

ACQUISITION TRAINING AND RETRAINING IN THE USED OF ARTIFICIAL INTELLIGENCE FOR ENHANCED PERFORMANCE BY LECTURERS IN PUBLIC UNIVERSITIES IN CROSS RIVER STATE

Dr. Patrick Etim Oche¹ & Dr. (Mrs.) Abang, Maureen Barong²

University of Calabar, Calabar, Nigeria

ochepatricketim@gmail.com¹; abangmaureen@gmail.com²

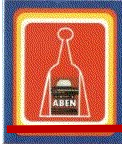
Abstract

This study examines the impact of skill acquisition training and retraining in the used of artificial intelligence for enhanced performance by lecturers in public universities in cross river state. Specifically, the study examined the impact of skill acquisition training and retraining in the use of Chatbots, Automatic Assessment, AI-based training as the independent variables and enhanced performance by lecturers in public universities in Cross River State as the dependent variable. Three research questions were posed, and three null hypotheses formulated accordingly to guide the study. The research design adopted for this study was descriptive survey research design. The population of the study is made up of 42 lectures from the department of Vocational education in University of Calabar and 29 lecturers from department of vocational and technical education, Cross River University, giving a total population of 71 lecturers. Sampling technique adopted was the census technique for the study. Skill Acquisition Training and Retraining Using Artificial Intelligence for Enhanced Performance Questionnaire (ASTRAIEPQ) was used to collect data or the study. It was measured on a four-point rating scale of strongly agree (SA), Agree (A), Strongly Disagree (SD), and Disagree (D). Data collected from this instrument was analysed using simple linear regression was employed to test the hypotheses with the aid of Statistical Package for Social Sciences (SPSS) at 0.05 level of significant. The results of the analysis revealed that, there is a significant influence of skill acquisition training and retraining in the used of artificial intelligence for enhanced performance by lecturers in Nigerian universities in Cross River State. The study concluded that skill acquisition training and retraining using artificial intelligence enhanced the performance of lecturers in public universities in Cross River State. Based on the findings of the study, it was recommended among others that Lecturers should increase the use of Chatbots in carrying out statutory duties of teaching and assessing students to increase their skill acquisition level for enhance performance.

Keyword: Artificial Intelligence, Skill Acquisition, Chatbots, Automatic Assessment, AI-based training, academic research Training, Retraining

Introduction

Success in every organization including educational institutions like the university is largely depended on number of skilled individuals or workforce in such organization. When there are a good number of qualified individuals in an organization, performance is likely to improve which will result in goal attainment. To keep skills of employees in check and maintain optimal performance in this competitive and ever-changing world of work occasioned by technological advancement and innovation, training and retraining is inevitable. Training is used to introduce new ways of carrying out a task or working, while retraining on the other hand serves as a reminder course to employees. Training and retraining are the process of maintaining the skills needed in the business world, be it academic institutions or other business sectors to achieve organizational goals and objectives through improved employees' performance.

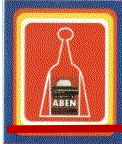


According to Ezeani and Oladele (2013), training is the development of specific skills and attitudes needed to perform a particular job or series of jobs to maximize the productivity of the individual and improve the overall organizational efficiency. Ohakwe in Ezeani and Oladele (2013) defined training as continuous assistance or coaching, given to an employee to make him have current knowledge of the job content, scope and relationship within the organization. Training is a type of activity which is planned, systematic and it results in enhanced level of skill, knowledge and competency that are necessary to perform work effectively (Nassazi, 2013). Retraining in education on the other hand, is an on-the-job training used by institutions to bring about progress and enhanced competency in the educators. It is essential especially with the frequent changes of educational policies and in the evolving new knowledge and technology-based society. Retraining lecturers can help to reduce mistakes and improve quality and innovations in the teaching profession (Igbo, Eze, Eskay, Onu & Omeje, 2012). Oguejiofor and Ezenwanne (2020) noted that training and retraining programmes stand to increase lecturers' intellectual and professional background; produce knowledgeable, competent, and effective educators capable of inspiring students to learn; produce academically and professionally sound and highly motivated conscientious and dynamic breed of lecturers; and enhance lecturers' commitment to the teaching profession.

According to Adeogun (2013), lecturers' training and retraining programmes are associated with the general improvement of lecturers' quality in terms of behaviour, attitudes, skills, knowledge, and perception and in the performance of their duties. Alabi (2014) supported that the immediate aim of lecturer training and retraining programmes in tertiary institutions is to improve the quality of lecturers in terms of teaching and learning processes. Lecturers in tertiary institutions should be encouraged to attend training and retraining programmes for capacity building and development. These can be achieved by exposing them to in-service training, such as induction programmes, ICT training, workshops, conferences, seminars, and refresher courses (Alabi, 2014). These trainings especially, the ICT training would expose lecturers to the emerging tools in ICT including the recent artificial intelligence (AI) and equip them with the necessary skills to carry out their job of impacting knowledge to students.

