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# Impacts of Artificial Intelligence (AI) Tools on the Teaching and Learning Outcomes of Educational Management Courses in Nigerian Tertiary Institutions

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**Highlights:**

Importance of Artificial Intelligence tools on educational management courses, Educational Planning, School Administration, and Educational Supervision.

Identifies current usage patterns by both lecturers and students with specific learning outcomes associated with these tools.

Recommends collaboration between educational planners and institutions to ensure effective integration of AI tools in the teaching of educational management courses.

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**Abstract**: Artificial Intelligence (AI) tools, such as ChatGPT, Grammarly, Turnitin, and adaptive learning platforms, have emerged as significant innovations in education, developing alongside advances in computer and digital technologies. These tools refer to software applications designed to perform tasks that were traditionally carried out through human effort, such as content generation, language correction, plagiarism detection, and personalized instruction. The integration of these AI tools into the teaching and learning of educational management courses, such as Educational Planning, School Administration, and Educational Supervision, has begun to reshape instructional delivery and assessment practices in Nigerian tertiary institutions. This paper examines the impacts of selected AI tools on the teaching and learning outcomes of educational management courses, with attention to how these tools affect students' understanding, engagement, and academic performance, as well as lecturers' instructional practices. Given the growing presence of these tools in Nigerian classrooms, it becomes necessary for educational planners, lecturers, and policymakers to understand both their benefits and their limitations within the local context. This paper, therefore, examines the impacts of AI tools such as ChatGPT, Grammarly, and Turnitin on the teaching and learning outcomes of educational management courses in Nigerian tertiary institutions. It identifies how these tools are currently used by lecturers and students, the specific outcomes they produce, and the challenges that limit their effective use. The paper concludes by recommending that educational planners and institutions develop clear guidelines and provide adequate infrastructure to support the responsible use of AI tools in teaching educational management courses.

**Keywords: Artificial Intelligence Tools, Teaching and Learning Outcomes, Educational Management Courses**

## Introduction

The rapid advancement of Artificial Intelligence (AI) has significantly altered the dynamics of knowledge production, dissemination, and management across multiple sectors, with education emerging as one of the most profoundly affected domains. Beyond the broad conceptualization of AI as the capacity of machines to simulate human intelligence processes such as learning, reasoning, and decision-making (Russell & Norvig, 2021; Chen et al., 2020), what is most relevant to classroom practice today is the proliferation of specific AI tools that students and lecturers now interact with directly. Tools such as ChatGPT, Grammarly, Turnitin, and various adaptive learning platforms have moved AI from an abstract computational concept into a set of everyday instructional aids that shape how students write, research, revise, and receive feedback (Baidoo-Anu & Ansah, 2023). In contemporary higher education systems, these AI tools are increasingly being used in teaching, learning, and

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assessment processes. Lecturers across developed and emerging economies now use AI-driven platforms to design instructional materials, automate aspects of grading, and personalize feedback, while students use tools such as ChatGPT for idea generation and explanation, Grammarly for language correction, and Turnitin for originality checking. This shift reflects a broader transition from traditional, teacher-centered models of education to more flexible, data-driven, and learner-centered paradigms (Holmes & Tuomi, 2022).

However, the use of AI tools in tertiary education systems in developing countries such as Nigeria presents a complex interplay of opportunities and constraints. On one hand, tools such as ChatGPT and adaptive learning platforms offer the potential to address longstanding systemic challenges, including inadequate teaching resources, large class sizes, and limited access to up-to-date reference materials. On the other hand, structural limitations such as poor infrastructure, limited digital literacy, inconsistent internet connectivity, and inadequate policy frameworks pose significant barriers to the effective and responsible use of these tools (Awoleye & Siyanbola, 2023). The Nigerian experience therefore differs markedly from that of better-resourced systems, and this difference has direct implications for how AI tools should be introduced into Nigerian classrooms.

Within this broader context, the teaching of educational management courses occupies a strategic position. Educational management courses, such as Educational Planning, School Administration, Supervision of Instruction, and Educational Measurement and Evaluation, are inherently concerned with the organization, leadership, and administration of educational systems. These courses require not only theoretical understanding but also practical competencies in decision-making, planning, and policy implementation. As such, they are particularly well-suited to benefit from AI tools that can simulate real-world administrative scenarios, support research writing, and provide data-driven insights into student performance.

