



ARTIFICIAL INTELLIGENCE TOOLS AND ITS ACCESSIBILITY TO TEACHERS IN BAYELSA STATE, NIGERIA

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Abstract

This paper examined the accessibility of Artificial Intelligence (AI) tools for teachers in Bayelsa State, Nigeria. It highlighted both the opportunities and challenges of AI integration in education. AI-powered tools can enhance personalized learning, streamline administrative tasks, and improve student engagement. Despite these advantages, accessibility remains a significant challenge due to inadequate digital infrastructure, limited AI training, and inconsistent internet connectivity. The study explores various AI tools available to educators, including automated grading systems, virtual learning assistants, and lesson planning software. Findings indicate that while AI adoption is growing, significant disparities exist between Bayelsa State and other regions with more advanced AI implementation. The paper emphasizes the need for targeted investments in AI training programs and technology infrastructure to bridge the accessibility gap. If AI is effectively used, Bayelsa State can enhance instructional efficiency and student outcomes, ultimately fostering a more dynamic and inclusive educational environment.

Keywords: Artificial Intelligence, Tools, Accessibility, Teachers, Educators, Bayelsa State, Nigeria.

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INTRODUCTION

The educational system is rapidly changing from the traditional teaching and learning processes to more sophisticated, digitized and computerized system, with Artificial Intelligence currently expanding exponentially around the world. Artificial intelligence (AI) refers to the development of computer systems that can perform tasks that typically require human intelligence, such as:

learning, problem-solving, reasoning, perception and language understanding. AI has been a topic of fascination for decades, and its impact on our lives is becoming increasingly significant. From virtual assistants like Siri and Alexa to self-driving cars and personalized product recommendations, AI is transforming the way we live, work, and interact with each other. One of the primary benefits of AI is its ability to automate repetitive and mundane tasks, freeing up human resources for more strategic and creative work. For instance, AI-powered chatbots can handle customer inquiries, provide basic support, and even help with transactions. This not only improves efficiency but also enhances customer experience.

Artificial intelligence (AI) is also revolutionizing the healthcare industry. AI-powered algorithms can analyze medical images, diagnose diseases, and even predict patient outcomes. For example, AI powered computer vision can detect breast cancer from mammography images with high accuracy. Additionally, AI-powered robots can assist surgeons during operations, reducing recovery time and improving patient care. Another significant application of AI is in the field of transportation, self-driving cars, powered by AI can reduce accidents, improve traffic flow, and enhance mobility for the elderly and disabled. Companies like Waymo and Tesla are already testing self-driving cars on public roads, and several countries are investing heavily in AI-powered transportation infrastructure.

However, as AI becomes increasingly pervasive, there are also concerns about its impact on society. One of the primary concerns is job displacement. As AI automates tasks, there is a risk that many jobs will become obsolete. Additionally, there are concerns about bias in AI decision-making, particularly in areas like facial recognition and law enforcement. To mitigate these risks, it is essential to develop AI in a responsible and transparent manner. This includes investing in education and retraining programs to help workers adapt to an AI driven economy. Additionally, developers must prioritize fairness, accountability, and transparency in AI decision-making.

In conclusion, AI is transforming our world at an unprecedented pace. While there are risks associated with AI, the benefits are undeniable. As we continue to develop and deploy AI, it is essential to prioritize responsibility, transparency, and fairness. By doing so, we can ensure that AI enhances our lives and creates a better future for all.

CONCEPTUAL FRAMEWORK

Concept of Artificial Intelligence (AI)

Artificial intelligence (AI) encompasses the development of computer systems capable of performing tasks that typically require human intelligence, such as learning, reasoning, problem-solving, and language understanding. In education, Artificial intelligence (AI) technologies offer a wide array of tools and applications designed to enhance teaching and learning experiences. These include adaptive learning platforms that tailor content to individual student needs, intelligent tutoring systems that provide personalized support, automated grading systems, and data analytics tools for gaining insights into student performance (Kent, 2024).

Artificial intelligence (AI) can be divided into two main categories: narrow or weak Artificial intelligence (AI), which is designed to perform specific tasks, and general or strong Artificial intelligence (AI), which is designed to perform any intellectual task that a human can do. While we have made significant progress in the field of Artificial intelligence (AI), we are still far from achieving strong AI.