Artificial intelligence (AI) is an innovative technical framework that encompasses the creation of computer systems with the ability to execute activities that usually need human intellect (Aina et al., 2023). These activities involve problem-solving, acquiring knowledge, comprehending language, and seeing visual information. AI has become increasingly prominent in recent years, bringing about a revolutionary transformation in the methods by which jobs are completed in numerous businesses. According to Aina et al. (2023), in education, artificial intelligence (AI) offers a multitude of opportunities to enhance the teaching and learning processes. Intelligent systems provide the ability to adjust to the specific requirements of each learner, deliver tailored learning experiences, and provide immediate feedback. Using artificial intelligence, educators could construct dynamic and interactive learning environments that accommodate the various learning styles and capabilities of students (Aina et al., 2023).

The emergence of artificial intelligence (AI) has a transformative technology with profound implications across various domains. AI has shown latent capability in education to revolutionize teaching and research methodologies, offering personalized learning experiences, enhancing academic performance, and streamlining research processes that required specific skills. Skill levels of lecturers in using AI, amongst others software applications, MS PowerPoint, Canvas, and gamma which emerged as powerful tools for creating captivating and informative presentations. These tools enable lecturers to incorporate multimedia elements, such as images, videos, and animations, to effectively convey complex concepts and engage students in the

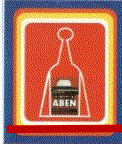


learning process (Aiyedun, 2020). Ogunode and Olowonefa (2023) examined the problems facing development of AI education in Nigerian schools. And concluded that AI can be applied in preparation of students result report, school administration, aid effective learning, effective teaching implementation (intelligent tutoring), virtual learning environment and effective data management. Ogunode and Olowonefa further identified funding problems, shortage of AI teachers, inadequate infrastructure facilities (laboratories), shortage of instructional materials and lack of sound AI curriculum as problems facing development of teaching and learning of AI in Nigerian schools. With these tools, lecturers are equipped with the needed skills in advancing world like ours. A study by Ogunode, Agbade and Bassey, (2023) assessed the barriers to effective usage of AI in tertiary institutions in north-central, Nigeria. the result of the study revealed that poor funding, high cost of AI maintenances, high cost of artificial intelligence facilities, unstable internet services, unstable electricity, low level of digital literacy among staff, low level of digital literacy among students, and shortage of AI personnel are barriers to effective usage of AI in tertiary institution in north central, Nigeria. The use of AI requires users to develop specific skills.

According to Okute (2013), skill is the capacity to accomplish a task in a systematic and efficient manner, as well as experience gained through a rigorous training procedure. Skill is the combination of cognitive-knowledge and ability to learn new information; affective; feeling, emotion and expression of attitude; psychomotor - actions, origination of movement in conscious mental activities. Skill is the proficiency in performance and may be enhanced by practice and training. Skills are multidimensional constructs; they comprise the cognitive – knowledge and what is learnt; the affective - emotional expression and what is experienced; the behaviour - action at strategic, tactical, and personal levels; and the context - sectorial, occupational, job and task levels. Skills are abilities and competences needed to perform a task (Ediagbonya, 2010). An employee needs to acquire relevant skills that will help him perform in the job.

According to Ombugus and Umaru (2017) skill acquisition is a process of gaining manipulative skills by learners to make them perform more expertly and improve on their businesses or jobs. Omidiji and Ogwu (2019) defined skill acquisition as a systematic and sequential development of skills that promotes efficiency and effectiveness in the performance of a specified job. Skill acquisition is the process of developing capacities through all levels of education and training, occurring in formal, non-formal, and on-the-job settings, which enable individuals in all areas of the economy to be fully and productively engaged in livelihoods and to have the capacity to adapt their skills to meet the changing demands and opportunities of the economy and labour market especially in the e-world (Enang&Okute, 2019). Skill acquisition has been described by many as the recipe for eradicating extreme poverty and hunger by creating avenue for employment, thereby creating job opportunities and wealth creation (Enang&Okute, 2019). Gumbari in Mshelia (2019) asserts that skill acquisition in Nigeria should be perceived as a catalyst to increase the rate of economic growth, create job opportunities, reduce import of manufactured goods, and decrease trade deficits that result from such import. Technological skills that will enhance performance using Artificial Intelligence is indispensable in this economy era.