Despite the growing presence of AI tools in Nigerian classrooms, empirical evidence on how specific tools such as ChatGPT, Grammarly, and Turnitin affect the teaching and learning outcomes of educational management courses remains limited. Existing studies on AI in education in Nigeria have tended to focus on general perceptions of AI rather than on how named tools are actually used in specific courses, and on outcomes such as comprehension, assignment quality, and engagement (Baidoo-Anu & Ansah, 2023; Chiu et al., 2023). This gap underscores the need for a focused examination of how identifiable AI tools are shaping the teaching and learning of educational management courses in Nigerian tertiary institutions.

This paper, therefore, examines the impacts of AI tools, specifically ChatGPT, Grammarly, and Turnitin, on the teaching and learning outcomes of educational management courses in tertiary institutions in Nigeria. Specifically, it clarifies the key concepts relevant to the study, reviews the theoretical foundations of AI adoption in education, examines how these AI tools are applied in the teaching of educational management courses, and discusses the benefits, challenges, and implications of their use for educational management practice in Nigeria.

## Conceptual Clarifications

### Artificial Intelligence Tools

Artificial Intelligence (AI) tools are software applications built on machine learning and natural language processing techniques that perform tasks such as content generation, language correction, plagiarism detection, and personalized

instruction (Russell & Norvig, 2021). Among the most widely used AI tools in higher education are ChatGPT, a generative language model capable of producing explanations, summaries, and draft text in response to prompts; Grammarly, a writing-assistance tool that checks grammar, spelling, and style; and Turnitin, a plagiarism-detection tool used to assess the originality of academic submissions (Baidoo-Anu & Ansah, 2023).

According to Holmes et al. (2019), AI in education encompasses systems that can support, enhance, and optimize learning through adaptive algorithms and data-driven insights. In the context of this paper, the researcher adopts a narrower and more applied understanding of AI: rather than treating AI as a single, monolithic technology, the paper focuses on identifiable tools that lecturers and students of educational management courses can name, access, and evaluate. This applied understanding is considered more useful for Nigerian tertiary institutions because it allows institutions to assess specific tools for relevance, cost, and accessibility, rather than adopting AI as a vague policy aspiration.

**Educational Management**

Educational management, as a discipline, refers to the systematic coordination of human, material, and financial resources within an educational system to achieve predetermined objectives, encompassing planning, organizing, staffing, directing, and controlling educational processes (Bush, 2020). However, educational management as a discipline is delivered to students through specific courses. In Nigerian tertiary institutions, these courses commonly include Educational Planning, School Administration, Supervision of Instruction, Personnel Management in Education, and Educational Measurement and Evaluation.

This paper focuses specifically on these courses rather than on educational management as a broad discipline, because the way an AI tool such as ChatGPT is used in a course like Educational Planning, where students may use it to draft planning scenarios and policy briefs, differs from how Turnitin is used in a research-based course such as Educational Measurement and Evaluation, where originality of student work is a central concern. By narrowing the focus to specific courses, the paper is able to examine concrete instructional tasks, such as assignment writing, seminar preparation, and project supervision, in which AI tools are actually applied, rather than discussing AI in only general terms.

**Teaching and Learning Outcomes**

Teaching and learning are dynamic and interactive processes that involve the transmission and acquisition of knowledge, skills, and values. From the perspective of teaching, an outcome refers to a measurable change in instructional practice, such as the time a lecturer spends on routine tasks like setting tests, correcting grammar in student scripts, or checking submissions for originality. From the perspective of learning, an outcome refers to a measurable change in the student, such as the quality of a written assignment, the depth of understanding of a concept in School Administration, the level of engagement during a seminar, or the score obtained in a continuous assessment.

Traditional approaches to teaching educational management courses in Nigerian tertiary institutions have often been characterized by teacher-centered methods, where knowledge is delivered in a one-directional manner, primarily through lectures and the dictation of notes. Contemporary educational theories, however, emphasize learner-centered approaches in which students actively participate in constructing knowledge through interaction and experience (Piaget,

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1972; Vygotsky, 1978). It is against this backdrop that the researcher considers AI tools relevant: tools such as ChatGPT and adaptive learning platforms align with the learner-centered paradigm by enabling students to ask questions, receive immediate explanations, and revise their work iteratively, while tools such as Grammarly and Turnitin directly affect the teaching outcome of assessment by changing how lecturers grade and verify student work (Hwang et al., 2020).

