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Original Research

Artificial Intelligence Tools and Teachers' Job Productivity in Public Secondary Schools in Obudu, Nigeria

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ABSTRACT

The study investigated the application of Artificial Intelligence (AI) tools and teachers' job productivity in public secondary schools in Obudu Local Government Area of Cross River State, Nigeria. Two research questions and two hypotheses guided the study. The correlational research design was used. The study population consisted of 131 teachers across 91 public secondary schools in the study area. Using a census sampling technique, all teachers participated in the study. Data were collected using a structured questionnaire titled Application of Artificial Intelligence Tools and Teachers' Job Productivity Questionnaire (AAITTJPQ), which was organized into two clusters. Responses were rated on a 4-point Likert scale: Strongly Agree, Agree, Disagree, and Strongly Disagree. The instrument underwent face and content validation by experts in Educational Management and Measurement and Evaluation at the University of Calabar. Reliability was established using the Cronbach's Alpha method, which yielded coefficients ranging from 0.81 to 0.83, indicating a high level of internal consistency. Data were analyzed using the Pearson Product-Moment Correlation (PPMC) at the 0.05 level of significance. The findings revealed a statistically significant relationship between the use of ChatGPT and Canva digital media tools and teachers' job productivity. The study concluded that the application of AI tools significantly enhances teachers' job productivity in public secondary schools in Obudu Local Government Area. It was recommended that schools should establish clear guidelines and support systems that promote responsible and effective AI utilization. This should include the provision of adequate digital infrastructure, encouragement of innovative instructional practices, and continuous monitoring of how AI tools contribute to improved teacher productivity and student learning outcomes.

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1. INTRODUCTION

Education is universally recognized as a powerful catalyst for individual empowerment and societal transformation. In Nigeria, the educational system is organized into three major tiers—primary, secondary, and tertiary education—each administered by government agencies or private proprietors. Within this structure,

secondary education occupies a strategic position and serves as the focus of this study. According to the Federal Government of Nigeria (FGN, 2013), secondary education is divided into two levels: Junior Secondary School (JSS) and Senior Secondary School (SSS). The JSS phase spans three years and provides learners with essential foundational knowledge and entrepreneurial skills, culminating in the Basic Education Certificate Examination (BECE). Likewise, the SSS phase lasts for three years, preparing students for the West African Senior School Certificate Examination (WASSCE) and equipping them for higher education or vocational pathways.

As the critical bridge between primary and tertiary education, the secondary school system is designed to deliver meaningful learning experiences, promote moral values, and develop essential life skills that foster responsible citizenship and national development (Essien et al., 2025; Obona et al., 2024; Difoni et al., 2024; Ikwen et al., 2025; Uzu et al., 2025). The realization of these objectives depends significantly on teachers, whose productivity shapes students' academic achievement, behaviour, and future aspirations. Teachers' job productivity is therefore indispensable to the effective functioning of the school system and the attainment of national educational goals.

Teachers' job productivity refers to the effectiveness and efficiency with which teachers perform their professional responsibilities. In education, productivity reflects the extent to which teachers transform inputs—such as instructional resources, curriculum materials, and teaching time—into positive learning outcomes (Ayeni, 2022; Ikana et al., 2025). It encompasses teachers' Obudulity to plan lessons, deliver instruction, manage classrooms, support student development, and achieve set educational goals (Tiongson & Gempes, 2018). Productivity also requires teachers to adapt instructional materials, revise lesson plans, and implement individualized education programmes (IEPs) to cater to diverse learners (Akpan et al., 2025). A productive teacher effectively utilizes available resources to accomplish tasks within required timelines and produce meaningful results. In this study, teacher productivity is examined through four major dimensions: instructional planning, instructional service delivery, classroom management, and students' academic performance. Instructional planning involves preparing lesson notes, selecting appropriate teaching strategies, defining clear learning objectives, and aligning lessons with curriculum expectations (Ayeni, 2022; Essien et al., 2025). Instructional delivery focuses on the teacher's Obudulity to communicate concepts clearly, motivate learners, and employ appropriate pedagogical approaches (Oduma, 2016; Madukwe et al., 2024; Obona et al., 2024; Ayang et al., 2025). Classroom management entails maintaining discipline, organizing learning activities, managing time effectively, and fostering a conducive learning atmosphere (Osakwe, 2014; Ayeni, 2022). Student academic performance, the measurable outcome of instructional activities, is assessed through continuous assessments, class tests, examinations, and standardized evaluations such as the WASSCE and NECO-SSCE (Ayeni, 2022; Ikana et al., 2025).