There are several Artificial Intelligence (AI) tools that will help lecturers in the public universities to acquire skills to be able impact knowledge to students that will prepare the learners future challenges of advancing technological world. These tools ranges from AI-chatbots, AI-based training in academic research and data analysis, Automatic Assessment (AA), Character AI, QuillBot, Mid Journey, Hugging Face, Google Bard/Gemini, NovelAI, CapCut, Janitor AI, Civitai, etc. However, this paper is delimited to AI-chatbots, AI-based training in academic



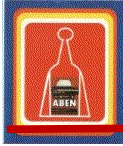
research and data analysis, and Automatic Assessment (AA) which are considered as the variable for this study.

According to Afonughe, Onah, Uzoma, Andor and Orisakwe (2021), AI-chatbots (artificial intelligence-enabled chatbots) is a conversational tool or a developed software application that operates with highly programmed algorithm and intelligence that runs on social network Apps/platform such as Facebook messenger, WhatsApps among others. The optimal goal of AI-chatbots is to explore the key AI functions (mimic human natural language, senses and perception in solving complex problem) to hold a conversation with the end user by giving directions and guidance to the individual who sought for these service (Afonughe, et al., 2021). According to Atlas (2023), chatbots for teachers provide a unique opportunity to improve the educational process and connect with students in new ways by providing individual feedback and assistance, allowing teachers to focus on other tasks. Cunningham-Nelson et al. (2019) state that chatbots can deliver and customize various aspects of education. Okonkwo and Ade-Ibijola (2021) noted that using chatbot technology holds promise in delivering efficient and tailored services to individuals within the educational domain. Sandu and Gide (2019) carried out a study on using AI chatbots inside the higher education system in India. And they stated that the advantages of utilizing chatbots to improve students' learning experiences. AI chatbots offer students prompt feedback, address inquiries, and make tailored suggestions. Moreover, chatbots can provide information without requiring extensive, time-consuming searches while concealing the underlying complexity (Ondáš et al., 2019).

According to the results of Pérez et al. (2020), chatbots have the potential to facilitate learning in a manner comparable to that of a human teacher. Also, Sung (2020) assesses AI English-language chatbots and posits that they are anticipated to significantly contribute to achieving speaking and listening proficiency benchmarks. Furthermore, AI chatbots support educators and administrators in their day-to-day responsibilities, particularly evaluating assignments, monitoring student advancement, and offering administrative assistance. AI chatbots have been found to assist in many educational endeavours. As a result, this technology provides educators with additional time to dedicate to tasks that necessitate human involvement, such as offering mentorship and assistance to students. Another important AI tool that can enhance lecturers' performance is virtual monitoring (Yang & Evans, 2019).

Afonughe, et al. (2021) found that there is no significant difference in the mean rating of respondents on the need for AI-Chabot in teaching and learning as well as performing administrative tasks among universities in South-South; and that there is little availability of AI-Chabot technology in handling universities' administrative duties; and the findings showed that poor internet facilities, instabilities in governance, inadequate funding, poor electricity supply among others are factors inhibiting the implementation of AI-chatbot towards administrative duties among universities in South-South, Nigeria. Another AI powerful tool that can be used in education is AI-based training in academic research and data analysis.

AI-based training is revolutionizing academic research and data analysis by enhancing efficiency, accuracy, and accessibility. Modern AI tools such as machine learning algorithms, natural language processing, and automated statistical models are being integrated into research methodologies to assist in data cleaning, hypothesis generation, and complex analytics (Jordan & Mitchell, 2015). These tools can process large datasets at speeds and depths previously unattainable through traditional methods, enabling researchers to identify patterns and insights more effectively (Shmueli et al., 2017). Moreover, AI-powered platforms like IBM Watson, ChatGPT, and Google's AutoML are being used in educational settings to train researchers in data analysis, promoting skill development through interactive, adaptive learning systems

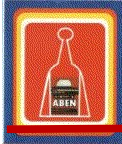


(Holmes et al., 2019). These platforms facilitate the democratization of advanced analytics by making them accessible to non-experts, thus broadening participation in data-driven research. However, the use of AI raises concerns about data privacy, algorithmic bias, and reproducibility. Therefore, responsible implementation, transparency, and continuous ethical review are essential (Binns, 2018). Overall, AI-based training is a powerful enabler in academic research and data analysis, but it must be employed with caution and oversight to ensure trustworthy outcomes.

