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CHATGPT AS A TOOL FOR PLANNING SECONDARY EDUCATION: OPPORTUNITIES AND CHALLENGES IN THE AGE OF ARTIFICIAL INTELLIGENCE

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Abstract

This study examines the role of ChatGPT in planning secondary education in Nigeria, emphasizing both its opportunities and challenges in the era of Artificial Intelligence (AI). Secondary education serves as a critical bridge between primary and tertiary levels, equipping learners with knowledge, skills, and values essential for personal development and national progress. However, the system continues to face persistent challenges, including inadequate funding, poor infrastructure, declining teacher performance, and low learning outcomes, which undermine its effectiveness and sustainability. In response to these challenges, AI has emerged as a transformative tool for strengthening educational planning. Specifically, ChatGPT holds significant potential in improving planning processes, facilitating evidence-based decision-making, enhancing communication, streamlining administrative functions, and supporting both teaching and learning. Despite these opportunities, the study recognizes major barriers to effective integration. These include financial constraints, infrastructural deficits, limited digital literacy among teachers and administrators, ethical and data privacy concerns, and resistance to adoption due to fears of eroding professional autonomy. To address these barriers, the study recommends phased funding models, targeted infrastructural investment, continuous professional development programs, robust data protection measures, and collaborative change management strategies. Effective implementation of these measures can ensure that ChatGPT serves as a complementary tool, strengthening rather than diminishing educational standards. The findings highlight that, with strong policy frameworks and sustainable practices, ChatGPT has the potential to foster a more efficient, equitable, and future-ready secondary education system in Nigeria.

Keywords: ChatGPT, Secondary Education, Planning, Opportunities, Challenges, Artificial Intelligence Age

Introduction

In Nigeria, educational institutions are structured into three levels: primary, secondary, and tertiary. This study focuses on secondary education, which serves as a critical bridge between primary and tertiary levels. Secondary education plays a pivotal role in students' overall development, as it is designed to equip learners with the knowledge, skills, and values necessary for personal growth, civic engagement, and national development (Madukwe et al., 2024). Ideally, secondary schools are expected to nurture students holistically by fostering cognitive, affective, and psychomotor competencies (Ngene et al., 2025). Its focus is usually placed on the acquisition of academic or vocational skills (Ataben et al., 2026). Despite its importance, the secondary school system faces numerous challenges that limit its effectiveness. These include inadequate funding, dilapidated infrastructure, poor investment in human capital, weak policy implementation, declining teacher performance, and low educational outcomes (Obona et al., 2023; Ngene et al., 2024; Obona et al., 2024; Difoni et al., 2025). Furthermore, the prevailing learning environment in many schools undermines the sustainability of the system, leaving large numbers of Nigerian youths without employable skills. This situation contributes to persistent unemployment and, in some cases, engagement in social vices.

In today's world, where changes in socio-economic and technological development occur rapidly, effective planning is essential in solving many problems, such as limited resources, unequal chances and learning outcomes. Planning of secondary education plays an important role in maintaining a high level of education and equity in Nigeria. Artificial Intelligence (AI) can help in many areas of education, including efficient planning, management, and use of resources in the educational sector. This study focuses on the role of ChatGPT in planning and managing secondary education in Nigeria. The aim is to understand the opportunities and threats of introducing such technologies in the era of AI and identify ways to use this software to benefit the educational system. The research is critical to evaluate whether the use of AI is appropriate in education in general and in secondary education in particular, as well as to explore ways to improve the efficiency of the existing system.