Education is globally regarded as a mechanism for human capital development and national progress (Uzu et al., 2025). Yet, despite its importance, concerns persist regarding low levels of teacher productivity in secondary schools. Scholars have noted recurring challenges related to inadequate instructional planning, ineffective service delivery, poor classroom management practices, weak learner evaluation, and declining student performance (Ayeni, 2022; Difoni et al., 2024; Ikana et al., 2025; Ikwen et al., 2025; Madukwe et al., 2024; Obona et al., 2024). Public secondary schools in Obudu Local Government Area of Cross River State experience similar problems. Many teachers struggle with preparation of lesson plans, effective use of instructional methods, control of classroom activities, and timely assessment of learners. These challenges have contributed to reduced academic performance, poor discipline, and limited achievement of secondary education objectives in the area.

Given these persistent challenges, there is a growing need for innovative strategies that can enhance teachers' job productivity and strengthen the quality of education. One emerging solution is the integration of artificial intelligence (AI) into school systems. AI has the potential to create more efficient, data-driven, and responsive teaching–learning environments. Through intelligent tutoring systems, automated lesson planning tools, digital assessment platforms, and advanced classroom monitoring applications, AI can assist teachers in improving productivity and delivering higher-quality education. As schools increasingly adopt technology-driven practices, examining the role of AI in enhancing teacher productivity becomes both timely and essential.

This study therefore investigates how artificial intelligence (AI) can be applied to enhance teachers' job productivity in public secondary schools in Obudu Local Government Area of Cross River State. Artificial Intelligence, in its broadest sense, refers to technological systems designed to perform tasks that typically require human intelligence. These tasks include visual perception, speech recognition, decision-making, language translation, and complex problem-solving. As defined by Ndalu (2025), AI involves the simulation of human cognitive functions in machines that are capable of thinking, learning, reasoning, and making informed decisions. The roots of AI can be traced back to the 1950s when early researchers began exploring the possibility of creating machines that could replicate aspects of human cognition.

Empirical evidence increasingly demonstrates that AI can transform both administrative efficiency and the teaching–learning process. Chen et al. (2020) argue that AI significantly enhances institutional operations and learning outcomes by introducing intelligent systems capable of automating processes, analyzing data, and supporting instructional delivery. Similarly, Obona et al. (2024) affirm that AI holds substantial potential for school

administration by enriching learning experiences, improving student performance, and simplifying administrative tasks through automated systems. These rapid technological advancements now compel educational managers, teachers, and students to acquire relevant AI competencies to remain effective and competitive within modern educational environments (Amadi & James, 2025). Thus, individuals who fail to understand and apply AI tools risk being left behind in the evolving landscape of education and technology.

AI also has the capacity to automate routine administrative responsibilities within school systems. According to Amadi and James (2025), AI applications support school administrators by modeling complex datasets, generating data-driven predictions, and enhancing future planning processes, thereby reducing waste and operational inefficiencies. In addition to administrative functions, AI systems can manage various non-teaching tasks such as grading assessments, generating assignments, evaluating homework, tracking attendance records, and even coordinating parental communication. These innovations reduce teachers' workload, free up time, and create opportunities for improved instructional quality. In this study, emphasis is placed on AI tools such as ChatGPT and Canva Digital Media and their potential to enhance teacher productivity. These tools can automate repetitive tasks, support lesson planning, generate instructional content, and facilitate more engaging digital learning materials. By minimizing the burden of routine work, AI enables teachers to focus more on meaningful instructional delivery, personalized learner support, and sustained student engagement.

2. EMPIRICAL REVIEW

2.1. ChatGPT tool and teachers' job productivity

ChatGPT is an increasingly popular artificial intelligence tool that supports conversation, task automation, and information generation. In classroom contexts, it functions as an intelligent, fast-response search assistant capable of providing concise, context-specific explanations. Unlike traditional search engines that often present extensive and sometimes overwhelming information, ChatGPT synthesizes content into brief, relevant responses within seconds. This allows teachers to quickly retrieve accurate information, reduce time spent on manual searches, and allocate more energy to lesson delivery and student interaction. As noted by Amadi and James (2025), ChatGPT—developed by OpenAI—is a sophisticated language model designed to generate human-like responses, making it a transformative tool for teaching and learning. It offers new opportunities for enhancing instructional quality, personalizing learning experiences, and improving the efficiency of classroom practices. The effectiveness of secondary education, however, largely depends on the attitude of teachers who implement the curriculum and guide students (Egbai et al., 2025). Miller, as cited in Amadi and James (2025), emphasizes that educators must continually explore emerging AI tools such as ChatGPT to remain adaptable and informed in a rapidly evolving digital landscape.