Ramasamy et al. (2025) conducted a controlled lab experiment with purposively sampled data scientists experienced in Jupyter notebooks. Approximately 24 participants recruited via Prolific and Upwork performed descriptive and predictive tasks with or without AI recommendations supplied through a GPT-4-powered notebook plugin. Prompt templates were pilot-tested to ensure consistency, and recommendation acceptance rates were tracked across sessions. The study found that including clear task-step prompts led to significantly higher acceptance of AI-generated suggestions; descriptive tasks elicited greater uptake than predictive ones, while offering multiple alternatives had no effect on adoption. Though reliable within its design, the sample was limited to experienced notebook users, constraining broader generalizability. Baillifard et al. (2023) performed a semester-long, quasi-experimental field study involving 51 psychology undergraduates in a neuroscience course at UniDistance Suisse. Participants using a GPT-3-powered tutor received personalized micro-learning quizzes based on spaced-repetition and retrieval practice, while a control cohort followed the standard curriculum. The neural "learnt" model was validated against final exam grades, and question-generation protocols were standardized across the intervention. Students who actively engaged with the AI tutor scored up to 15 percentile points higher, with mastery predictions strongly correlating with actual outcomes. This suggests that AI tutors built on learning-science principles can significantly enhance performance, although the non-random cohort assignment limits causal inference.

Zheldibayeva (2025) surveyed 36 postgraduate researchers in Kazakhstan who used CGScholar during an academic writing internship. Using a convenience sample, the study leveraged Likert-scale questionnaires to assess familiarity with AI tools, openness to feedback, and writing expectations. Reliability was supported by standardized survey items. A moderate positive relationship was observed between familiarity with AI tools and receptiveness to revision, and a strong correlation emerged between prior writing experience and expectations for methodological feedback. Participants appreciated AI feedback but continued to rely on human reviewers. The small, self-selected sample and self-report data, however, limit the findings' broader applicability. Gabriel et al. (2024) ran an experimental replication study testing GPT-3.5's ability to assist with quantitative data analysis in social science contexts. Researchers prompted ChatGPT to generate code for standard statistical tasks and evaluated functionality, interpretive accuracy, and reproducibility. Although GPT-3.5 reliably produced correct and executable code, occasional misinterpretations, errors, and superficial explanations appeared—especially when prompts lacked specificity. The study underlined the importance of user expertise and prompt engineering to avoid methodological pitfalls, and while validation was grounded in reproduction of published results, its scope was limited to GPT-3.5 and selected use cases.

Across these studies—a mixed-methods lab experiment, a quasi-experimental field trial, a survey, and replication experiments—several consistent themes emerge. Prompt clarity enhances AI usefulness in technical workflows; AI tutors aligned with pedagogical principles deliver measurable learning benefits; AI feedback works best in combination with human insight; and human oversight remains essential to address AI limitations and ensure reliability. These



empirical investigations consistently report quantitative metrics, standardized procedures, and validation checks, yet each is constrained by relatively small, non-random samples or specific contexts. Future research in AI-based training would benefit from larger, more diverse populations, rigorous randomization, and exploration of newer, fine-tuned models across various domains.

According to Fitria (2021), AI commonly used for online automatic assessment and question correction purposes. The use of features like this makes it easier for teachers and tutors to prepare and conduct quizzes and tests easily and practically. Lecturers and instructors no longer need to make questions and correct questions manually. The use of features like this makes it easier for teach lecturers and tutors to prepare and conduct quizzes and tests easily and practically. The feature in automatic assessment allows lecturers to create quizzes and tests easily and practically. Lecturers only need to choose the type of subject, level, number of questions, level of difficulty, and several other options. After that, the teacher only needs to share the quiz link with the students to do it directly online. This feature allows lecturers to create quizzes and tests easily and practically.

Lecturers only need to choose the type of subject, level, number of questions, level of difficulty, and several other options. After that, the lecturers only need to share the quiz link with the students to do it directly online. Student quiz results can be directly accepted automatically on the teacher's account. There is a score, a list of wrong questions, correct questions, and discussion. Just imagine that lecturers no longer must bother manually correcting and assessing the results of quizzes and student tests (Bin & Mandal, 2019). Everything has been done by the programmed AI system. Automation of these processes will give teachers more time to monitor student progress and focus on improving teaching techniques. The AI system will work independently according to programmed instructions and can learn according to the habits of the user or student. AI will even provide recommendations for material that needs to be studied again and others based on the results you have obtained (Bin & Mandal, 2019).

Statement of the Problem

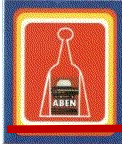
The use of artificial intelligence in educational environments requires special skills from lecturers. Artificial intelligence features offer lecturers and other educators' opportunities to assess varieties of teaching methods, materials and the curriculum at large. Features in artificial intelligence assist lecturers and tutors to prepare and conduct quizzes and tests easily and practically. Lecturers only need to choose the type of subject, level, number of questions, level of difficulty, and several other options. After that, the teacher only needs to share the quiz link with the students to do it directly online. This feature allows lecturers to create quizzes and tests easily and practically. There are special skills needed for lecturers to be able to use these features these special skills include critical skills, data analysis, digital skills, advanced cognition, decision-making, and continuous learning skills, analytical skills and soft skills and traditional hard skills of teaching.

