

APPLICATION OF ARTIFICIAL INTELLIGENCE (AI) ON LECTURERS' JOB PERFORMANCES IN SELECTED RIVERS STATE TERTIARY INSTITUTIONS

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Abstract

Artificial Intelligence (AI) is rapidly enhancing teaching and learning process globally. Therefore, this study determined application of artificial intelligence (AI) on lecturers' job performances in selected River's state tertiary institutions. Two research questions guided the study and two null hypotheses were tested. Descriptive survey research design was adopted. From a population of 62 lecturers, a census survey sampling was employed. A four-point response options questionnaire was used for data collection, and it was validated by three experts. The reliability of the instrument was established using Cronbach's alpha which yielded coefficients of 0.78 and 0.79. Mean and Standard Deviation were used to answer the two research questions and measure the spread in respondents' opinions, while one-way analysis of variance (ANOVA) was used to test the two null hypotheses at 0.05 level of significance. Findings revealed that all the listed types of AI were highly needed, and that all the different types of AI stated were very highly beneficial on lecturers' job performances. Based on the findings, it was concluded that if AI is applied on lecturers' job performances, it will transform the programmes positively, lead to AI skills development and enable the learners to acquire the needed AI employability skills for the global workplace. Therefore, among other things, it was recommended lecturers should be trained and retrained on the application of AIs on their jobs' performances in selected River's state tertiary institutions to enable them transfer the skills to learners.

Keywords: *Application of artificial intelligence, artificial intelligence (AI), lecturers' job performances*

Introduction

Artificial Intelligence (AI) is rapidly transforming various industries, including education. AI as an aspect of information and communication technology is being used in educational systems to enhance teaching and learning process, improve student outcomes, and streamline administrative tasks. In recent years, AI has also made inroads into the education sector, particularly research, teaching and learning processes (Ukata, & Obinichi-Aaron, 2025; Igbokwe, 2023). AI can help improve the teaching and learning process, enhance lecturers' job performances, student outcomes, and automate academic administrative tasks. The application of AI in the teaching and learning is still in its early stages, moreover in Nigeria but it has already shown promising results (Ukata & Worgu, 2025a; Gupta, 2020). AI in schools offers multiple possibilities for school administrators, teachers, and students. One example is ChatGPT, the latest version, GPT-4, is integrated into software such as Microsoft Office, Edge, and Bing, optimizing educational tasks (Forero-Corba, & Negre Bennasar, 2024). AI and Machine Learning (ML) have been oriented towards educational tasks (Zafari et al., 2021), which highlights the need to strengthen Teachers' Digital Competence (TDC). AI technology in education is expected to grow significantly in the coming decades, presenting new opportunities and challenges (Surugiu, Grădinaru, & Surugiu, 2024; Khosravi, 2022). Researchers, policymakers, and practitioners are integrating Artificial Intelligence Education (AIE) to enhance teaching, personalised learning, assessments, and administrative services (Zhang and Aslan, 2021; Chiu et al., 2023). AI represents progress in education, offering benefits on multiple levels, and stimulates the evolution of teaching and learning through technologies like

Turnitin, chatbots, Marvis Beacon Teaches Typing (MBTT), robots, automated assessment, digitised artefacts, and intelligent tutoring systems among others (Chiu et al., 2023).

Meaning of Artificial Intelligence (AI)

AI is the theory and development of computer systems that are able to perform tasks requiring human intelligence, such as teaching, visual perception, speech recognition, decision-making, and translation between languages (Ukata & Worgu, 2025b; Pattam, 2021). Artificial intelligence is the science of making machines that can think and act like humans. AI is an advanced part of information and communication technology (ICT) which adopts the application of hardware and software in imitating to demonstrate what human beings can do by those technologies. So, to reasonable extent, application of AI may come through chatbots, Marvis Beacon Teaches Typing (MBTT), automated assessment, Turnitin, Quillbot and intelligent tutoring systems.

Subgroups of Artificial Intelligence (AI) Covered in this Study

The subgroups of AI covered in this work are Machine Learning (ML) and Deep Learning (DL). This is because they are more related to the topic under study with available information. Machine learning (ML) is a subset of artificial intelligence and it is a science of getting computers to learn and act as humans do, such accurate pronunciation of words by Google, Chatbot (Online Customer Support), and sentence rephrasing. The ML learns by acquiring data and creating rules for how to turn it into actionable information (Veletsianos, 2019). ML also reasons by focuses on choosing the right algorithm (procedure) to reach a desired outcome. ML as well do self-correction by continually fine-tuning algorithms (process) and ensure they provide the most accurate results possible (Pattam, 2021). Creativity is also an aspect of AI which uses neural networks, rules-based systems, statistical methods and other AI techniques to generate new images, new text, new music and new ideas. Deep Learning (DL) is a subset of machine learning. Deep Learning (DL) can perform far more complex tasks. Deep learning (DL) can process, interpret, and make use of far larger and more complex data sets. Deep learning mimics the working of our brains such as teaching keyboarding (Touch Typing) by Marvis Beacon Teaches, that is needed by all modern age, Text to image such as to convert text into images, such as in the Google Translate app, I love my PDF etc. Machine learning has a simple “if this, then that” mechanism, whereas deep learning has “if this, then that, then what about (x)?” on repeat. In other words,

machine learning can ask and answer one question, but it then requires human intervention (Pattam, 2021). Deep learning will ask and answer one question, based on that answer, ask another question, and answer it, and so on. Deep learning is the most advanced and sophisticated artificial intelligence technology. For example, it enables Google to give you a search result that is tailored specifically for your needs, not just something they think everyone may want to know about. Deep learning goes one step further by enabling Google to tell users what other people are searching for as well, which are applicable to teachers` job performances in the areas of research, teaching and learning.