The Concept of ChatGPT

One of the most prominent AI technologies in the contemporary education is ChatGPT. According to Carroll (2015), ChatGPT is a 'free AI chatbot for humans' to engage in dialogues, gain insight, execute tasks, and demonstrate the strength of innovative technologies. In education, ChatGPT can provide valuable feedback to administrators, lecturers, and students. Unlike other AI technologies such as Wenxin Yiyan, Tongyi Qianwen, and KIMI, ChatGPT has been a highly influential tool with multiple applications that leverages knowledge and technologies from various disciplines (Lin, 2024). As explained by Jain et al. in Khan et al. (2023), the influence of AI on the educational landscape is 'both fundamental and far-reaching,' fundamentally changing the pedagogy, management, and consumption of knowledge. OpenAI develops the ChatGPT as a natural language processing AI model based on the GPT-3 framework (ChatGPT, 2022). The technology has been recognized for its extensive knowledge base, powerful reasoning capability, and language generation capacity to present contextually appropriate information (Miller, 2019). Therefore, the advanced human computer interaction capacity makes ChatGPT a valuable tool in the education sector to support

personalized learning, teaching, and learning analytics. The utilization of ChatGPT in education represents a major disruption in the teaching and learning processes and administrative functions.

The Age of Artificial Intelligence (AI)

The concept of Artificial Intelligence (AI) originates in the 1950s when scientists started investigating the possibility of teaching machines to simulate a thinking human brain. AI is defined as computers designed to accomplish tasks that typically require human intellectual capacity (Lin, 2024; Russell & Norvig, 2016; Chukwuma et al., 2021). The rise of AI has revolutionized education to develop academic and managerial innovations. AI is a product of technological developments that mimic human intellectual capabilities using machine learning, neural networks, and natural language processing (Halaweh, 2023; Igbokwe, in Iyaji et al., 2024). In the context of education, the applications of AI range between automation, individual learning (personalization), data analysis, and decision-making.

Educational managers benefit from AI in resource allocation, supervision, and evaluations to transform the system (Ibrahim et al., 2021; Nwuke & Yellowe, 2025). Ejilibe and Ebeh (2026) maintain that educational institutions are increasingly adopting digital learning facilities to enhance instructional delivery, improve communication, facilitate collaboration, and support evidence-based decision-making. Similarly, AI platforms analyze students' needs to provide recommendations (Adeoye, 2022). Through the use of machine learning, language processing, and analytics, AI continues to transform the pedagogy, didactics, and administration of education. Ogunleye and Olanrewaju (2022) explain that the integration of AI in education promises efficiency, personalization, and better learning outcomes in the 21st century.

AI has become a significant phenomenon in the world today as it has facilitated the development of many new innovative things, including generative AI software such as ChatGPT (Patel, as cited in Cui & Alias, 2023; Liu et al., in Khan et al., 2023). Its significance shows the extent to which AI has changed various fields (Buholayka et al., 2023). ChatGPT is a large language model with training data to perform conversational tasks such as translation, conversation, text generation, and completion (Baidoo-Anu & Owusu, 2023; Strzelecki, 2023). Unlike the previous applications of AI, ChatGPT is designed in a way that it produces more authentic and coherent text, making the conversations more realistic.

The Concept of Educational planning

Education planning lays the foundation for a successful school system because it ensures the proper use of resources and strategies in facilitating learning outcomes. Coombs, as cited in Odim et al. (2025), explains that educational planning is a process by which policy makers and administrators come up with future expectations, objectives, allocation strategies, and tactics for achieving the needs of both students and society. Its main purpose is to balance the financial, human, and material resources against the educational requirements of people and make efficient use of the former.

Effective planning is key to achieving academic success, good student results, cost-efficient use of resources, effective school climate, and retaining and attracting good teachers to the institution (Ngene et al., 2025). It aims to achieve set objectives by aligning human and material

resources (Argon, 2021; Fayol, 2005; Yılmaz et al., 2025). Efficient management processes usually have profound effect on productivity levels of an organization (Achilike & Ejilibe, 2025). In recent times, Artificial Intelligence (AI) has been a key tool utilized by educational administrators in the planning and managing process. The application of AI in education takes part in assisting managers in accomplishing a wide range of activities ranging from budgeting, student admits, course management, procurement, expenses management, and school maintenance. The use of AI in these aspects of school management reduces costs and increases accountability. İşler and Kılıç (2021) explain that the automation of some routine procedures by AI gives the educational administrators time to focus on aspects of school management that add value, including promoting teaching and learning and improving school performance.