Objectives of the study

1. Influence of skill acquisition training and retraining using Chatbots for enhanced performance by lecturers in public universities in Cross River State.
2. Influence of skill acquisition training and retraining using Automatic Assessment for enhanced performance by lecturers in public universities in Cross River State.
3. Influence of AI-based training in academic research and data analysis on the research productivity of lecturers in public universities in Cross River State

Research questions

The following research questions guided the study:



1. What is the influence of skill acquisition training and retraining using Chatbots for enhanced performance by lecturers in public universities in Cross River State?
2. What is the influence of skill acquisition training and retraining using Automatic Assessment for enhanced performance by lecturers in public universities in Cross River State?
3. What is the influence of AI-based training in academic research and data analysis on the research productivity of lecturers in public universities in Cross River State?

Null hypotheses

The following hypotheses were tested at 0.05 levels of significance.

1. There is no significant influence of skill acquisition training and retraining using Chatbots for enhanced performance by lecturers in public universities in Cross River State.
2. There is no significant influence of skill acquisition training and retraining using automatic assessment for enhanced performance by lecturers in public universities in Cross River State.
3. AI-based training in academic research and data analysis has no significant influence on the research productivity of lecturers in public universities in Cross River State.

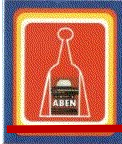
Research Method

The research design adopted for this study was descriptive survey research design. According to Isangedighi (2012), survey design is used to find out what situations, events, attitudes, or opinions are occurring in a population. Reports from other researchers suggest that survey research design measures what a person thinks (attitude and belief), what a person likes and dislikes (values and preferences) and to extract information from a target population using observation, questionnaire or interview and subjecting the data to statistical analysis to draw conclusion. The survey design is suitable for the study as this study aimed at finding out the opinions of lecturers in public universities in Cross River State on how training and retraining contributes to their artificial intelligence skill acquisition for enhanced performance which is in accordance with the view of Isangedighi (2012). The population of the study is made up of 42 lecturers from the department of Vocational education in University of Calabar and 29 lecturers from the department of vocational and technical education, University of Cross River State, giving a total population of 71 lecturers. These categories of persons were chosen for the study because it was considered suitable, and that the information needed for this study is embedded therein. Sampling technique adopted was the census technique. This technique allows the researcher to study the entire population since the number is manageable. Skill Acquisition Training and Retraining Using Artificial Intelligence for Enhanced Performance Questionnaire (ASTRAIEPQ) was used to collect data for the study. The ASTRAIEPQ is a 30-item questionnaire having 10 items per each variable. It was measured on a four-point rating scale of strongly agree (SA), Agree (A), Strongly Disagree (SD), and Disagree (D). These responses were scored 4, 3, 2, and 1 respectively for the items. Data collected from this instrument was analysed using simple linear regression.

Results and discussion

The data presentation and analysis were based on the research questions and hypotheses formulated for the study. The presentation was data analysis, interpretations, followed by the discussion of the findings.

Hypothesis one: There is no significant influence of skill acquisition training and retraining using Chatbots for enhanced performance by lecturers in public universities in Cross River State.



To provide answers to this hypothesis, simple linear regression was used with skill acquisition training and retraining using Chatbots as the independent variable, while enhanced performance in Nigeria universities in Cross River State was the dependent. The result is presented in Table 1.

TABLE 1: Simple Linear Regression Analysis of the influence of skill acquisition training and retraining using Chatbots for enhanced performance by lecturers in public universities in Cross River State.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.538 ^a	.510	.509	1.546	
Source of variation	SS	Df	MS	F-ratio	Sig
Regression	447.871	1	447.871	57.508*	.000
Residual	537.350	69	7.788		
Total	985.221	70			

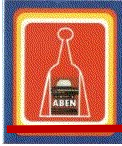
$\alpha = 0.05$, S = Significant

Table 1 shows the correlation of the influence of skill acquisition training and retraining using Chatbot for enhanced performance by lecturers obtained was .538. This means that, as skill acquisition training and retraining using Chabot improves, pperformance of lecturers would also improve. From the correlation coefficient, an R Square of .510 was obtained, this means that about 51% of the total variation in performance of lecturers accounted for by the use ofskill acquisition training and retraining using Chabot. Result shows that an F-ratio of 57.508 with associated or exact probability value of 0.00 was obtained. This exact probability value of 0.00 was less than 0.05 level of significance. Subsequently the null hypothesis which states there is no significant influence of skill acquisition training and retraining using Chabot for enhanced performance by lecturers in public universities in Cross River State was rejected. This implies that,there is significant influence of skill acquisition training and retraining using Chabot for enhanced performance by lecturers in public universities in Cross River State.