Lecturers` Job Performances

Lecturers` job performance refers to the extent in which lecturers complete their teaching, research, development and community service tasks. It is the completion of responsibilities and activities intended to facilitate students` learning and achievement of desired educational outcomes (Ukata & Agburuga, 2024). Lecturers` job performance is a concept that scholars have viewed as the degree to which a combination of duties (such as teaching, research and community service) are performed by academic staff of tertiary institution. Academic staff job performance has also been defined as the association between teaching features and educational success within and outside the classroom (Akah et al., 2022). Thus, AI as an aspect of information and communication technology is being used in educational system to enhance teaching and learning process, improve student outcomes, and streamline academic administrative tasks.

AI in Education with Benefits

Artificial Intelligence Education (AIE) builds upon previous learning theories, facilitating teacher adoption of educational tools and integrating best practices to enhance learning (Ukata & Mekuri-Ndimele, 2025; Cope, Kalantzis, & Sears Smith, 2021). AIE benefits teachers and the teaching process through tailored contents for individual learners, at-risk or gifted students, learning predictive models, personalised educational resources, improved classroom management, enhanced teaching across various subjects, academic progress facilitation, and qualified development in pedagogical skills, human behaviour, and interactions (Zhang & Aslan, 2021; Chiu et al., 2023). AI unlocks new research potential in universities and other tertiary institutions by expanding experimental and investigative activities, and disseminating study results. Teachers can focus on complex tasks as AI provides students support

and answers (Southworth et al., 2023). Khosravi et al (2022) advocates integrating explainable AI in education, prioritising human-centred design of educational tools, assessing AI implementation, and enhancing AIE systems for reliability and knowledge transfer support during teaching and learning.

Areas AIs Are Used in the Lecturers' Job Performances

AI is currently used in Plagiarism Detection (Turnitin, Eagle Scan), Academic Research, Online Teaching and Learning, Chatbots for Enrolment and Retention, Learning Management Systems, Transcription of Faculty Lectures, Enhanced Online Discussion Boards, Analysing Student Success Metrics and Connected Campuses (Ukata & Amini, 2025; Onlinedegrees, 2024; Smith, 2022). According to Rose Luckin, a professor of learning-centred design at University College London, as quoted saying, "The real power of artificial intelligence for education is in the way that we can use it to process vast amounts of data about learners, about teachers, about teaching and learning interactions." Ultimately, AI can "help teachers understand their students more accurately, more effectively (Onlinedegrees, 2024)."

Types of AIs and Application on Lecturers' Job Performances with Benefits

The following are some AIs that can be apply on lecturers' job performances with great benefits:

Mavis Beacon Teaches Typing (AI)

Gentle, (2024) posited that the software Mavis Beacon Teaches Typing was first released in 1987 as a tool to train new computer and advanced users on keyboard skills (touch typing). Beacon was praised for helping make computer education more accessible and easier to people of colour, with modern day super fans going so far as to create deep fake footage of Barack Obama and Oprah Winfrey celebrating her influence. The software (AI), Mavis Beacon Teaches Typing, whether you want to learn essential keyboarding skills or improve your overall typing efficiency, Mavis Beacon Teaches Typing Anniversary Edition will guide you on your road to success. It gives beginner ways and improves speed and accuracy with detailed assessments, customized lessons and skill-building games which are needed in different global workplace (Broderbund, 2024).

Quillbot Paraphrasing Tool (AI)

QuillBot paraphrasing tool (AI) is an online writing platform with a bunch of tools aimed at elevating and perfecting your writings. QuillBot (AI)

paraphrases, summarizes, checks for grammar error and plagiarism, translate, outline, create citations and set researchers up for success in schools, workplaces and personal engagements (QuillBot, 2024). Onlinedegrees (2024) outlined some AI tools for teachers and learners in educational system to comprise Palitt which was built to help instructors to easily create "their own custom lecture series, syllabus or textbook for teaching and learning. Jill Watson is also an AI-enabled virtual teaching assistant introduced by the Georgia Institute of Technology in 2016 for teaching and learning. Brainly is another wonderful social media site for classroom questions. Nuance is a great speech recognition software used by students and faculty; capable of transcribing up to 160 words per minute; especially very helpful for students who struggle with writing or have accessibility needs. Contents Technologies is another instructional design and contents application solutions fuelled by artificial intelligence with research engines to aid in teaching and learning.