Opportunities of ChatGPT in Planning Secondary Education

i. Planning Procedure: A good plan provides direction to both the leaders and the staff and eliminates unnecessary divergences if adhered to (Yılmaz et al., 2025). As with other organizations, planning is an essential activity in educational institutions. ChatGPT can be utilized to support the process of planning by summarizing literature, outlining policy briefs, producing scenario outlines, and aggregating stakeholder inputs. This will save the administrative personnel time to do more value-added activities. It entails predicting future trends, decision-making on future activities, anticipating problems and implementing strategies to address them (Kıral & Deliveli, as cited in Yılmaz et al., 2025). Additionally, AI applications can be utilized in analyzing large volumes of data to reveal patterns and make inferences about the students. The process is important in examining the performances of students and teachers.

ii. Efficient Decision-Making: Tools such as ChatGPT can be utilized to make decisions by breaking down information, presenting recommendations based on evidence, and interpreting outcomes. Decision-making is key to the success of any organization, and the same applies to educational institutions. It is the basis for all objectives achieved (Bolat et al., 2016). Administrators rely on verifiable data and good rapport to make informed decisions (Koparal & Özalp, as cited in Yılmaz et al., 2025). A significant AI technique that supports decision-making is data mining. It entails the discovery of patterns and trends from a large amount of data. Data mining has been widely used in the field of education to classify students, determine success factors, predict graduation rates and intervene with at-risk learners (Göker & Tekedere, 2020; Özbay, 2015).

iii. Strategic Communication: Communication is not only vital to the teaching/learning process but also to the smooth operation of educational institutions. It entails the exchange of information within levels and between units in an organization to set objectives, motivate staff, encourage teamwork, and meet desired goals (Draft, 2010). By linking units together, it facilitates interaction and promotes desirable behaviors (Taymaz, as cited in Yılmaz et al., 2025). Tools such as chatbots are changing the way organizations communicate through natural language processing (NLP). They are used in automating communication processes by linking information together. Chatbots such as ChatGPT can be utilized as virtual assistants to draft mails, circulars, and reminders while also answering queries. Studies emphasize that chatbots have revolutionized the way organizations communicate because they save time while also promoting good information exchange between schools, teachers, parents, and students. They

are also being used in admissions to help applicants interact with the institutions by aiding in course selection and communication (Sansi, Olaleye, Agbo, & Chiu, 2022).

iv. Efficient Administration: ChatGPT is changing the way schools are administered by increasing productivity and flexibility. It automates various academic and managerial procedures so that the administrators and teachers can utilize their time to focus on other activities (Amadi & James, 2025). The applications of ChatGPT in the classroom show promise in making the pedagogy and administration of education more interesting and efficient (Ku Chhaya, as cited in Amadi & James, 2025). Schools are also utilizing ChatGPT to analyze large volumes of data and come up with projections to make long-term planning easier in addition to saving resources. This is important for making institutions more efficient in terms of administration (Amadi & James, 2025).

The effective management of secondary education institutions requires proper utilization of available resources, appropriate policy control, and conducive learning environments (Adaku & Obona, 2024; Nwannunu et al., 2024). ChatGPT can help address these issues by managing schedules, records, finances, and student queries, thus, allowing the administrators to focus on the critical aspects of the school (Iyaji et al., 2024; Obona et al., 2024). Moreover, the AI can analyze the information it processes to help the faculty make accurate forecasts of student performance, manage financial aid allocation, reduce costs, and increase the level of detail in every aspect of the school's operation (Nemorin, Vlachidis, Ayerakwa, & Andriotis, 2022). This technology can also be utilized during student enrollment, purchasing, construction, and other processes to make the institution more cost-efficient.

v. Instructional support: ChatGPT contributes significantly to instructional support by helping teachers enrich lessons, provide interactive learning, and engage students more. The responsibilities of school teachers have become increasingly complex due to continuous educational reforms, technological innovations, globalization, and the changing expectations of society (Ejilibe & Ebeh, 2026). Unlike other search engines such as Google that provide overwhelming information to users, ChatGPT provides concise and relevant information which enhances instructional effectiveness. In addition, ChatGPT allows teachers to customize reading passages and adjust their complexities according to the individual needs of students to enhance differentiated instruction (Amadi & James, 2025). AI tools also help to record management such as grades and attendance and develop timetables according to the availability of teachers, class size and availability (Arya, 2024). In addition, ChatGPT helps with lesson planning, provides tailored instructional materials and enhances assessment practices (Rahman & Watanobe, 2023).