Empirical research increasingly highlights ChatGPT's potential to support teacher productivity. Hashem et al. (2024), in a classroom-based study, investigated ChatGPT's role as a virtual teaching assistant, particularly its capacity to reduce teachers' workload and prevent burnout. Using task-based testing in English, mathematics, and science lesson planning for secondary schools, the study compared ChatGPT-generated lesson plans with the 5E instructional model. It also incorporated qualitative feedback on time savings and perceived usefulness. The findings revealed that ChatGPT substantially decreased the time required for lesson preparation and content development, provided that prompts were clearly structured. The researchers concluded that generative AI can enhance teachers' planning efficiency, although its adoption demands careful guidance and structured implementation.

Similarly, Espartinez (2024) employed Q-methodology to explore how teachers and students in higher education perceive ChatGPT, with particular focus on its productivity implications. The study identified several perception clusters, including a group labeled "Convenience-Oriented Enthusiasts," who valued ChatGPT for its efficiency in drafting, information retrieval, and administrative support—functions directly linked to time savings. Other groups expressed ethical concerns and advocated cautious pedagogical use, which influenced the extent to which productivity benefits were realized. The study suggests that significant productivity gains occur when teachers adopt an efficiency-driven mindset and operate within institutions that support ethical and effective AI use.

In another contribution, Albadarin et al. (2024) conducted a systematic review of 14 empirical studies on ChatGPT in education using the PRISMA methodology. Their review demonstrated consistent evidence that teachers apply ChatGPT for lesson planning, quiz generation, formative assessments, and summarizing instructional materials. These applications reduced repetitive preparation tasks, thereby enhancing perceived productivity. However, the review also highlighted that the value derived from ChatGPT depends heavily on teachers' Obudulity to craft effective prompts, contextualize AI-generated outputs, and work within institutional systems that encourage responsible AI usage. Further insights were provided by ElSayary (2024), who carried out a mixed-methods investigation into teachers' perceptions of ChatGPT as a support tool for teaching and learning. Drawing on survey data and follow-up interviews with in-service teachers, the study found that ChatGPT contributed positively to productivity by enabling faster generation of lesson ideas, quicker development of assessments, and more efficient provision of feedback. The findings emphasize that the extent to which ChatGPT enhances job productivity is shaped by teachers' digital competence, confidence in the tool's accuracy, and the presence of supportive policies and professional development opportunities.

2.2. Canva digital media tool and teachers' job productivity

Canva digital media has become an essential tool for improving teachers' job productivity, particularly in the creation and presentation of instructional materials. Its intuitive design, extensive template library, and collaborative features allow teachers to develop visually appealing and professional teaching resources quickly and efficiently. By simplifying the design process, Canva reduces the time and effort required for lesson preparation, thereby lowering workload pressure and enhancing instructional effectiveness. Beyond serving as a creative platform, Canva functions as a productivity tool that promotes innovation, supports efficient teaching practices, and strengthens overall teacher performance. Practical evidence from institutional use—such as the Berkeley County Schools experience—shows significant gains in productivity, with reports indicating that the use of Canva has saved thousands of work hours annually through streamlined content development processes (Canva, 2024).

Empirical research further demonstrates that teachers who effectively utilize Canva are able to produce more engaging learning materials that capture students' attention while saving valuable instructional time. For example, Novitasari and Anisah (2024) conducted a qualitative study among kindergarten teachers in Singgahan District to examine the influence of teachers' competence in Canva on learning engagement. Their findings revealed that teachers proficient in Canva created more appealing and interactive learning media, resulting in quicker preparation time and improved student participation. This indicates that higher competence in Canva contributes to better instructional efficiency.