Similarly, Smith (2021& 2022) outlined several areas of applications of AI in teaching and learning with benefits as follows: 1. Personalized learning: Is an AI used to create customized learning paths for individual students, based on their strengths and weaknesses, learning styles, and interests. 2. Intelligent tutoring systems: Is an AI-powered tutoring system that provides real-time feedback to students, adapt to their individual learning needs, and track their progress. 3. Student performance prediction: Is an AI algorithm that analyses data on student performance, attendance, and other factors to predict which students may be at risk of falling behind and intervene early. 4. Automated grading: Is an AI that is used to grade multiple-choice and shoot-answer questions, freeing up teacher time for other tasks. 5. Learning analytics: Is an AI that helps educators in analyzing students' data to identify trends and patterns, evaluate the effectiveness of teaching methods, and make data-driven decisions. 6. Chatbots and virtual assistants: Are AI-powered chatbots and virtual assistants that provide students with instant answers to common questions, freeing up teachers and administrators to focus on more complex tasks. 7. Campus safety: Is an AI-powered surveillance system that detects unusual behavior and potential threats, alerting campus security personnel in real-time. 8. Recruitment and admissions: Is an AI that is used to analyze applicant data and identify candidates who are most likely to succeed in a given program. 9. Financial aid and student services: Is an AI that helps institutions to automate financial aid applications, identify students

who may be eligible for scholarships or other forms of aid, and provide personalized support to students. 10. Curriculum development: Is an AI used to analyze trends in the job market and identify the skills and knowledge that students will need in the future, informing the development of new curricula and programs (Southworth et al., 2023; Chiu et al., 2023 & Hopcan et al., 2022).

Zotero (AI)

Zotero (AI) is an open-access, easy-to-use reference management tool that serves as your personal research assistant and helps you collect, organize, cite, and share your research sources. Zotero allows teachers and learners to: save references from library catalogues, research databases, and the web. It allows researchers to add PDFs, images, audio and video files, snapshots of web pages, and more, write annotations and attach them to citations and create bibliographies using most major citation styles (Libraries Central Michigan University, 2024).

Justification/Gap of the Study

Although there are related literatures to this study, however, there is none of these literatures that has exact purpose of the study, specific objectives, moderating variables and methodology with the current study, which made this study unique. This study is highly justified because, it will fill a gap in the body of knowledge by revealing the different types of Artificial Intelligence needed to be applied on lecturers' job performances and the benefits of the application of the different types of AI on lecturers' job performances in the selected Rivers state tertiary institutions. The findings and recommendations will provide an empirical data for stakeholders at different levels to take useful decisions on related problems like this topic, "Application of artificial intelligence (AI) on lecturers' job performances in selected River's state tertiary institutions."

Subjects and Moderating Variables of the Study

The subjects for this study are male and female business education and office information and management lecturers with different levels of educational attainment and years of teaching experience in River's state tertiary institutions. Mohammad et al, (2011) averred that how well lecturers demonstrate the knowledge of AI related teaching experience depend on their level of educational qualification, training and retraining, age and teaching experience. For example, lecturers with higher degrees such as (PhD and M.Sc./M.Ed.) are expected to possess higher knowledge and skills with AI related teaching experience than those with HND/B.Sc./B.Ed (Ukata & Udeh, 2022; Ezenwafor

& Ukata, 2022). Accordingly, Ukata and Okeke, (2023), Ukata and Nmihelle, (2022) claimed that teaching experience and age are among the factors that influence lecturers' knowledge and skills with AI related teaching experience because younger and experienced lecturers are more likely to possess them higher than older and less experienced ones. Also, lecturers who have spent 10 years and above in teaching AI related courses are expected to possess higher knowledge and skills to be able to identify the types of AI and their benefits to apply on their job performance than those with less than 10 years teaching experience. Consequently, the study will test the influence of these respondents' variables of their level of educational attainment and years of teaching experience with AI related knowledge and skills on their job performances in selected River's state tertiary institutions using a Post Hoc Test of Multiple Comparisons to know if there was an influence and where the influence actually occurred.

Statement of the Problem

Artificial Intelligence (AI) as an aspect of information and communication technologies (ICTs) is rapidly transforming various industries, including education. AI is being used in educational system to enhance teaching and learning process, improve students' learning outcomes, and streamline administrative tasks in tertiary institutions (Igbokwe, 2023; Gupta, 2020). In recent years, AI in schools offers multiple possibilities for school administrators, teachers, and students (Forero-Corba, & Negre Bennasar, 2024). But despite its many available types and rich benefits in aiding teaching, learning and academic administrative tasks, the application of AIs seem not noticed in the Nigeria educational system in general and its application on lecturers' job performances in the selected Rivers state tertiary institutions in particular.

The researchers are highly worried that AIs seem not incorporated into the teaching of courses, and lecturers also appear not to have given the needed attention to the various types of AIs available and their application in research, teaching and learning process. The reasons may be associated with lack of knowledge about the available types of AI and skills required for the application of AI on lecturers' job performances. These are the justifications for the study, "application of artificial intelligence (AI) on lecturers' job performances in selected River's state tertiary institutions." The study will provide an empirical data for stakeholders to take decisions by revealing the necessity for including AI via yearly internal review process by lecturers, the types of AI

that could be apply on lecturers' job performances and their benefits in River's state tertiary institutions.