Nevertheless, the use of AI tools in teaching and learning educational management courses raises important questions about the role of the lecturer. While tools such as ChatGPT can generate explanations and Grammarly can correct language, neither tool can fully replicate the contextual judgement a lecturer applies when assessing a student's grasp of, for example, the practical realities of school supervision in a rural Nigerian secondary school. This underscores the need for a balanced approach that integrates AI tools without undermining the lecturer's professional judgement and the human dimensions of teaching educational management courses.

## Theoretical Framework

### Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis (1989), provides a useful framework for understanding the adoption of AI tools such as ChatGPT, Grammarly, and Turnitin in educational settings. The model posits that two key factors, perceived usefulness and perceived ease of use, determine whether individuals accept or reject a technology. In the context of educational management courses, lecturers are more likely to adopt AI tools such as Turnitin for assessing student projects in Educational Measurement and Evaluation if they perceive the tool as enhancing the accuracy of plagiarism detection without adding excessive workload. Similarly, students are more likely to use Grammarly when drafting assignments in courses such as School Administration if they find the tool accessible and if it visibly improves the quality of their submissions.

Empirical studies such as Venkatesh et al. (2012) have shown that technological adoption in higher education is strongly influenced by institutional support, training, and infrastructure. In Nigeria, where technological resources are unevenly distributed across institutions and even within the same institution, these factors play a critical role in determining whether lecturers and students in educational management departments adopt tools such as ChatGPT and Turnitin consistently or only sporadically.

Thus, TAM highlights that the impact of AI tools on the teaching and learning outcomes of educational management courses is not solely dependent on the capability of the tool itself, but also on the perceptions, training, and institutional support available to lecturers and students who use ChatGPT, Grammarly, and Turnitin in their day-to-day academic work.

### Constructivist Learning Theory

Constructivist Learning Theory provides a pedagogical foundation for understanding how AI tools can support teaching and learning in educational management courses. The theory emphasizes that learners actively construct knowledge through interaction with their environment (Piaget, 1972). AI tools support constructivist learning by creating environments where students can explore concepts, receive feedback, and engage in critical thinking. For example, a student in a course such as Educational Planning can use ChatGPT to generate a draft plan for school resource allocation, compare it with the lecturer's model answer, and revise their understanding based on the differences observed. This iterative process of drafting, comparing, and revising

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reflects the constructivist emphasis on learning through active engagement rather than passive reception of information. Vygotsky's (1978) concept of the Zone of Proximal Development (ZPD) is also relevant here. AI tools such as ChatGPT can provide instructional scaffolding, for instance, by explaining a difficult concept in Supervision of Instruction in simpler terms, that helps learners move from basic understanding to more complex levels of competence. However, it is important to critically assess the limitations of AI tools within this framework. While ChatGPT can facilitate cognitive scaffolding, and Grammarly can support the mechanical aspects of writing, neither tool fully supports the social interaction and collaborative learning, such as group discussion and peer review, that are central to constructivist theory in the teaching of educational management courses.

**Applications of AI Tools in the Teaching of Educational Management Courses**

The application of AI tools in the teaching of educational management courses extends beyond simple automation to encompass instructional delivery, assessment, and administrative simulation. Because the discipline itself is rooted in decision-making, systems thinking, and organizational analysis, AI tools that support drafting, feedback, and originality checking are particularly well-suited to its teaching.

One prominent application is the use of ChatGPT in adaptive instructional delivery. According to Holmes and Tuomi (2022), AI-driven platforms analyze learner data in real time to adjust content difficulty, pacing, and presentation style. In practical terms for a course such as School Administration, a lecturer may use ChatGPT to generate differentiated explanations of a concept such as “span of control” at varying levels of complexity, then select the explanation most suited to the class. By tailoring instruction in this way, ChatGPT helps bridge the gap between abstract administrative theories and applied understanding for students. Furthermore, AI tools play a critical role in assessment and evaluation processes. Traditional assessment methods in tertiary institutions are often time-consuming and prone to inconsistency. Turnitin, for example, automates the checking of originality in student assignments and project reports, providing similarity reports that lecturers in courses such as Educational Measurement and Evaluation use to flag submissions for further review. As noted by Sarker (2022), AI-based systems enhance assessment reliability by minimizing subjectivity while enabling large-scale analysis of student submissions. This allows lecturers in educational management courses to identify patterns, such as recurring weaknesses in students' explanations of policy analysis or budgeting models, thereby informing targeted pedagogical interventions.