Similarly, Nurmilah et al. (2023) explored the use of Canva in teaching creative writing in an Islamic Senior High School in Ciamis, Indonesia. Using interviews and classroom observations, the researchers identified a seven-step process through which a teacher integrated Canva into writing instruction. The study highlighted that Canva enhanced student interest and improved the quality of writing outputs, while also reducing the time needed to prepare writing tasks and instructional materials. These findings underscore that Canva can streamline planning and content creation in secondary school settings, thereby improving teachers' productivity and instructional delivery. In another study, Sukawati et al. (2024) investigated English teachers' experiences using Canva via the Belajar.id educational platform. Through interviews and observations involving six teachers, the study found that teachers appreciated Canva's ease of use and its capacity to generate professional-grade teaching materials, which in turn enhanced their efficiency in preparing lessons.

The reviewed literature shows that extensive studies have explored the use of Artificial Intelligence tools—particularly ChatGPT and Canva digital media—in improving teaching and learning processes. However, most of these studies have emerged from foreign contexts with socio-cultural, infrastructural, and institutional conditions that differ significantly from those in Nigeria. Consequently, the applicability and relevance of these findings to the Nigerian school system remain limited. Also, there were methodological gaps in the reviewed studies. For example, most of the studies reviewed adopted quasi-experimental, ex post facto, and descriptive survey design, which differ from the correlational research designs this study utilized. Most importantly, there have been no studies found in Obudu LGA, that specifically examining the relationship between ChatGPT and Canva and teacher productivity. The present study addresses this gaps in Obudu Local Government Area of Cross River State, Nigeria. This localized investigation is essential for generating context-specific evidence that can guide policy formulation, teacher development, and effective integration of AI tools in Nigerian secondary schools.

2.3. Statement of the problem

Teachers play a central role in the school system, and their level of job productivity is fundamental to sustaining quality secondary education and preparing students for higher learning and meaningful participation in society. However, in many public secondary schools within Obudu Local Government Area of Cross River State, concerns from parents, guardians, and students suggest that teachers may not be performing at the expected level. Students have reported that some teachers come to class inadequately prepared, rely on outdated instructional methods, or fail to provide timely and constructive feedback on assignments. Parents similarly express dissatisfaction over their children's slow academic progress, while many students complain about insufficient motivation, poor instructional support, and inadequate learning engagement. These issues collectively contribute to poor student performance in internal examinations and produce graduates who are not adequately equipped for future academic or societal demands.

Despite various government interventions—including regular payment of salaries, provision of instructional materials, and periodic supervisory visits by education officials—the desired improvement in teacher productivity has remained elusive. This persistent challenge underscores the need for innovative and technology-driven strategies. Artificial Intelligence tools have emerged globally as promising resources for enhancing instructional effectiveness, streamlining teachers' tasks, and improving overall productivity. However, their application and influence within the context of public secondary schools in Obudu Local Government Area remain underexplored. Consequently, the central problem of this study is the unclear relationship between the use of Artificial Intelligence tools and teachers'

job productivity in public secondary schools in Obudu Local Government Area, Cross River State. Addressing this gap forms the basis for the present investigation.

2.4. Purpose of the study

The purpose of the study was to examine the application of Artificial Intelligence Tools and teachers' job productivity in public secondary schools in Obudu Local Government Area, Cross River State, Nigeria. Specifically, this study seeks to:

1. Determine the extent to which ChatGPT Tool enhance teachers' job productivity.
2. Ascertain the extent to which Canva Digital Media Tool enhance teachers' job productivity.

2.5. Research question

1. What is the relationship between ChatGPT Tool and teachers' job productivity?
2. How does Canva Digital Media Tool relate to teachers' job productivity?

2.6. Research hypotheses

1. There is no significant relationship between the use of ChatGPT Tool and teachers' job productivity.
2. There is no significant relationship between the use of Canva Digital Media Tool and teachers' job productivity.