These applications provide formative feedback, encourages reflective teaching and provide translation and editing services to students (Wiggins, 2011). Apart from use in classrooms, they also enhance presentations, literature reviews and reduce workloads hence allowing teachers to focus on more important tasks. AI systems also monitor student engagement, detect at risk students and provide data for targeted interventions (Bhutoria, 2022).

vi. Students Support: ChatGPT provides personalized learning assistance as a learning aid in doing assignments, essays, solving problems and answering theoretical questions. It encourages independent learning by providing clarification while enhancing grammar and

vocabulary skills especially for students with learning difficulties and those who are not proficient in the English language (Nautiyal et al., 2023). AI virtual advisors also help with course, career advice and tutoring hence lightening the burden of counselors (Arya, 2024). Besides, AI encourages collaborative learning by connecting students across distances and facilitating the exchange of information (McLaren, Scheuer & Miksatko, 2010). Virtual reality and virtual assistants, emerging AI applications, facilitate teamwork, provide immersive experiences and support students on their educational journey (Mureșan, 2023). Through learning management systems, AI provides personalized feedback, detects at risk students and designs responsive curricula to the diverse needs of students (Mahendra, 2023).

Challenges in Integrating ChatGPT into Educational Planning

The following challenges affect the integration of ChatGPT in educational planning:

i. Financial Constraints: The integration of ChatGPT in educational planning can be a challenge due to financial constraints especially in schools with limited resources. AI applications such as ChatGPT require a huge investment in digital infrastructures, software, internet and maintenance of the systems. Many schools, especially those in developing countries already have limited budgets and cannot afford such investments. Additionally, schools may incur extra costs in training teachers and administrators on effective application of these technologies. Without proper budgeting, schools may experience irregular ChatGPT applications thereby exacerbating inequalities in the use of modern education technologies.

ii. Infrastructural Barriers: A big hindrance to effective ChatGPT applications in educational planning is infrastructural barriers that are rampant in developing countries such as Nigeria. Personal computers and other related digital technologies are insufficient and unavailable in many schools (Aina et al., 2023). This is exacerbated by unstable electricity supply and poor internet connection that is a characteristic feature of secondary schools in Nigeria. These factors not only hinder the steady application of these technologies but also affect students' access to education which ultimately affects overall progress (Tlili et al., 2023).

iii. Limited Digital Literacy among Teachers and School Leaders: One of the main challenges in the adoption of AI technologies such as ChatGPT for educational planning is low digital literacy among school administrators and teachers. Effective application of AI requires access to technology as well as good digital skills. Unfortunately, many administrators and teachers lack the required skills hence hindering effective ChatGPT applications in schools. Although capacity building workshops may enhance this situation, they will require huge time and financial investments in addition to the willingness of teachers to invest time learning the new technologies (Chukwu & Ekene, 2022).

iv. Ethical and Data Privacy Challenges: One of the major challenges associated with the use of AI systems in school educational planning is ethical and data privacy issues. Most of these technologies require huge amounts of data collection from students, teachers and institution data to ensure effective performance. Without proper data privacy measures, this information can be easily compromised causing harm and inconvenience to many students and teachers. In addition to insecurity of data, parents, teachers and students can feel threatened and harassed by certain applications such those that use facial recognition technology (Ezeani

& Onuoha, 2023). Applicable ethical policies and guidelines must be put in place to ensure responsible and sustainable use of these technologies by schools (Adebayo, 2022).