Another application lies in simulation-based learning. Courses such as Educational Planning and Supervision of Instruction require students to develop competencies in planning, leadership, and crisis management. ChatGPT-based prompts can be used by lecturers to create short administrative scenarios, for example, a case in which a school principal must respond to a sudden shortfall in teaching staff, allowing students to practice decision-making in a controlled exercise. According to Kuleto et al. (2021), such AI-supported simulations enhance experiential learning by providing immediate feedback and enabling iterative practice.

In addition, AI tools support administrative efficiency within teaching environments. Tasks such as drafting lesson outlines, generating sample questions for Educational Measurement and Evaluation, and checking the language quality of handouts using Grammarly can be automated, thereby reducing the administrative burden on lecturers. This

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aligns with findings by Baidoo-Anu and Ansah (2023), who argue that AI tools enable educators to focus more on pedagogical engagement rather than routine administrative duties. Beyond instructional delivery, AI tools such as ChatGPT also contribute to knowledge organization for both lecturers and students. By helping users summarize lengthy policy documents or textbook chapters on educational management into shorter study notes, these tools enable students to retrieve and revise key concepts more efficiently ahead of examinations in courses such as Educational Planning and School Administration.

Despite these applications, it is important to recognize that AI tools are not a panacea for the teaching of educational management courses. Their effectiveness depends on the specific tool used, the task it is applied to, and the extent to which lecturers and students are trained to use it critically rather than uncritically.

**Benefits of AI Tools in Teaching Educational Management Courses**

The use of AI tools such as ChatGPT, Grammarly, and Turnitin in the teaching of educational management courses offers multidimensional benefits that extend across instructional, administrative, and assessment domains in Nigerian tertiary institutions.

Firstly, these tools significantly improve operational efficiency for lecturers. Turnitin automates the checking of originality in student term papers and project reports for courses such as Educational Measurement and Evaluation, a task that would otherwise require lecturers to manually compare numerous submissions. Similarly, Grammarly reduces the time lecturers spend correcting basic grammatical errors in students' written assignments, allowing them to focus on the substantive content of students' arguments on topics such as decentralization of school administration. Kabudi et al. (2021) note that such automation reduces workload pressures on educators, allowing them to focus on higher-order teaching activities.

Secondly, AI tools promote equity and accessibility in the learning of educational management courses. Through tools such as ChatGPT, students in institutions with limited library holdings on topics like comparative education systems can obtain explanations and summaries of concepts that might otherwise only be available in textbooks that are scarce or outdated in many Nigerian institutional libraries. Baidoo-Anu and Ansah (2023) argue that generative AI tools have the potential to make explanations of complex concepts more accessible to students regardless of the quality of their institution's library resources.

Another important benefit is enhanced quality of student written work. Educational management courses rely heavily on essay-type assignments and project reports for assessment. Grammarly improves the clarity and correctness of students' written submissions in courses such as School Administration and Educational Planning, while ChatGPT can help students structure their arguments before they begin writing. According to Chen et al. (2020), AI-assisted writing support can improve the overall quality of submitted academic work, which in turn can be reflected in improved assessment scores.

Furthermore, AI tools contribute to cost-effectiveness in the long term for institutions, particularly with respect to plagiarism checking. Although subscription costs for tools such as Turnitin represent an initial expense, the automation of originality checking reduces the time lecturers would otherwise spend manually verifying the authenticity of

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large numbers of student projects each semester.

Despite these benefits, it is necessary to adopt a balanced perspective. As Holmes and Tuomi (2022) argue, the effectiveness of AI tools depends largely on how they are integrated into existing teaching practices for educational management courses, and on whether lecturers and students are guided on how to use them appropriately rather than as a substitute for independent thinking.

**Challenges of Using AI Tools in Teaching Educational Management Courses**

The use of AI tools in the teaching and learning of educational management courses in Nigerian tertiary institutions is accompanied by significant challenges that must be critically examined.

One of the most pressing issues is the ethical concern surrounding over-reliance on tools such as ChatGPT for writing assignments and project work in courses like Educational Planning and School Administration. When students submit AI-generated text as their own original work without proper acknowledgement, this raises concerns about academic integrity that institutions are still developing policies to address. Dignum (2021) emphasizes that without proper regulation, the use of such AI tools can compromise the integrity of academic assessment and, where personal student data is processed by these platforms, raise data-privacy concerns as well.