Purpose of the Study

The purpose of this study was to determine application of artificial intelligence (AI) on lecturers' job performances in selected River's state tertiary institutions. The specific of objective were to find out:

1. Types of AI needed to be applied on lecturers' job performances in the selected Rivers state tertiary institutions.
2. Benefits of the application of the different types of AI on lecturers' job performances in the selected Rivers state tertiary institutions.

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

3. There is no significant difference in the mean rating of male and female lecturers on the types of AI needed to be applied on lecturers' job performances in the selected Rivers state tertiary institutions based on their educational attainment.
4. Male and female lecturers do not differ in their mean rating on the benefits of the application of the different types of AI on lecturers' job performances in the selected Rivers state tertiary institutions based on their years of experience.

Methodology

The study adopted a descriptive survey research design. Population of the study was all the 62 business education and office information and management lecturers from the four Rivers state tertiary institutions (two universities (Rivers State University (RSU), Department of Business Education 21), Ignatius Ajuru University of Education (IAUE), Department of Office Information Management 17), two polytechnics (Captain Elechi Amadi Polytechnic (CEAPOLY), Department of Office Technology and Management 14), and Kensaro Wiwa Polytechnic (KENPOLY) Department of Office Technology and Management 10) are the tertiary institutions own by Rivers state that offer business education and office and information management programmes as a course or as an option. Data from the department of Business Education, Ignatius Ajuru University of Education (IAUE) was not accessible as at the time of this investigation as such it was not included. Census survey was adopted to sample all the 62-business education and office information and management lecturers because it is of manageable size. The instrument used for data collection was a self-

designed four-point response options questionnaire titled "Application of Artificial Intelligence on Lecturers' Job Performances (AAILJP)". It contains two sections. Sections A and B. Each sections carries 15 items and were rated as very highly (4.50 - 500), highly (3.50 – 4.49), moderately (2.50 – 3.49), and lowly (1.50 – 2.49). The questionnaire was subjected to face and contents validation by three experts from the Faculty of Education in Nnamdi Azikiwe University, Awka. The measure of internal consistency method was used to establish the reliability of the instrument. The instrument was administered to 16 lecturers from the University of Uyo who were not part of the population of the study. The Cronbach's alpha was applied to compute the reliability coefficient which yielded alpha values of 0.78 and 0.79. This high reliability coefficients show that the instrument was reliable for the study as recommended by Nworgu (2015) that a research instrument with a reliability index of 0.70 and above is reliable. The researcher(s) personally administered the copies of the questionnaire to the respondents in their schools with the help of three research assistants who were adequately briefed on the modalities to follow. The researcher(s) first visited each of the tertiary institutions and sought consent from the relevant Heads of Department for the study. Thereafter, the researcher(s) and assistants visited each school and handed over the required number of copies of the instrument to the Heads of the Department to distribute to the business education and office information and management lecturers for completion and, revisited after five working days to retrieve the completed copies. Fifty-seven copies of the instrument were correctly filled, retrieved and used for data analysis. The arithmetic mean and standard deviation were used to answer the two research questions and ascertain how homogeneous or heterogeneous the respondents' opinions were relative to the questionnaire items and the aggregated mean. The one-way analysis variance (ANOVA) was used to test the two null hypotheses at 0.05 level of significance. The ANOVA was used for the two null hypotheses because it measured one categorical independent variable with three levels of moderating variables. A null hypothesis was accepted where the calculated significant (Sig.) value, (p- value) was greater than or equal to (\geq) the alpha value of 0.05. Otherwise, the null hypothesis was rejected. The data analysis was carried out using Statistical Package for Social Sciences (SPSS) version 25.A Tukey Post Hoc Test of multiple comparisons was further conducted.

The motivation for advancing a Tukey Post Hoc Test of multiple comparisons was because it showed the

statistically significant difference in the means and significant (sig.) values. A Tukey Post Hoc Test of multiple comparisons also indicated where the difference (influence) actually existed between the three levels of B.Sc./B.Ed./HND and M.Sc. /M.Ed., B.Sc./B.Ed./HND and PhD, M.Sc. and PhD. Also, between 1-5years and 6-10 years, 1-5 years and above 10 years, and 6-10 years and above 10 years which was not indicated by ANOVA results conducted. Tukey Post Hoc Test of multiple

comparisons was additionally helpful to take a definite decision about the result analysis and interpretation of the influence of the moderating variables on the variables under investigation.

Result Presentation, Analysis and Discussion Research Question 1

What are the types of AI needed to be applied on lecturers' job performances in the selected Rivers state tertiary institutions?