3. METHODOLOGY

The research area is Obudu Local Government Area, Cross River State, Nigeria. The design adopted for the study was the correlational research design. The correlational research design was used because it enables the researcher to examine the relationship between variables without manipulating them. In this study, it was appropriate for determining the extent to which the use of artificial intelligence tools is related to teachers' job productivity, as the variables already exist in their natural setting. This design allows for the identification of the strength and direction of the relationship between the variables without implying causation. The study population comprised 131 teachers from 91 public secondary schools in the study area. Using census sampling, all the secondary schools and teachers were used for the study. The study population comprised a defined and relevant subgroup rather than the entire teacher workforce in each school. Although each school typically has a larger number of teachers, the study specifically targeted those who met predetermined inclusion criteria—such as exposure to or involvement in the phenomenon under investigation (e.g., digital or AI-related practices). Consequently, only one or a few eligible teachers were identified per school, leading to the observed distribution. The census approach was therefore applied to all teachers who qualified within this category across the 91 schools, ensuring comprehensive coverage of the relevant population, while acknowledging that generalization is limited to this specific group. To gather data, two structured instruments titled "Application of Artificial Intelligence Tools and Teachers' Job Productivity Questionnaire (AAITTJPQ) was used. The instrument was organized into two clusters. The items were structured on a 4-point rating scale of Strongly Agre (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) to capture respondents' perceptions. The questionnaire was face and content validated by three expert in Educational Management and Measurement and Evaluation, all from University of Calabar, Cross River State. The instrument's reliObudulity was determined using Cronbach Alpha statistics with the average index of 0.81 and 0.83, implying that the instruments were reliable. Ethical considerations were strictly observed in the conduct of this study. Informed consent was obtained from all participants before data collection. The respondents were adequately informed about the purpose of the study, and participation was entirely voluntary. They were assured of the confidentiality and anonymity of their responses, and that the information provided would be used solely for academic purposes. Participants were also informed of their right to withdraw from the study at any point without any negative consequences. These measures were taken to ensure adherence to standard ethical practices in educational research. All the 131 copies of questionnaire administered by the researchers with the help of 5 trained and adequately compensated research assistants, were retrieved and used for the study.

Before conducting the Pearson Product Moment Correlation (PPMC) analysis, the underlying assumptions were tested to ensure the validity of the results. The assumptions of normality and linearity were examined using both graphical and statistical techniques. Normality was assessed through histogram and Normal Q-Q plots, as well as the Shapiro–Wilk test, which indicated that the data were approximately normally distributed ($p > 0.05$). Linearity was evaluated using scatterplots, which showed a clear linear relationship between artificial intelligence tools and teachers' job productivity. Based on these results, all required assumptions for the use of PPMC were satisfied, and the data were considered suitable for further inferential statistical analysis. Data analysis was carried out using inferential statistics. To answer the research questions and test the null hypotheses, the Pearson Product Moment Correlation (PPMC) statistic was employed at a 0.05 level of significance.

4. RESULTS

4.1. Research questions one

What is the relationship between ChatGPT Tool and teachers' job productivity? This question was answered with Pearson Product Moment Correlation (r) and the answer is in Table 1.

Table 1. Pearson Product Moment Correlation on the relationship between ChatGPT Tool and teachers' job productivity (N=131)

Variables	$\bar{X}$	S.D	R	Decision
ChatGPT Tool	18.64	3.29		
			.76*	Positive
Teachers' job productivity	19.57	3.32		Relationship

*Significant at p<.05 df=129

Table 1 presented the mean and standard deviations which indicated the response rate of the respondents on the relationship between ChatGPT Tool and teachers' job productivity. The standard deviations obtained in all the sub-scales were moderate. This indicated that the respondents were consistent in the pattern of their responses to the items of the research instrument. Furthermore, the correlation coefficients of .76 between ChatGPT Tool and teachers' job productivity implied that there was a positive statistical relationship between ChatGPT Tool and teachers' job productivity in public secondary schools in Obudu Local Government Area, Cross River State.

4.2. Research questions two

What is the relationship between Canva Digital Media Tool and teachers' job productivity? This question was answered with Pearson Product Moment Correlation (r) and the answer is in Table 2.

Table 2. Pearson Product Moment Correlation on the relationship between Canva Digital Media Tool and teachers' job productivity (N=131)

Variables	$\bar{X}$	S.D	R	Decision
Canva Digital Media Tool	19.44	3. 05		
			.69*	High Positive
Teachers' job productivity	19.57	3.32		Relationship

*Significant at p<.05 df=129

Table 2 presented the mean and standard deviations which indicated the response rate of the respondents on the relationship between Canva Digital Media Tool and teachers' job productivity. The standard deviations obtained in all the sub-scales were moderate. This indicated that the respondents were consistent in the pattern of their responses to the items of the research instrument. Furthermore, the correlation coefficients of .69 between Canva Digital Media Tool and teachers' job productivity implied that there was a positive statistical relationship between Canva Digital Media Tool and teachers' job productivity in public secondary schools in Obudu Local Government Area, Cross River State.