Teachers who leverage on AI can create more engaging and effective learning environments, cater to diverse student needs, and streamline administrative tasks, ultimately fostering improved academic outcomes for all learners. For those curious about the inner workings of AI systems, it's helpful to understand that AI relies on complex algorithms and computational models inspired by the structure and function of the human brain. At its core, AI systems process vast amounts of data through machine learning algorithms, enabling them to recognize patterns, make predictions, and generate insights autonomously. This is often achieved through techniques such as neural networks, which are composed of interconnected nodes that mimic the neurons in the human brain. Through training on labeled datasets, AI systems learn to recognize features and correlations within the data, allowing them to perform tasks ranging from image recognition to natural language processing. Deep learning, a subset of machine learning, has emerged as a powerful approach within AI, particularly for tasks requiring high-level abstraction and complex decision-making. Additionally, AI systems may incorporate other techniques such as reinforcement learning, where agents learn through trial and error in dynamic environments. Understanding the fundamental principles behind AI technology, educators can better grasp its potential applications in the classroom and its implications for teaching and learning.

Artificial intelligence (AI) represents a transformative force in education, offering unparalleled opportunities for personalized learning, efficiency, and innovation. To understand the "how" and "why" of Artificial intelligence (AI), it is essential to delve into its development and impact (see Figure 1).

Development of Artificial Intelligence (AI)

The history of Artificial intelligence (AI) way back to ancient times, with stories of mechanical men and artificial beings appearing in mythology and literature. However, it wasn't until the mid-20th century ha Artificial intelligence (AI) began to take shape as a scientific field. In the 1950s and 60s, researchers developed early Artificial intelligence (AI) programs including the first chess-playing computer program and the first aural language processing program.

According to Kent (2024), AI is the culmination of decades of research, marked by significant milestones: 1950s-1960s: The birth of AI as a field, characterized by early explorations into problem-solving and symbolic reasoning. 1980s-1990s: Rapid advancements in machine learning and neural networks laid the groundwork for contemporary AI applications. 2000s-2010s: Big data proliferation and computational power boosts fueled breakthroughs in deep learning, enabling AI systems to learn from vast datasets and mimic human cognition more effectively. 2020s: Advancements in natural language processing (NLP) and generative AI led to the development of sophisticated AI writing assistants and educational content generators.

Continued progress in AI ethics, interpretability, and human AI collaboration paved the way for widespread adoption across various domains. 2023: Debut of AI generators capable of producing high-quality educational materials, ranging from lesson plans to essays, empowering educators with valuable resources and reducing their workload (see Table 1).

The concept of Artificial intelligence (AI) is expressly explained in this pictorial:

AI Concepts Explained



Figure 1: Pictorial view of Artificial intelligence (AI) concept explained

Source: Kin Golden Professional Edconsult (2024). Whatsapp platform on Data Analysis with SPSS and Excell.

Table 1: Generations of Computer, Periods and Evolving Hardware

Generations	Time Period	Evolving Hardware
1	1940-50	Vacuum Tube Based
2	1950-60	Transistor Based
3	1960-70	Integrated Circuit Based
4	1970-Present	Microprocessor Based
5	1970-Present	Artificial intelligence (AI) Based

Source: Adapted from Kent (2024).

Artificial Intelligence (AI) Tool for Teachers

There are number of Artificial intelligence (AI) tools for teachers to effectively and efficiently carry out the teaching and learning processes. In the work of Vedhas Artificial intelligence (AI) (2024) analysed number of Artificial intelligence (AI) tools for teachers. These are:

- **AssignmentGPT AI** - AssignmentGPT Artificial intelligence (AI) is a versatile platform that provides a variety of useful features for teachers. Provides assistance in creating lesson plans, providing assignment information, developing rubrics, composing emails to parents, and letters of recommendation Teachers have found generative Artificial intelligence (AI) tools like AssignmentGPT Artificial intelligence (AI) helpful for their workflow improve and improve efficiency in educational projects.
- **GotFeedback** – This tool is good for all teachers in record keeping and feedback from learners. GotFeedback helps teachers provide more personalized feedback to their students in a timely manner. It is integrated into the GotLearning platform. This study has exemplified the need for information to be objective, visible and transparent, actionable, user-friendly, timely, accessible on and continuous.
- **Canva Artificial intelligence (AI)-Powered Tools** - For teachers in Fine Art, they need to improve on the use of this Artificial intelligence (AI) tool. *Canva's Docs to Decks tool* magically transforms plain text into visually appealing slides. The process is simple: submit the presentation, choose from the created slide layouts, and then make adjustments as needed. Another gem from Canva is the *Magic Design Artificial intelligence (AI) tool*. Instead of starting with an outline, teachers can start an entire lecture from one well-written essay. The results are far from impressive.
- **Lumen 5 for Video** - If a video can be more impressive than a slideshow, Lumen 5 comes to the rescue. Offering the system, Lumen 5 creates a video in a fraction of the time it takes to edit it manually. The result is a professional-looking video ready for use in the classroom.
- **Whimsical-Outline Creation Tool** - Whimsical offers a solution for those times when a plan needs to be developed but not yet executed. By entering a keyword or phrase, Whimsical's Tools for teachers and other professionals creates a detailed mind map, providing a visual representation of the topic at hand.
- **EdPuzzles Teacher Assist** - In the early days of distance learning, teachers felt strongly that they did not have a tool to generate questions from video. Now EDPuzzle fills that gap with its Teacher Assist feature. With a single click, the feature generates questions for students to watch and answer on a selection of videos, increasing engagement and understanding.
- **Twees Video Question Generator** - Twee advertises itself as an Artificial intelligence (AI) tool for English, ELA, language arts, and literature teachers but many of their tools can be used by almost anyone. With one tool, you can turn any public YouTube video into an educational watchdog. Twee uses Artificial intelligence (AI) to ensure students take in the information they see.
- **Quizalizes ChatGPT Integration** - Quizalizes tool creates exploratory games from 100 to 1,000 collective words. Within minutes, teachers have a fun set of stage-like questions ready to play.

- **Conker.ai Question Database** - If multiple-choice searches go with you, consider the extensive query arsenal offered by Conker.ai. Just feed the text and see how it frames questions – even on complex topics like Dickens’ literary masterpiece. This content best Artificial intelligence (AI) tool for teachers is in a league of its own.
- **Brisk Teaching** - If you’re a Google Workspace for Education acolyte, this is a great extension to add to your browser. The ability to quickly take any website and recode it to a specific class is great. Who needs expensive tools like Newsela when you can use Brisk Teaching for free?
- **ChatPDF** - Summarize any PDF with this Artificial intelligence (AI) tool. It is very simple and you may need it several times a day, such as when you receive letters from your principal, PLC, or curriculum coordinator. Your students will find and use it to write their papers with Jenni.ai, so maybe you should know.
- **Audiopen** - It is an Artificial intelligence (AI)-powered website that you can use on your computer or mobile device. The app takes your content and enlarges it as it creates the content, which you can adjust as needed.
- **Curipod** - Curipod website allows teachers to create interactive lessons in minutes using Artificial intelligence (AI). Students are able to explore a variety of topics, and the use of Artificial intelligence (AI) helps them find customized lessons tailored to their learning needs. Teachers simply write a topic, and prepared texts are created using text, pictures, polls, open-ended responses, word clouds, and other activities including activities to focus on that SEL assessment.
- **Eduaide.Artificial intelligence (AI)** - It’s an Artificial intelligence (AI)-enabled learning-enhancement tool that gives teachers over 100 different resources to choose from to create high-quality teaching materials. It allows instant translation of the content into more than 15 languages. Teachers can create lesson plans, create discussion prompts, use a “learning assistant” to help create personalized lesson plans, write emails, or compile an accommodation list for students on Eduaide.Artificial intelligence (AI). There’s also a feedback bot, an open discussion, and a rating builder.
- **OpenArtificial intelligence (AI)** - The recently released Teaching with Artificial intelligence (AI) guide is designed to help teachers use ChatGPT in the classroom. The Guide introduces several proposed issues and includes a description explaining exactly how ChatGPT works as well as what it does and its limitations, and provides a reminder of the importance of looking at biases and collecting accurate information. If ChatGPT 4, which is paid, the information is more accurate and reliable than the original.
- **Slidesgo** - Slidesgo tool enables free templates via Google Slides and now features Artificial intelligence (AI) Presentation Maker. With this new function, presentations can be created in minutes. Just choose a theme; Choose a tone such as casual, creative, or professional; Make changes; and draw your speech. Definitely a time saver!
- **Filepower Artificial intelligence (AI)** - Filepower Artificial intelligence (AI) is an essential PDF Artificial intelligence (AI) tool for teachers, offering a seamless way to manage and summarize PDF documents. Whether you’re handling reports from your principal, curriculum coordinator, or professional learning communities (PLCs), Filepower Artificial intelligence (AI) ensures you can quickly grasp the key points. With its intuitive design, it’s easy to use multiple times a day, making PDF document management more efficient.