Table 1: Respondents' mean ratings on the types of AI needed to be applied on lecturers' job performances
N = 57

| SN | Types of AI needed to be applied on lecturers' job performances | \bar{X} | SD | Remarks |
|-----------------------|---|-------------|-----|---------------|
| 1 | Marvis Beacon Teaches Typing | 3.62 | .88 | Highly |
| 2 | ChatGPT and Chatbots | 3.65 | .81 | Highly |
| 3 | Intelligent tutoring systems | 3.75 | .81 | Highly |
| 4 | Text to image converter (I love my pdf) | 3.77 | .78 | Highly |
| 5 | Turnitin, Eagle Scan | 3.72 | .85 | Highly |
| 6 | AI-direct (learner-as-recipient) | 3.58 | .84 | Highly |
| 7 | AI-supported (learner-as- collaborator) | 3.60 | .88 | Highly |
| 8 | AI-empowered (learner-as-leader) | 3.67 | .82 | Highly |
| 9 | Quillbot Paraphrasing Tool | 3.74 | .81 | Highly |
| 10 | Palitt | 3.71 | .81 | Highly |
| 11 | Contents Technologies | 3.76 | .79 | Highly |
| 12 | Personalized learning AI | 3.72 | .85 | Highly |
| 13 | Intelligent tutoring systems | 3.58 | .84 | Highly |
| 14 | Student performance prediction | 3.60 | .88 | Highly |
| 15 | Zotero | 3.67 | .80 | Highly |
| Aggregate Mean | | 3.67 | | Highly |

Table 1 shows that all the 15 listed types of AI were highly needed to be applied on lecturers' job performances with mean scores that ranged from 3.58 to 3.77. Also, the aggregated mean score of 3.67 shows that all the listed types of AI were highly needed to be applied on lecturers' job performances. The standard deviations for the 15 listed items ranged within 0.78 to 0.88 which shows that respondents were homogeneous in their opinions that all the listed types of AI were highly needed to be applied on lecturers' job performances in the selected River's state tertiary institutions.

Research Question 2

What are the benefits of the application of the different types of AI on lecturers' job performances in selected River's state?

Table 2: Respondents' mean ratings on the benefits of the application of the different types of AI on lecturers' job performances
N = 52

| SN | Benefits of the application of the types of AI on lecturers' job performances | \bar{X} | SD | Remarks |
|----|--|-----------|-----|-------------|
| 16 | Marvis Beacon Teaches Typing teaches keyboarding skills (touch typing) | 4.51 | .79 | Very Highly |
| 17 | ChatGPT and Chatbots serve as online learners/customers support | 4.54 | .85 | Very Highly |
| 18 | Intelligent tutoring systems provides feedback to students, adapt to their individual learning needs, and track their progress | 4.51 | .84 | Very Highly |
| 19 | Text to image converter (I love my pdf) assist to convert documents of different forms into different format for use | 4.51 | .88 | Very Highly |
| 20 | Turnitin is for anti-plagiarism detection and academic fraud | 4.53 | .92 | Very Highly |
| 21 | AI-direct see the learner-as-recipient during teaching and learning | 4.52 | .81 | Very Highly |

| | | | | |
|-----------------------|---|-------------|-----|--------------------|
| 22 | AI-supported see the learner-as- collaborator during teaching and learning | 4.51 | .81 | Very Highly |
| 23 | AI-empowered see the learner-as-leader in teaching and learning | 4.54 | .79 | Very Highly |
| 24 | Quillbot paraphrasing tool assist to summarize sentences, checks grammar and plagiarism, translate and create citations | 4.53 | .85 | Very Highly |
| 25 | Palitt assist instructors to easily create “their own custom lecture series, syllabus or textbook. | 4.52 | .79 | Very Highly |
| 26 | Contents Technologies assist in instructional design and contents creation | 4.51 | .85 | Very Highly |
| 27 | Personalized learning AI is used to create customized learning paths for individual students | 4.50 | .84 | Very Highly |
| 28 | Intelligent tutoring systems track learners progress and gives feedback | 4.52 | .88 | Very Highly |
| 29 | Student performance prediction predicts which students may be at risk of falling behind and intervene early | 4.52 | .92 | Very Highly |
| 30 | Zotero helps you to organize, cite, reference and share your research sources. | 4.54 | .81 | Very Highly |
| Aggregate Mean | | 4.52 | | Very Highly |

Table 2 shows that the application of all the 15 different types of AI stated were very highly beneficial on lecturers’ job performances with mean scores that ranged from 4.50 to 4.54. The aggregated mean score of 4.52 also shows that the application of all the different types of AI stated were very highly beneficial on lecturers’ job performances. The standard deviations for the 15 listed items ranged within 0.79 to 0.92 which shows that respondents were homogeneous in their opinions that the application of all the different types of AI listed were as well very highly beneficial on lecturers’ job performances in selected River’s state.

Hypotheses Testing

Table 3: ANOVA summary of male and female lecturers on types of AI needed to be applied on lecturers’ job performances based on educational attainment.

| Sources of Variance | Sum of Squares | Df | Mean Square | F-cal. | Sig. | Decision |
|---------------------|----------------|-----------|-------------|--------|------|-----------------|
| Between Groups | 2.358 | 2 | 1.229 | 1.388 | .383 | Accept H_{01} |
| Within Groups | 54.357 | 55 | .777 | | | |
| Total | 57.615 | 57 | | | | |

Table 3 shows a calculated F-value of 1.38 with a significant (sig.) p-value of 0.38 which is greater than the alpha value of 0.05 ($0.38 > 0.05$) at degrees of freedom of 2 and 55. Therefore, the null hypothesis (H_{01}) was accepted. This means that there is no significant difference in the mean rating of male and female lecturers on the types of AI needed to be applied on their job performances in selected River’s state tertiary institutions based on their educational attainment.