Apart from data privacy issues, many ethical issues surround AI tools such as ChatGPT in education. Many stakeholders question whether ChatGPT and similar AI tools genuinely reflect what students are capable of or if they are just copying work that can be found online. Stakeholders also question the credibility of references produced by these AI tools which often rely on subjective data. Finally, many argue that the overreliance on these technologies reduces the creativity and innovative skills of students especially since ChatGPT applications can produce essays of comparable quality to students who write their original work (Cui & Alias, 2024; Lo, 2023; Wei, 2024).

v. Resistance to Adoption of AI in Education: One of the main obstacles to successful AI adoption in education is resistance from teachers and administrators. Teachers trained in traditional methods can easily feel threatened by the prospect of losing control or being replaced by technology (Shah, 2021; Zhai, 2022; Babalola & Oladipo, 2022).

Approaches to Addressing Barriers in AI Integration for Educational Planning

i. Addressing Financial Constraints

To address the financial constraints associated with ChatGPT applications in education, schools can partner with government agencies, NGOs and private sector to get additional funding. Moreover, building local capacities instead of outsourcing will contribute to long lasting and cost effective ChatGPT applications in schools.

ii. Overcoming Infrastructural Barriers

To overcome infrastructural barriers to ChatGPT applications in education, government and school authorities should invest in infrastructures such as electricity, internet and digital devices. Alternative energy sources such as solar can also be explored to enhance ChatGPT applications especially in areas with unreliable electricity supply.

iii. Enhancing Digital Literacy among Teachers and School Leaders

The most viable approach to overcoming the challenge of limited digital literacy is to conduct continuous professional development (CPD) workshops to equip teachers and administrators with the requisite digital literacy skills. Enhancing CPD will require huge investments of time, money and motivation. Schools and governments can motivate teachers and administrators through allowances, promotions and recognition to encourage them to adopt the new technologies. Teachers also need to understand how effective the ChatGPT applications can be in educational planning. Creating awareness and encouraging peer mentorship will ensure proper application of ChatGPT in schools.

iv. Safeguarding Ethics and Data Privacy

Schools need to ensure that ethical and data privacy standards are strictly adhered when using ChatGPT for educational planning. Informed consent from parents, students and teachers to use their data is vital while encryption and other cybersecurity measures should be put in place

to prevent data crimes. Schools should also put in place guidelines for the responsible use of chatbots in schools to ensure that they enhance creativity and innovation rather than hinder it.

v. Managing Resistance to Adoption of AI in Education

To minimize resistance to the adoption of AI in education, school leaders need to encourage collaborative change management hence convincing the teachers of the numerous benefits of ChatGPT in educational planning.

Conclusion

Secondary education in Nigeria is a vital link to higher education and employment but its effectiveness is undermined by many challenges such as inadequate funding, poor infrastructure, poor teacher performance and lack of employable skills. Artificial intelligence has potential to play a significant role in addressing many of the challenges associated with effective educational planning. However, there are some challenges such as financial constraints, infrastructural barriers, limited digital literacy, ethical and data privacy issues, and resistance to adoption that hinder the effective application of these technologies in schools. Therefore, approaches such as funding through government, NGOs and private partnerships, investment in infrastructures, digital literacy programmes, data privacy policies and change management will enhance ChatGPT applications in schools. The findings of this paper indicate that ChatGPT as an AI tool has the potential to significantly contribute to effective educational planning in secondary education sector thus promoting quality and future ready education in Nigeria.

Suggestions

i. Governments, school authorities, and private sector partners should prioritize sustainable funding mechanisms to support the adoption of ChatGPT and related AI technologies.

ii. Educational policymakers and school administrators should design comprehensive guidelines for the integration of ChatGPT into teaching, learning, and school management. This will ensure that AI complements rather than compromises educational standards.

iii. Secondary schools should establish structured AI literacy programs to equip both teachers and students with the knowledge and skills to effectively engage with ChatGPT. Training should emphasize responsible use in lesson planning, administrative tasks, and learning support, while highlighting its limitations to prevent overdependence.

iv. While ChatGPT enhances personalization and efficiency, schools should actively encourage collaborative learning, peer interaction, and teacher-student engagement. This balanced approach safeguards critical thinking, creativity, and teamwork, reducing the risk of excessive reliance on AI-generated outputs.

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