It important to note that from the list of Artificial intelligence (AI) tools explained, AssignmentGPT AI is the best content tools for delivering your AI content creation for teacher. The innovation in Artificial intelligence (AI) tools for teachers by 2024 has just begun. More and more amazing tools are on the way, with platforms like AssignmentGPT AI ready to unveil exciting new features. As educators explore these AI tools, it's important to remember that accurate, interactive feedback remains paramount. Platforms like AssignmentGPT AI integrate seamlessly with tools like Canva, enabling teachers to turn AI generated content into interactive, structured assessment activities. Even more importantly, any AI content you create must be structured and presented to students. If you need interactive digital delivery, AssignmentGPT AI is the Ai for teachers and delivery platform for students. In a nutshell, the panorama of schooling is evolving rapidly, and AI offer teachers unparalleled possibilities to transform teaching methodologies. When educators embrace these innovative sources, they can enhance personalized learning experiences, streamline responsibilities, and improve student engagement, paving the manner for a brighter destiny in schooling. Artificial intelligence (AI) tools (see Table 2) are increasing every day by day with varieties and multifunctional purposes.

Table 2: Best Artificial intelligence (AI) Tools and Functions

S/N	Function	Artificial intelligence (AI) Tools
1.	Solves anything	ChatGPT
2.	Writes anything	Writesonic
3.	Generates Art	Midjourney
4.	Generates Code	Replit
5.	Generates Videos	Synthesia
6.	Generates Music	Soundraw
7.	Generates TikToks	Fliki
8.	Generates Avatars	Starrytars
9.	Generates PPTs	Slides Artificial Intelligence (AI)
10.	Edit Pictures	Remini
11.	Edit Videos	Pictory
12.	Summarize Notes	Wordtune

Source: Adapted from Kent (2024).

Benefits of Artificial Intelligence (AI) Tools for Teachers

Artificial intelligence (AI) tools offer invaluable support for teacher planning and preparation, revolutionizing the way Teachers approach curriculum design, lesson planning, and administrative tasks. These tools leverage machine learning algorithms to automate repetitive tasks, provide personalized recommendations, and generate insights from data, enabling Teachers to optimize their instructional strategies and save significant time and effort. For instance, AI powered platforms can analyze student performance data to identify areas of strength and weakness, suggest tailored learning activities, and generate adaptive lesson plans that cater to individual student needs. Research conducted by organizations like the RAND Corporation has demonstrated the potential of AI tools to streamline teacher workload and enhance productivity.

According to a RAND study, teachers in the United States spend an average of 12 hours per week on lesson planning and preparation, but AI driven solutions have the potential to reduce this time by up to 20%, allowing teachers to allocate more time to personalized instruction and

student support. Educators who harness the power of AI tools for teacher planning, should be able to optimize their instructional practices, improve student outcomes, and cultivate more engaging and effective learning environments, while achieving a better home/work life balance. Furthermore, Artificial intelligence (AI) tools in figure 2 are expressed vividly.



Figure 2: New Artificial intelligence (AI) tools.

Significance of Artificial intelligence (AI) in Education

Artificial intelligence (AI) tools can significantly enhance accessibility for teachers in various ways:

- **Personalized Learning:** AI can analyze individual student data to tailor educational materials, helping teachers meet diverse learning needs.
- **Intelligent Tutoring Systems:** These provide real-time assistance to students, offering hints and explanations tailored to their specific challenges.

- **Automated Grading:** AI can streamline the grading process for multiple-choice tests and even provide feedback on essays, saving teachers' time.
- **Administrative Efficiency:** Tools like automated grading systems and lesson planners can save teachers time, allowing them to focus more on instruction and student interaction.
- **Assistive Technologies:** AI driven tools can support students with disabilities, providing speech-to-text, text-to-speech, and other adaptations to facilitate learning.
- **Resource Creation:** AI can help teachers quickly generate quizzes, lesson plans, and educational resources, making it easier to engage students.
- **Real-Time Feedback:** AI can offer instant feedback on student performance, enabling teachers to adjust their strategies and provide targeted support more effectively.
- **Virtual Learning Environments:** AI enhances online education platforms with features like chatbots for student support, facilitating engagement and addressing questions in real time.
- **Language Learning:** AI driven language apps provide interactive practice, helping students improve their skills through adaptive exercises and feedback.

