South-South Nigeria?

Table 1.4: Mean and Standard Deviation responses on influence of Research functionality on Academic performance of Business Education Postgraduate Students

S/N	Statement	X	SD	Remark
31	The use of research functionality in the teaching of business education enhance students' academic performance	2.96	0.87	Agreed
32	Research functionality help business education students to improve their listening skills which help in enhancing academic performance.	2.94	0.87	Agreed



33	With the use of research functionality, students can see how data are carried out, and analysis help to improve academic performance	2.85	0.84	Agreed
34	Students form group on research functionality and post data content that will be beneficial to all members of the group and in turn influence academic performance	2.88	0.84	Agreed
35	Research functionality provides access to a wide range of educational data content from experts in the field	2.89	0.86	Agreed
36	Research functionality provides inside that helps in learning some courses or topics in research.	2.90	0.86	Agreed
37	Research functionality encourage students to be involve in self-directed learning.	2.90	0.85	Agreed
38	Individuals who have issue focusing on a particular thing for an extended time might benefit from research functionality.	2.86	0.87	Agreed
39	Student who use research functionality in academic endeavours gain more knowledge	2.93	0.85	Agreed
40	Students divert academic materials into data sourcing for research functionality	2.81	0.86	Agreed
	Cluster Mean/SD	2.89	0.86	Agreed

Table 1.4 revealed that respondents agreed to the items measuring the influence of research functionality on the academic performance of Business Education postgraduate students. This is reflected at 2.89 and standard deviation of 0.86 which is above the mean benchmark of 2.50 for region of acceptance. The standard deviation revealed that the respondents are not far apart in their responses. Hence, research functionality application influence Business Education

postgraduate students' academic performance in public Universities in South-South Nigeria

Hypotheses

Hypothesis One

There is no significant difference in the mean responses of male and female respondents on the influence of artificial intelligence n the academic performance of Business Education postgraduate students.

Table 1.5: *t-test Analysis of Male and Female Respondents' Mean Ratings on influence of artificial intelligence on the Academic Performance of Business Education Postgraduate students*

Variable	N	Mean	SD	df	α	t	p-value	Decision
Male	76	3.09	0.39	230	0.05	-.292	0.77	NS
Female	156	3.13	0.66					

Data presented in Table 1.5 showed the t-test statistical analysis between male and female Business Education postgraduate students with regards to artificial intelligence influence on academic performance. The observed t-value is -.292 while 0.77 is p-value. Consequently, the critical t-value of 1.96 is greater than the observed t-value and the p-value is also greater than the alpha value of 0.05, hence, the null hypothesis is accepted. Therefore, there is no significant difference between

the mean response of male and female students on the influence of artificial intelligence on academic performance.

Hypothesis Two

There is no significant difference in the mean responses of male and female respondents on the influence of course mastery on the academic performance of Business Education postgraduate students.



Table 1.6: t-test Analysis of Male and Female Respondents' Mean Ratings on influence of course mastery on the Academic Performance of Business Education Postgraduate students

Variable	N	Mean	SD	df	α	t	p-value	Decision
Male	76	2.67	0.97	230	0.05	-.417	0.68	NS
Female	156	2.72	0.88					

Table 1.6 showed the t-test statistical analysis between male and female students on course on academic performance. From the Table, the observed t-value was -.417 while the p-value was 0.68. Accordingly, the critical t-value of 1.96 observed t-value and value of 0.05, thus, the hypothesis of no difference was accepted. Therefore, there is no significant difference between the mean response of male and female Business

education students on the influence of course mastery on academic performance in Business Education.

Hypothesis Three

There is no significant difference in the mean responses of respondents on the influence of research complexity on the academic performance of Business Education postgraduate students.

Table 1.7: t-test Analysis of influence of Research complexity on the Academic Performance of Business Education students

Table 1.7: t-test Analysis of Male and Female Respondents' Mean Ratings on influence of Research Complexity on the Academic Performance of Business Education postgraduate students

Variable	N	Mean	SD	df	α	t	p-value	Decision
Male	76	2.51	0.81	230	0.05	-1.833	0.07	NS
Female	156	2.73	0.87					

Table 1.7 showed the t-test statistical analysis between male and female students on research complexity. The observed t-value is -1.833 while the p-value was 0.07. Consequently, the critical t-value of 1.96 value of 0.05. Thus, the null hypothesis was accepted. Therefore, there is no significant difference between the mean response of male and female students on the influence of research complexity on academic performance.