Hypothesis two: There is no significant influence of skill acquisition training and retraining using Automatic Assessment on enhanced performanceby lecturers in public universities in Cross River State

To provide answers to this hypothesis, simple linear regression was used with skill acquisition training and retraining using Automatic Assessment as the independent variable, while enhanced performance by lecturers was the dependent. The result is presented in Table 2.

Table 2 shows the correlation of the influence of skill acquisition training and retraining using Automatic Assessment for enhanced performance by lecturers in public universities in Cross River State obtained was .635. This means that as skill acquisition training and retraining using Automatic Assessment improves, performance of lecturers would by enhanced also. From the correlation coefficient, an R Square of .633 was obtained, this means that about 63.30% of the total variation is accounted for by skill acquisition training and retraining using Automatic Assessment improves. Result shows that an F-ratio of 54.558 with associated or exact probability value of 0.00 was obtained. This exact probability value of 0.00 was less than 0.05 level of significance. The null hypothesis which stated that there is no significant influence of skill



acquisition training and retraining using Automatic Assessment on enhanced performance by lecturers in public universities in Cross River State was therefore rejected. Inference drawn is that there is significant influence of skill acquisition training and retraining using Automatic Assessment on enhanced performance by lecturers in public universities in Cross River State.

TABLE 2: Simple Linear Regression Analysis of the influence of skill acquisition training and retraining using Automatic Assessment on enhanced performance by lecturers in public universities in Cross River State

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.635 ^a	.633	.632	1.421

Source of variation	SS	Df	MS	F-ratio	Sig.
Regression	435.044	1	435.044	54.558*	.000
Residual	550.177	69	7.974		
Total	985.221	70			

$\alpha = 0.05$, S = Significant

Hypothesis three: AI-based training in academic research and data analysis has no significant influence on the research productivity of lecturers in public universities in Cross River State.

To provide answers to this hypothesis, simple linear regression was used with skill acquisition training and retraining needs using AI-based training in academic research and data analysis as the independent variable, while enhanced performance of lecturers in public universities in Cross River State was the dependent. The result is presented in Table 3.

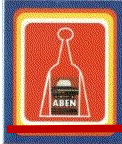
TABLE 3: Simple Linear Regression Analysis of the influence of AI-based training in academic research and data analysis on the research productivity of lecturers in public universities in Cross River State.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.589 ^a	.579	.578	1.339

Source of variation	SS	Df	MS	F-ratio	Sig.
Regression	410.976	1	410.976	49.384*	.000
Residual	574.245	69	8.322		
Total	985.221	70			

$\alpha = 0.05$, S = Significant

Table 3 shows the correlation of the influence of AI-based training in academic research and data analysis on the research productivity of lecturers in public universities in Cross River State obtained was .589. This means that as skill acquisition training and retraining needs using AI-based training in academic research and data analysis improves, performance of lecturers would be enhanced. From the correlation coefficient, an R Square of .579 was obtained, this



means that about 57.90% of the total variation in performance of lecturers accounted for by as skill acquisition training and retraining needs on AI-based training in academic research and data analysis. Result shows that an F-ratio of 49.384 with associated or exact probability value of 0.00 was obtained. This exact probability value of 0.00 was less than 0.05 level of significance. Consequently, the null hypothesis which states There is no significant influence of skill acquisition training and retraining needs on AI-based training in academic research and data analysis for enhanced performance by lecturers in Nigeria universities in Cross River State was rejected; this implies that AI-based training in academic research and data analysis has significant influence on the research productivity of lecturers in public universities in Cross River State..

Discussion

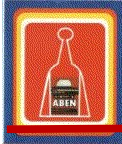
The finding revealed that there is significant influence of skill acquisition training and retraining using Chatbots for enhanced performance by lecturers in public universities in Cross River State. This finding corresponded with Yang and Evans (2019) who state AI chatbots have been found to assist in many educational endeavours. As a result, this technology provides educators with additional time to dedicate to tasks that necessitate human involvement, such as offering mentorship and assistance to students. Another important AI tool that can enhance lecturers' performance is virtual monitoring. The finding was also supported by Sung (2020), who assessed AI English-language chatbots and posits that they are anticipated to significantly contribute to achieving speaking and listening proficiency benchmarks. Furthermore, AI chatbots support educators and administrators in their day-to-day responsibilities, particularly evaluating assignments, monitoring student advancement, and offering administrative assistance. Also, in line with this finding is in line with Atlas (2023), who asserted that chatbots provide teachers a unique opportunity to improve the educational process and connect with students in new ways by providing individual feedback and assistance, allowing teachers to focus on other tasks.