Table 4: ANOVA summary of male and female lecturers on the benefits of the application of the different types of AI on lecturers’ job performances based on years of teaching experience.

| Sources of Variance | Sum of Squares | Df | Mean Square | F-cal. | Sig. | Decision |
|---------------------|----------------|-----------|-------------|--------|------|-----------------|
| Between Groups | 1.641 | 2 | .830 | 1.261 | .262 | Accept H_{02} |
| Within Groups | 47.959 | 55 | .784 | | | |
| Total | 46.600 | 57 | | | | |

Data on Table 4 show a calculated F-value of 1.26 with a significant (sig.) p-value of 0.26 which is greater than the alpha value of 0.05 ($0.26 > 0.05$) at degrees of 2 and 55. Therefore, the null hypothesis (H_{02}) was accepted. This means that male and female lecturers do not differ in their mean rating on the benefits of the application of the different types of AI on their job performances in selected River’s state tertiary institutions based on their years of experience.

Discussion

The study showed a calculated F-value of 1.38 with a significant (sig.) p-value of 0.38 which is greater than the alpha value of 0.05 ($0.38 > 0.05$) at degrees of freedom of 2 and 55. Therefore, the null hypothesis (H_{01}) was accepted. This means that there is no significant difference in the mean rating of male and female lecturers on the types of AI needed to be applied on their job performances in selected River's state tertiary institutions based on their educational attainment. The descriptive statistics showed that B.Sc./B.Ed./HND have mean score of 3.50, meaning the type of AI were highly needed, M.Sc./M.Ed. with mean score of 3.00, meaning a highly needed and PhD was 3.49, meaning highly needed too.

The total mean was 3.63, meaning that respondents agreed that the types of AI were highly needed on the job performances of the lecturers. Additionally, the Levene's Test of Homogeneity of Variances showed that there were no variances in the samples to account for possible means differences since the p-values of 0.10, 0.33, 0.33, and 0.11 were greater than 0.05 alpha level. However, since the ANOVA test did not indicate which pair of the means of the educational attainment had statistically significant difference to show the influence on the variables. This necessitated a Tukey Post Hoc Test of multiple comparisons which showed that there was also no statistically significant difference in means between M.Sc./M.Ed., and PhD with p-values of 0.17 and 0.17, which were greater than 0.05 alpha level. Correspondingly, the Tukey post hoc test as well showed that there was no statistically significant difference between B.Sc./B.Ed./HND and M.Sc./M.Ed. with ($p = 0.75$), or between B.Sc./B.Ed./HND and PhD ($p = 0.68$), (see appendix 1, details of tested hypothesis 1 on pages 11-12). Meaning that all the listed types of AI were highly needed to be applied on lecturers' job performances based on their educational attainment.

The findings agree with Forero-Corba and Negre Bennasar, (2024) who augured that AI in schools offers multiple possibilities for school administrators, teachers, and students. One example is ChatGPT, the latest version, GPT-4, which is usually integrated into software such as Microsoft Office, Edge, and Bing for optimizing educational tasks. The findings also concur with Ouyang and Jiao (2021) as they identified three AIE paradigms to include: "AI-direct, learner-as-recipient", "AI-supported, learner-as-collaborator", and "AI-empowered, learner-as-leader" as other types of AI for teaching and learning. Furthermore, the findings

see eye to eye with Gentle (2024) who identified Mavis Beacon Teaches Typing, QuillBot, (2024) that indicated Quillbot Paraphrasing Tool, and Onlinedegrees (2024) that outlined Palitt, Contents Technologies, Personalized learning among others as types of AI needed for teaching and learning processes. The fact that all the lecturers indicated that all the types of AI listed are highly needed on lecturers' job performances based educational attainment is a serious call that they should be urgently included in the business education and information and management curricula, and lecturers should do internal inclusion during teaching and learning while waiting for national curriculum review.

The study showed a calculated F-value of 1.26 with a significant (sig.) p-value of 0.26 which is greater than the alpha value of 0.05 ($0.26 > 0.05$) at degrees of 2 and 55. Therefore, the null hypothesis (H_{02}) was accepted. This means that male and female lecturers do not differ in their opinions on the benefits of the application of the different types of AI on their job performances in selected River's state tertiary institutions based on their years of experience. The descriptive statistics showed 1-5 years with mean score of 4.00, meaning a very highly, 6-10 years with 4.07, indicating highly, and above 10 years was 3.32, meaning highly. The total mean was 4.50, also signify very highly. This shows that the application of all the different types of AI stated were very highly beneficial on lecturers' job performances.