Hypothesis Four

There is no significant difference in the mean responses of male and female respondents on the influence of Research functionality on the academic performance of Business Education Postgraduate students.

Table 1.8: t-test Analysis of Male and Female Respondents' Mean Ratings on influence of Research functionality on the Academic Performance of Business Education Postgraduate students

Variable	N	Mean	SD	df	α	t	p-value	Decision
Male	76	2.51	0.81	230	0.05	-1.833	0.068	NS
Female	156	2.73	0.87					



Table 1.8 showed the t-test statistical analysis between male and female students on research functionality. From the observed t-value of -1.833 and the critical t-value of 1.96, it can be deduced that since the observed t-value is lesser to t-value, and the observed p-value is higher to alpha value of 0.05, hence was accepted. So, there is no significant difference between the mean response of male and female students on the influence of research functionality on academic performance in Business Education.

III. Discussion of Findings

The findings of research question one showed that artificial intelligence usage do influence Business Education postgraduate students' academic performance. From the findings it was also revealed that applying artificial intelligence in business education encourages students to discuss issues concerning research and academics. This finding contradicted the findings of Cho and Rangel (2017) who found that incorporating artificial intelligence in educational context led to overexposure, inappropriate usage, reputation, addiction, information overload as well as on content and personal privacy. Contrastingly, the study disagreed with the work of Alshaye, Tasir and Jumaat (2023) who undertook a critical analysis of the effects of artificial intelligence on student engagement and grades. Findings from hypothesis one revealed that there is no significant difference between the mean response of male and female students on the influence of artificial intelligence on academic performance in Business Education. This finding aligned with the study Lenandlar (2020) who noted that artificial intelligence has been used by students in education for various purposes which do influences their ways of doing things and by extension, networking with regards to academic activities.

The findings of research question two revealed that course mastery application do influence Business Education postgraduate students' academic performance. From the findings it was also revealed that Business education postgraduate students can discuss assignment using course mastery; The finding of this study is in corroboration with the findings of Kibona and Mgya (2015) who found that smartphone abuse to the point of addiction was becoming more problematic in Tanzania because most students of higher learning and low level students were more addicted to applications found of course mastery. Finding from hypothesis two revealed that there is no significant difference between the mean response

of male and female students on the influence of course mastery on academic performance in Business Education.

The findings of research question three revealed that complexity usage has influence on Business Education postgraduate students' academic performance. From the findings it was also revealed that Easy accessibility of complexity by business education students help to increase their academic performance. This finding aligned with the findings of Shuayb and Gebreel (2021) who carried out a study on the effect of using complexity on the academic achievement of students. Their study revealed that using complexity by the students can be of a positive and effective impact on their academic performance. The finding from hypothesis three revealed that there is no significant difference between the mean response of male and female students on the influence of research complexity on academic performance in Business Education. The finding from this study concur with the study by Zamir and Mujeeb (2022) who found that artificial intelligence had dual influences on the academic performance of prospective lecturers.

The findings of research question four revealed that research functionality application influence Business Educations postgraduate students' academic performance. From the findings it was also revealed that the research functionality application in the teaching of business education enhance students' academic performance; Finding from hypothesis four revealed that there is a significant difference between the mean response of male and female students on the influence of research functionality application on academic performance in Business Education. The findings of this study disagreed with the study by Oguguo et al. (2020) who investigated the influence of research functionality application on students' academic achievement. Emphasis of the study was to determine the influence of research functionality application on the academic achievement of undergraduate students.

IV. Conclusion

The study is on the influence of artificial intelligence on academic performance of Business Education postgraduate students in public universities in South-South Nigeria The study lay emphasis on four variables which are artificial intelligence, course mastery, research complexity and research functionality to ascertain the influence its application has on Business Education postgraduate students' academic performance Based on the findings of the study, it was concluded that



the artificial intelligence do have a positive influence on Business Education postgraduate students' academic performance in public universities in South-South Nigeria

V. Recommendations

The following recommendations were made from the findings that:

1. Postgraduate students should aligned with the application of artificial intelligence to enhance improved academic performance;;
2. Government and the relevant authorities should consistently make the utilization of artificial intelligence for learning in tertiary institutions a necessity;
3. Institutions of higher learning should put in place facilities like a functioning and effective Internet service to support the use of artificial intelligence;
4. More resource persons should be sourced to teach the students how to employ the various artificial intelligence for a robust academic purposes.

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