Improvement through Accessibility of Artificial Intelligence (AI) Tools to Teachers

According to Bhargav (2024), the improvement through accessibility of AI tools to teachers would facilitate the teaching and learning processing through the following:

- **Personal Learning** - Educators can deliver customized learning experiences based on Artificial intelligence (AI)-driven analytics that provide valuable insights into student performance and learning outcomes. Using this data, Artificial intelligence (AI) can instantly make changes to student learning materials. Teachers can then use this information to create personalized learning experiences tailored to each student's strengths, weaknesses, and pace of learning.
- **Productivity and efficiency** - Artificial intelligence (AI) also brings greater efficiencies. Teachers are responsible for various writing tasks such as communicating with students and their families, grading assessments, providing feedback, etc. Teachers find that more time is spent doing these writing tasks than teaching and work directly with students. The right Artificial intelligence (AI) tools can help automate or streamline these tasks, allowing teachers to spend extra time with students.
- **Creating and supplementing content** - Through Artificial intelligence (AI)-powered platforms, teachers can manage a variety of educational materials. Especially with generative Artificial intelligence (AI), teachers are able to conduct lessons, activities, assessments, discussions, and presentations simply by providing brief keyword information.

Accessibility of Artificial Intelligence (AI) Tools to Bayelsa State Teachers

The integration of Artificial Intelligence (AI) into education is gaining momentum in Bayelsa State, Nigeria. In September 2024, the Bayelsa State Education Trust Fund (EDTF), in collaboration with the Odyssey Educational Foundation, organized a training program for teachers from twelve model secondary schools. This initiative aimed to equip educators with AI

skills to enhance classroom instruction and address emerging technological challenges. The Commissioner for Education, Dr. Gentle Emelah, emphasized the state's commitment to adopting AI to improve educational quality, stating that Bayelsa could not afford to lag in embracing AI technology in its institutions (Anih & Ukeh, 2024).

Research indicates that AI-powered assessment tools can provide timely and accurate evaluations, reducing the administrative burden on educators and allowing for more focused instructional planning. However, challenges such as limited digital infrastructure, slow internet access, and a lack of training on effective AI tool usage persist. Addressing these issues is crucial for the successful integration of AI into teacher education in Bayelsa State (Datonye Fred, 2024, September 18).

To fully realize AI's potential in education, it is essential to invest in technology infrastructure, provide targeted training on AI tool usage, and foster a culture of responsible AI use. Nonetheless, Bayelsa State can enhance instructional practices and improve educational outcomes, ensuring that both teachers and students are well-equipped to navigate the evolving educational landscape.

Unfortunately, the accessibility of Artificial intelligence (AI) tools by teacher is different in the educational system in Bayelsa State. Looking at the neighboring state like Edo State specifically where 15,000 teachers were trained to facilitate teaching and learning process in both the primary and secondary schools of over 400,000 learners in the entire state (Governor Godwin Obaseki Facebook Page, November 11, 2024).

CONCLUSION

The integration of Artificial Intelligence (AI) tools in education presents immense opportunities for enhancing teaching effectiveness and student learning outcomes in Bayelsa State, Nigeria. AI-powered technologies can automate administrative tasks, provide personalized learning experiences, and support teachers in delivering high-quality instruction. However, challenges such as poor digital infrastructure, limited internet access, and inadequate teacher training hinder the full utilization of AI in the classroom. Addressing these barriers requires strategic investments in AI education, capacity-building programs, and the development of supportive policies to ensure equitable access to technology. Comparing Bayelsa State with neighboring regions like Edo State, where extensive AI training programs have been implemented, underscores the need for a more proactive approach. Moving forward, fostering AI adoption in education will require collaboration between government agencies, educational institutions, and technology providers. Bayelsa State can transform its education sector, ensuring teachers and students benefit from the vast potential of artificial intelligence if she embraces AI-driven innovations.

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