4.3. Hypothesis one

There is no significant relationship between the use of ChatGPT tool and teachers' job productivity in public secondary schools in Obudu Local Government Area, Cross River State. The two variables in this hypothesis are use of ChatGPT Tool and teachers' job productivity. Pearson Product Moment Correlation was used to test the hypothesis and the result of the analysis is presented in Table 3. Table 3 showed the correlation coefficient between use of ChatGPT Tool and teachers' job productivity. The correlation coefficient is statistically significant for teachers' job productivity (r = .76, p<.05). Since p(.000) is less than p(.05), hypothesis one is rejected. The result of the analysis implied that there is a statistically positive significant relationship between the use of ChatGPT Tool and teachers' job productivity in public secondary schools in Obudu Local Government Area, Cross River State.

Table 3. Summary of correlation between the use of ChatGPT Tool and teachers' job productivity in public secondary schools in Obudu Local Government Area, Cross River State. (N=131)

Variables	$\bar{X}$	S.D	R	Sig.	Decision
Use of ChatGPT Tool	18.64	3.29 3.22			
Teachers' job productivity	19.57		.76*	.000	Rejected

*Significant at p<.05 df=129

4.4. Hypothesis two

There is no significant relationship between the use of Canva Digital Media Tool and teachers' job productivity in public secondary schools in Obudu Local Government Area, Cross River State. The two variables in this hypothesis are use of Canva Digital Media Tool and teachers' job productivity. Pearson Product Moment Correlation was used to test the hypothesis and the result of the analysis is presented in Table 4. Table 4 showed the

correlation coefficient between use of the Canva Digital Media Tool and teachers' job productivity. The correlation coefficient is statistically significant for teachers' job productivity (r = .69, p<.05). Since p(.000) is less than p(.05), hypothesis two is rejected. The result of the analysis implied that there is a statistically positive significant relationship between the use of Canva Digital Media Tool and teachers' job productivity in public secondary schools in Obudu Local Government Area, Cross River State.

Table 4. Summary of correlation between the use of Canva Digital Media Tool and teachers' job productivity in public secondary schools in Obudu Local Government Area, Cross River State. (N=131)

Variables	$\bar{X}$	S.D	R	Sig.	Decision
Use of Canva Digital Media Tool	19.44	3.05			
Teachers' job productivity			.69*	.000	Rejected
	19.57	3.22			

*Significant at p<.05 df=129

5. DISCUSSION OF FINDINGS

The result of hypothesis one showed a statistically significant relationship between the utilization of the ChatGPT tool and teachers' job productivity. This outcome suggests that in the study area (Obudu), ChatGPT functions as an alternative academic support system by providing instant access to relevant information, generating lesson materials, and assisting with assessment development. This reduces the time and effort teachers would otherwise expend sourcing and preparing instructional content manually. Additionally, given the varying levels of digital literacy among teachers in the area, those who are able to effectively utilize ChatGPT are likely to experience greater efficiency in managing multiple instructional responsibilities.

Furthermore, the tool's interactive and easy-to-navigate interface support teachers in handling multiple instructional tasks more efficiently, thereby improving their overall workload management. However, the observed relationship may have been influenced by other variables such as the availability and quality of technological infrastructure. The implication of this finding is that the adoption of AI-based tools such as ChatGPT could substantially enhance teaching effectiveness and advance the broader objectives of secondary education within the study area. Additionally, when teachers use ChatGPT to quickly generate lesson materials, explanations, and assessments, they save time and are able to focus more on delivering well-structured lessons and responding to students' learning needs. This can lead to clearer instruction, more engaging classroom activities, and more timely feedback, which support better student understanding and academic performance.

The outcome of this study is consistent with earlier empirical evidence. Hashem et al. (2024) reported that ChatGPT significantly reduced the time teachers spent on lesson planning and preparing content, particularly when prompts were well structured. Their findings emphasized that generative AI can boost teacher productivity, although proper implementation remains critical. In a similar vein, ElSayary (2024) observed that teachers experienced greater efficiency through the rapid generation of lesson ideas, quicker development of assessment questions, and improved feedback processes. Likewise, Albadarin et al. (2024) found that teachers used ChatGPT for lesson planning, quiz construction, formative assessment, and resource summarization—activities that lowered routine preparation time and strengthened their perception of enhanced productivity.