Furthermore, the Levene's Test of Homogeneity of Variances shows that there were variances in the samples to account for possible means differences among the means samples or groups since the p-values (sig.) of 0.02, 0.02, 0.05 and 0.05 were lesser than and equal to 0.05 alpha level. Because the ANOVA test did not indicate which pair of the means of the years of teaching experience had statistically significant difference and influence. This required a Tukey Post Hoc Test of multiple comparisons which showed that there was no statistically significant difference in means between 6-10 years and above 10 years teaching experiences. The p-values for 6-10 years and above 10 years were 0.18 and 0.18, which were also greater than 0.05 alpha level. However, the Tukey post hoc test furthermore showed that there was statistically significant difference between 1-5 years and 6-10 years with a p-value of 0.99, or between 1-5 years and above 10 years with a p-value of 0.54. This shows that lecturers did not totally agree that the application of all the different types of AI stated were very highly beneficial on lecturers' job performances based on

the years of teaching experience, (see appendix 2, details of tested hypothesis 2 on pages 12-13).

Finding of the study harmonizes with the views of Veletsianos, (2019), Onlinedegrees, (2024), Smith, (2022), Zhang and Aslan, (2021); Chiu et al., (2023) who identified ChatGPT and Chatbot as online chat channel for students and customer supports, Turnitin for plagiarism academic fraud detection. Also, AI personalised educational resources, improved classroom management, enhanced teaching across various subjects, and create academic progress facilitation. The finding further agrees with the views of Broderbund, (2024), that Beacon Teaches Typing teach various class of learners keyboarding skills (touch typing), while Libraries Central Michigan University, (2024) noted that Zotero AI allows teachers and learners to organize their work, do citations, save references from library catalogues, research databases, and the web. The finding concurs too with the interpretations of Ukata and Okeke, (2023), Ukata and Nmihelle, (2022) who claimed that teaching experience and age are among the factors that influence lecturers' knowledge and skills of AI related teaching experience because younger and experienced lecturers are more likely to possess them higher than older and less experienced ones. The authors added that, although AI has a lot of benefits, it also posed challenges of piracy, system attacks, regular upskilling, high cost of maintenance among others.

Conclusion

Based on the findings that emanated from the discussions of the study, it was concluded that if AI is applied on lecturers' job performances, it will transform the business education and office information and management programmes positively, leading to AI skills development and enable the learners to acquire the needed employability skills for the global workplace. Additionally, it was concluded that educational attainment and years of teaching experience play vital roles in identifying the types of AI to be used and the benefits of the application of those AIs on lecturers' job performances.

Finally, it was concluded that because the needed AI employability skills will be acquired by learners if included and taught to learners, it will assist to drastically reduce the high rate of un-employment among business education and office information and management graduates in River's state in particular and Nigeria in general.

Recommendations

Based on the findings and conclusion of the study, the following recommendations were made:

1. AI should be included during the teaching of business education and office information and management courses through yearly internal curriculum review by lecturers in collaboration with the authorities of their various institutions, and five years national review by federal government, since all the types listed are highly needed on lecturers' job performances. Federal, states and local governments should provide enough funding for the procurement of AI equipment to enable lecturers and students have access to them for better teaching and learning experience. Heads of institutions running business education and office information and management programmes should fund the procurement of AIs facilities via internally generated revenue.
2. Since whatever knowledge one acquires remains with the person, the business education and office information and management lecturers should make personal sacrifices from their earnings and engage in AI trainings through online and offline short courses to enable them acquire a very highly AI knowledge and skills to perform on the job as well as sustain and remain relevance in their areas of operations. Tertiary institutions running the programmes should send lecturers on AI specialise training to aid them in gaining the needed skills since the training may be expensive for lecturers to bear.
3. Since the level of educational attainment and years of experience play vital roles in identifying the types and benefits of AIs needed to be apply on lecturers' job performances, educators with the required academic qualifications and years of experiences should be employed by institutions running the programmes. These will assist in the implementation of AI curriculum and transferring AI skills to learners to acquire the needed employability skills.

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Appendix 1

| |
|---|
| HYPOTHESIS 1 |
| DATASET ACTIVATE DataSet1. |
| ONEWAY ITEM15 BY EDUCATIONAL ATTAINMENT |
| /STATISTICS DESCRIPTIVES HOMOGENEITY |
| /MISSING ANALYSIS |
| /POSTHOC=TUKEY ALPHA(0.05). |

| Descriptives | | | | | | | | |
|---|----|--------|----------------|------------|----------------------------------|-------------|---------|---------|
| Teach how to structure researchable topic | | | | | | | | |
| | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
| | | | | | Lower Bound | Upper Bound | | |
| BSC/BED/HND | 2 | 3.5000 | .78711 | .50000 | -1.8531 | 10.8531 | 4.00 | 5.00 |
| MSC/MED | 14 | 3.0000 | .87937 | .18157 | 3.6077 | 4.3923 | 3.00 | 5.00 |
| PHD | 41 | 3.4898 | .88155 | .14022 | 3.2079 | 3.7717 | 1.00 | 5.00 |
| Total | 57 | 3.6308 | .84487 | .11720 | 3.3966 | 3.8649 | 1.00 | 5.00 |