The finding of hypothesis two shown that there is significant influence of skill acquisition training and retraining using Automatic Assessment on enhanced performance by lecturers in public universities in Cross River State. This finding is in agreement with the assertions of Fitria (2021) automatic assessment is easier for lecturers and tutors to prepare and conduct quizzes and tests easily and practically. And that features in automatic assessment allows lecturers to create quizzes and tests easily and practically. The finding is also supported by Bin and Mandal (2019) who stated that automation of these processes give teachers more time to monitor student progress and focus on improving teaching techniques.

The finding of hypothesis three revealed that AI-based training in academic research and data analysis has no significant influence on the research productivity of lecturers in public universities in Cross River State. This finding is in consonance with Ramasamy et al. (2025) who found that AI prompts improved uptake of GPT-4 suggestions in data science tasks, especially descriptive ones, though the sample's expertise limits generalizability. Also with Baillifard et al. (2023) who found that GPT-3 tutoring raised neuroscience student scores by 15 points, with mastery predictions aligning well with outcomes, though cohort assignment wasn't randomized. Zheldibayeva (2025) linked AI familiarity to feedback receptiveness among Kazakhstani postgraduates, but human reviewers remained essential. Gabriel et al. (2024) confirmed GPT-3.5 could generate accurate analysis code, yet user skill and clear prompts were key to avoiding errors, with limitations in scope and interpretability noted.

Conclusion

Assessment of skill acquisition training and retraining is very essential as it helps in identifying the skills gap among lecturers and to proffer solution to it. It is upon this premise that



this study seeks to examine the influence of skill acquisition training and retraining in the used of artificial intelligence for enhanced performance by lecturers in Nigerian universities in Cross River State. From the finding, it is evident that lecturers in public universities in Cross River State have failed to fully integrate Artificial Intelligence in discharge of the responsibility as academia. This further buttress that As Nigerian universities in Cross River and other tertiary institutions in Nigeria is still faced with the traditional approach in rendering academic services as well as delivery of learning contents in a conventional face-to-face setting.

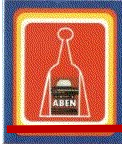
Recommendation

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

1. Lecturers should increase the use of Chatbots in carrying out statutory duties of teaching and assessing students to increase their skill acquisition level for enhance performance.
2. For increase mentorship in the university community, educator should employ the use of virtue mentorship to allow students to access mentorship service at all round the clock.
3. Lecturers should increase proficiency in the use automatic assessment to administer quizzes and tests to reduce paper assessment and increase digital skills in students and themselves.

References

- Adeogun, A. A. (2013). Training and experience as predictors of teachers' productivity in secondary schools in Nigeria. *International Journal of Educational Management*, 4, 38-49.
- Afonughe, E., Onah, E. N., Uzoma, A. C., Andor, S. E., &Orisakwe, C. U. (2021). Integration of artificial intelligence tool (AI-chatbot) into teaching and learning: A panacea for improving universities' educational and administrative duties in South-South, Nigeria. *Journal of Computer Science & Systems Biology*, 4(6), 1-6.
- Aina, M. A., Gbenga-Epebinu, M. A., Olofinbiyi, R. O., Ogidan, O. C., &Ayedun, T. O. (2023). Perception and acceptance of medical chatbot among undergraduates in Ekiti State University, Nigeria. *British Journal of Education*, 11(11), 1-14.
- Aiyedun, T. G. (2020). Effect of animation teaching strategy on secondary school students' achievement, retention, and interest in climate change in Lokoja, Kogi State. *International Journal of Trend in Scientific Research and Development*, 4(3), 944-949.
- Alabi, C. O. (2014). Teacher personnel management as determinants of teacher productivity in Oyo Metropolis senior secondary schools. *Pakistan Journal of Social Science*, 8(1), 39-42.
- Atlas, S. (2023). *Chatbot prompting: A guide for students, educators, and AI-augmented workforce*. University of Rhode Island.
- Bailliffard, L., Moser, C., & Schmid, U. (2023). *Enhancing neuroscience learning through GPT-3-powered microlearning: A quasi-experimental study*. UniDistance Suisse.
- Bin, Y., & Mandal, D. (2019). English teaching practice based on artificial intelligence technology. *Journal of Intelligent & Fuzzy Systems*, 37, 17.
- Binns, R. (2018). Fairness in machine learning: Lessons from political philosophy. *Proceedings of the 2018 Conference on Fairness, Accountability, and Transparency*, 149-159. <https://doi.org/10.1145/3287560.3287598>
- Enang, C. E., &Okute, A. L. (2019). Leveraging new technologies for skill acquisition of business education in tertiary institutions in Nigeria for the e-world. *Nigerian Journal of Business Education*, 6(1), 327-331.
- Ezeani, N. E., & Oladele, R. (2013). Implications of training and development programmes on accountants' productivity in selected business organizations in Onitsha, Anambra State, Nigeria. *International Journal of Asian Social Science*, 3(1), 266-281.
- Fitria, T. N. (2021). Artificial intelligence (AI) in education: Using AI tools for teaching and learning process. *Proceedings of Seminar Nasional & Call for Papers*, 134-147.
- Gabriel, T., Lin, Y., & Koenig, J. (2024). *Replicating quantitative data analysis using GPT-3.5: Opportunities and limitations in social science research*. *Journal of Computational Social Science*.



- Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign.
- Igbo, J. N., Eze, J. U., Eskay, M., Onu, V. C., & Omeje, J. (2012). Influence of retraining programme on the self-esteem of primary school teachers in Ebonyi State, Nigeria. *US-China Education Review*, 12.
- Isangedighi, A. J. (2012). *Essentials of research and statistics in education and social sciences*. Eti-nwa Associates.
- Jordan, M. I., & Mitchell, T. M. (2015). Machine learning: Trends, perspectives, and prospects. *Science*, 349(6245), 255-260.
<https://doi.org/10.1126/science.aaa8415>ejournal.upsi.edu.my+1researchgate.net+1pubmed.ncbi.nlm.nih.gov+9science.org+9bibsonomy.org+9
- Mshelia, A. G. (2019). Assessment of employable skills acquisition for self-reliance in business studies curriculum among government junior secondary schools in Biu, Borno State. *Nigerian Journal of Business Education*, 6(2), 260-273.
- Nassazi, A. (2013). *Effects of training on employee performance: Evidence from Uganda* [Master's thesis, University of Applied Sciences].
- Oguejiofor, C. S., & Ezenwanne, C. R. (2020). Training and retraining programme as a strategy for improving the quality of business education lecturers in public tertiary institutions in Anambra State. *Global Journal of Education, Humanities and Management Sciences*, 2(1), 144-153.
- Ogunode, N. J., & Olowonefa, J. A. (2023). AI education in Nigerian schools. *International Journal of Human Computing Studies*, 5(10), 47-56.
- Ogunode, N. J., Agbade, O. P., & Bassey, U. O. (2023). Barriers to effective usage of artificial intelligence in tertiary institutions in north-central Nigeria. *Web of Semantics: Journal of Interdisciplinary Science*, 1(1), 38-43.
- Okonkwo, C. W., & Ade-Ibijola, A. (2021). Chatbots applications in education: A systematic review. *Computers and Education: Artificial Intelligence*, 2, 100033.
<https://doi.org/10.1016/j.caeai.2021.100033>
- Okute, A. L. (2013). Ensuring quality training and effective selling skills for sales personnel in an ICT-based economy. *Association of Business Education of Nigeria Book of Reading*, 3(1), 27-32.
- Ombugus, D. A., & Umaru, R. I. (2017). Entrepreneurship skill acquisition for wealth creation of youths in Agidi Development Area, Nasarawa State. *International Journal of Academia*, 4(1).
- Ondáš, S., Pleva, M., & Hládek, D. (2019, November). How chatbots can be involved in the education process. In *2019 17th International Conference on Emerging eLearning Technologies and Applications (ICETA)* (pp. 575-580). IEEE.
- Pérez, J. Q., Daradoumis, T., & Puig, J. M. M. (2020). Rediscovering the use of chatbots in education: A systematic literature review. *Computer Applications in Engineering Education*, 28(6), 1549-1565.
- Ramasamy, N., Velasquez, J., & Tanaka, M. (2025). *AI-augmented decision-making in Jupyter notebooks: Experimental insights on user adoption*. *Journal of Data Science and AI Ethics*, 8(1), 22-41.
- Sandu, N., & Gide, E. (2019, September). Adoption of AI-chatbots to enhance student learning experience in higher education in India. In *2019 18th International Conference on Information Technology Based Higher Education and Training*, 1-5.
- Shmueli, G., Bruce, P. C., Gedeck, P., & Patel, N. R. (2017). *Data mining for business analytics: Concepts, techniques, and applications* in R. Wiley.
- Sung, M. C. (2020). Pre-service primary English teachers' AI chatbots. *Language Research*, 56(1), 97-115.
<http://dx.doi.org/10.30961/lr.2020.56.1.97>
- Yang, S., & Evans, C. (2019, November). Opportunities and challenges in using AI chatbots in higher education. In *Proceedings of the 2019 3rd International Conference on Education and E-Learning*, 79-83.
- Zheldibayeva, D. (2025). *AI-assisted academic writing: A survey of postgraduate researchers using CGScholar in Kazakhstan*. *International Journal of Academic Writing and Technology*, 12(2), 87-103.