The result of hypothesis two indicated a statistically significant relationship between the use of Canva Digital Media and teachers' job productivity in public secondary schools in Obudu Local Government Area, Cross River State. This relationship can be better understood within the local context, where teachers often operate under conditions of limited instructional resources, time constraints, and the need to make lessons more engaging with minimal support. In such circumstances, Canva serves as a practical tool that simplifies the creation of instructional materials through its ready-made templates and user-friendly interface. This reduces the burden associated with designing teaching aids from scratch and allows teachers to produce visually engaging content with less effort. Furthermore, in a setting where student engagement can be challenging due to resource limitations, the use of visually appealing materials may enhance students' attention and participation, thereby improving teaching effectiveness. However, the observed relationship may have been influenced by the levels of digital literacy among the teachers.

The implication of this outcome is that integrating Canva Digital Media into instructional practice can significantly enhance teacher effectiveness. Its ability to streamline content creation promotes higher productivity, which ultimately supports improved instructional quality and strengthens the overall teaching–learning process in the study area. This demonstrates that adopting digital media tools such as Canva can play an instrumental role in fostering efficiency and elevating educational standards in secondary schools.

The finding also implies that teacher knowledge of Canva will enable them to design more structured, visually appealing, and well-organized assessment materials such as test items, quizzes, rubrics, and worksheets. This will enhance the clarity and quality of assessment tasks, and make them easier for students to understand and respond to.

The findings of this study are consistent with previous empirical evidence. Sukawati et al. (2024) revealed that teachers valued Canva's user-friendly interface and its capacity to produce professional-quality instructional materials, which they believed enhanced efficiency in lesson design. Similarly, Novitasari and Anisah (2024) found that teachers who were skilled in using Canva created more engaging and visually rich teaching media, resulting in reduced preparation time and increased student engagement. Their study suggests that enhancing teachers' competence in Canva can significantly cut down the time spent on instructional material development and improve overall teaching efficiency. Furthermore, Nurmilah et al. (2023) reported that teachers considered Canva not only effective for boosting students' interest and performance but also helpful in saving time when designing writing tasks and instructional materials. This indicates that the use of Canva can streamline preparation processes, particularly in writing instruction, thereby improving planning and productivity in senior secondary schools

6. LIMITATIONS OF THE STUDY

This study has some limitations that should be considered when interpreting its findings. These include:

1. The study was limited to public secondary schools in Obudu Local Government Area, Cross River State, which may restrict the generalizability of the results to other regions with different educational conditions.
2. The study relied on self-reported data from teachers, which may be subject to response bias, including overestimation or underestimation of actual practices.
3. The cross-sectional design of the study limits the ability to make causal inferences, as the relationships observed reflect associations rather than cause-and-effect connections.

7. CONCLUSION

The study investigated the application of Artificial Intelligence (AI) tools and teachers' job productivity in public secondary schools in Obudu Local Government Area, Cross River State, Nigeria. The findings revealed a statistically significant relationship between the use of ChatGPT Tool, Canva Digital Media Tool, and teachers' job productivity. Based on these results, the study concludes that the effective adoption of AI tools substantially enhances teachers' performance in the study area. These tools streamline lesson preparation, resource development, and instructional delivery, thereby contributing to improved productivity and supporting better teaching and learning outcomes in public secondary schools.

8. RECOMMENDATIONS

The study therefore recommended that:

1. The State Ministry of Education and school administrators should promote the systematic integration of AI tools such as ChatGPT and Canva into classroom instruction. This can be achieved by providing access to these tools, encouraging their use for lesson planning, assessment development, and instructional presentation.
2. School administrators in collaboration with ICT specialists should organize structured capacity-building workshops on a termly basis to equip teachers with practical skills for using AI tools. These workshops should include hands-on training sessions, peer mentoring, and follow-up support. Implementation should be coordinated by school ICT units, while success can be evaluated through indicators such as improvement in lesson preparation time and periodic assessment of teachers' digital competence.
3. Schools, under the supervision of educational authorities, should implement clear guidelines to promote the responsible and effective use of AI tools. This should involve the provision of digital infrastructure, the establishment of school-based AI usage policies, and the appointment of personnel responsible for monitoring implementation. These measures can enhance teachers' productivity and student academic outcomes.

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DECLARATION OF INTEREST

No potential conflict of interest was reported by the authors

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ETHICAL STATEMENT

Not applicable.

AI USE STATEMENT

The authors declare that the generative artificial intelligence (AI) tool [ChatGPT] was used exclusively for language editing and/or grammatical improvement. The use of AI did not influence the scientific content, study design, data analysis, data interpretation, results, or conclusions of the manuscript. Full responsibility for the content remains with the authors.

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