Another major challenge is the digital divide between students. Access to AI tools such as ChatGPT, Grammarly, and Turnitin is uneven among students in Nigerian tertiary institutions, often along the lines of students' personal financial capacity to afford a smartphone, a laptop, or a stable internet data subscription, rather than along institutional lines alone. Pedro et al. (2019) argue that such disparities in access to digital tools can exacerbate existing inequalities in educational outcomes, as students who can afford reliable access to these tools may complete assignments more efficiently than those who cannot.

Additionally, infrastructural limitations pose serious barriers to the consistent use of AI tools in the teaching of educational management courses. Frequent power outages and poor internet connectivity in many Nigerian tertiary institutions mean that lecturers cannot reliably plan classroom activities around tools such as ChatGPT, since access to the tool depends on a stable internet connection that is not always available during scheduled class periods.

The issue of over-dependence on AI tools is also critical. Where students rely on ChatGPT to generate explanations of concepts in Supervision of Instruction without engaging critically with the material, or rely on Grammarly to correct their writing without learning the underlying grammatical rules, there is a risk that the use of these tools may substitute for, rather than support, the development of students' own analytical and writing skills. Luan et al. (2020) warn that excessive reliance on AI tools may reduce the depth of learning that students achieve.

Finally, there is resistance to the use of these tools among some lecturers teaching educational management courses. This resistance often stems from limited training on how to use tools such as Turnitin to interpret similarity reports correctly, concerns about the reliability of AI-generated content, and limited institutional guidance on acceptable use of ChatGPT in coursework.

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**Implications for the Teaching of Educational Management Courses in Nigeria**

The use of AI tools such as ChatGPT, Grammarly, and Turnitin in Nigerian tertiary institutions carries significant implications, that is, consequences that lecturers, students, and institutions must respond to, for how educational management courses are taught, assessed, and administered.

Firstly, the presence of tools such as ChatGPT implies that lecturers teaching educational management courses may need to redesign assignment questions so that they require students to apply concepts to specific Nigerian institutional contexts, for example, analyzing the staffing challenges of a named local government's secondary schools, rather than asking for generic definitions that ChatGPT can readily produce. Secondly, the use of Turnitin implies that institutions must invest in training lecturers on how to interpret similarity reports, since a high similarity score does not automatically mean a student has plagiarized, particularly where the student has correctly cited sources using APA format.

Thirdly, the use of Grammarly and ChatGPT for writing support implies a need for clearer guidance to students in educational management courses on the boundary between using AI tools to improve their own writing and submitting AI-generated text as their original work.

Furthermore, the reliance of these tools on stable internet access implies that the integration of AI tools into the teaching of educational management courses cannot be uniform across Nigerian tertiary institutions until infrastructural development, including reliable electricity and internet access, is addressed at the institutional level.

**Conclusion(s)**

AI tools such as ChatGPT, Grammarly, and Turnitin represent a tangible and growing presence in the teaching and learning of educational management courses in Nigerian tertiary institutions. Their capacity to support personalized explanations, improve the quality of student writing, and automate originality checking makes them valuable instructional aids in courses such as Educational Planning, School Administration, and Educational Measurement and Evaluation.

However, their use must be approached with caution, particularly given the infrastructural and socio-economic challenges that characterize many Nigerian tertiary institutions. These tools should not be viewed as a substitute for lecturers' professional judgement but as instructional aids that, when used with clear guidelines and adequate training, can enhance the teaching and learning of educational management courses. Ultimately, the meaningful integration of AI tools into the teaching of educational management courses in Nigerian tertiary institutions depends on clear institutional policy, targeted lecturer training, and a commitment to maintaining the integrity and human judgement that underpin educational management practice.

**Recommendations**

i. Based on the analysis, the following recommendations are proposed:
ii. Institutions should develop clear, written guidelines on the acceptable use of AI tools such as ChatGPT, Grammarly, and Turnitin in the preparation and assessment of assignments and projects in educational management courses.
iii. Continuous professional development programmes should be organized for lecturers of educational management courses

on the practical use of Turnitin for originality checking and on interpreting its reports appropriately.

iv. Lecturers should redesign assignment tasks in courses such as Educational Planning and School Administration to require application of concepts to specific Nigerian institutional contexts, thereby reducing over-reliance on AI-generated generic responses.

v. Institutions should explore subsidized or institutionally licensed access to tools such as Grammarly and Turnitin to reduce inequalities in access among students.

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