| Test of Homogeneity of Variances | | | | | |
|---|--------------------------------------|------------------|-----|--------|------|
| | | Levene Statistic | df1 | df2 | Sig. |
| Teach how to structure researchable topic | Based on Mean | 2.363 | 2 | 55 | .103 |
| | Based on Median | 1.102 | 2 | 55 | .339 |
| | Based on Median and with adjusted df | 1.102 | 2 | 56.634 | .339 |
| | Based on trimmed mean | 2.271 | 2 | 57 | .112 |

| ANOVA | | | | | |
|---|----------------|----|-------------|-------|------|
| Teach how to structure researchable topic | | | | | |
| | Sum of Squares | Df | Mean Square | F | Sig. |
| Between Groups | 2.358 | 2 | 1.229 | 1.388 | .383 |
| Within Groups | 54.357 | 55 | .777 | | |
| Total | 57.615 | 57 | | | |

| Post Hoc Tests | | | | | | |
|---|----------------------------|-----------------------|------------|------|-------------------------|-------------|
| Multiple Comparisons | | | | | | |
| Dependent Variable: Teach how to structure researchable topic | | | | | | |
| Tukey HSD | | | | | | |
| (I) Educational Attainment | (J) Educational Attainment | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
| | | | | | Lower Bound | Upper Bound |
| BSC/BED/HND | MSC/MED | .50000 | .69723 | .754 | -1.1742 | 2.1742 |
| | PHD | 1.01020 | .66537 | .289 | -.5875 | 2.6079 |
| MSC/MED | BSC/BED/HND | -.50000 | .69723 | .754 | -2.1742 | 1.1742 |
| | PHD | .51020 | .27951 | .170 | -.1610 | 1.1814 |
| PHD | BSC/BED/HND | -1.01020 | .66537 | .289 | -2.6079 | .5875 |
| | MSC/MED | -.51020 | .27951 | .170 | -1.1814 | .1610 |

Appendix 2

| HYPOTHESIS 2 |
|---|
| DATASET ACTIVATE DataSet1. |
| ONEWAY ITEM30 BY YEARS OF TEACHING EXPERIENCE |
| /STATISTICS DESCRIPTIVES HOMOGENEITY |
| /MISSING ANALYSIS |
| /POSTHOC=TUKEY ALPHA(0.05). |

| Descriptives | | | | | | | | |
|---|----|--------|----------------|------------|----------------------------------|-------------|---------|---------|
| Exemplify how to state specific objectives of a study | | | | | | | | |
| | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
| | | | | | Lower Bound | Upper Bound | | |
| 1-5 Years | 2 | 4.0000 | .00000 | .00000 | 4.0000 | 4.0000 | 4.00 | 4.00 |
| 6-10 Years | 14 | 4.0714 | .79573 | .16456 | 3.7159 | 4.4269 | 3.00 | 5.00 |
| Above 10 Years | 41 | 3.3265 | .84401 | .13486 | 3.0554 | 3.5977 | 1.00 | 5.00 |
| Total | 57 | 4.5077 | .92065 | .11419 | 3.2796 | 3.7358 | 1.00 | 5.00 |

| Test of Homogeneity of Variances | | | | | |
|----------------------------------|-----------------|------------------|-----|-----|------|
| | | Levene Statistic | df1 | df2 | Sig. |
| | Based on Mean | 4.003 | 2 | 62 | .023 |
| | Based on Median | 2.971 | 2 | 62 | .059 |

| | | | | | |
|---|--------------------------------------|-------|---|--------|------|
| Exemplify how to state specific objectives of a study | Based on Median and with adjusted df | 2.971 | 2 | 58.575 | .059 |
| | Based on trimmed mean | 4.018 | 2 | 62 | .023 |

| ANOVA | | | | | |
|---|----------------|----|-------------|-------|------|
| Exemplify how to state specific objectives of a study | | | | | |
| | Sum of Squares | Df | Mean Square | F | Sig. |
| Between Groups | 1.641 | 2 | .830 | 1.261 | .262 |
| Within Groups | 47.959 | 55 | .784 | | |
| Total | 46.600 | 57 | | | |

| Post Hoc Tests | | | | | | |
|---|----------------------------------|-----------------------|------------|------|-------------------------|-------------|
| Multiple Comparisons | | | | | | |
| Dependent Variable: Exemplify how to state specific objectives of a study | | | | | | |
| Tukey HSD | | | | | | |
| (I) Years Of Teaching Experience | (J) Years Of Teaching Experience | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
| | | | | | Lower Bound | Upper Bound |
| 1-5 Years | 6-10 Years | -.07143 | .66308 | .994 | -1.6636 | 1.5208 |
| | Above 10 Years | .67347 | .63278 | .540 | -.8460 | 2.1929 |
| 6-10 Years | 1-5 Years | .07143 | .66308 | .994 | -1.5208 | 1.6636 |
| | Above 10 Years | .74490* | .26582 | .018 | .1066 | 1.3832 |
| Above 10 Years | 1-5 Years | -.67347 | .63278 | .540 | -2.1929 | .8460 |
| | 6-10 Years | -.74490* | .26582 | .018 | -1.3832 | -.1066 |

*. The mean difference is significant at the 0.05 level.