

Perceived Roles of AI-Powered Educational Technologies on Undergraduates' Academic Excellence in Selected Library Schools in South-west, Nigeria.

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Abstract

The integration of AI into education aims to optimize learning outcomes, enhance efficiency, and empower educators and students alike. This study examined the perceived roles of AI-powered educational technologies on undergraduates' academic excellence in selected library schools in South-West, Nigeria. A descriptive survey research design was adopted for this study. A stratified random sampling technique was employed to select 324 undergraduate students in three (3) selected library schools in South-West, Nigeria. A self-designed and close-ended questionnaire was used as the instrument for gathering data from the respondents. Pearson Product Moment Correlation (PPMC) was used to analyse the data gathered. Findings revealed that perceived roles of AI-powered educational technologies significantly enhance academic excellence ($r = .687^{**}$), academic knowledge ($r = .816^{**}$), quality education ($r = .530^{**}$) and knowledge accessibility ($r = .650^{**}$) among undergraduates in selected library schools in South-West, Nigeria ($p < .05$). Based on the findings, it was recommended that universities should invest in robust AI infrastructure and platforms that support personalized learning experiences and adaptive educational technologies. Educational policymakers should establish clear guidelines and ethical frameworks for the responsible implementation of AI in education; they should collaborate with educators.

Keywords: Artificial Intelligence (AI)-Powered Educational Technologies, Academic Excellence, Undergraduates, Library Schools, Nigeria.

Introduction

Within any educational environment, academic excellence assumes pivotal significance, serving as an indicator of a student's proficiency in grasping the educational content. While academic success does foster competition among students and, at times, may divert attention from the intrinsic academic substance, it stands as an essential prerequisite for attaining success in subsequent educational stages (Jesusa, Christine & Cherisse, 2023). Academic refers to anything related to education, particularly in the context of an academic environment such as a school, college or other educational institution. The term encompasses the activities, knowledge and norms associated with learning and teaching (Rubas, 2023). In an academic context, the main focus is on the development of knowledge, skills and conceptual understanding. It involves activities such as teaching, research, writing scientific papers, and evaluating academic excellence. Academia covers a wide range of disciplines, and this approach aims to facilitate intellectual growth and individual development through learning and contributing to the development of knowledge more broadly (Sunaiyah, Siswanto, Dermawan & Hashanah, 2022). Students refer to individuals enrolled in an institution of higher education, such as a university or college. They are active participants in an educational programme that aims to acquire knowledge, skills and understanding in a particular field. Students engage in various academic activities, including attending lectures, doing assignments, and participating in class discussions (Kogteva & Kirilina, 2019).

Moreover, technology facilitates interactive and collaborative learning experiences. Educational software, multimedia presentations, and online platforms enable students to interact with course content dynamically, such as through simulations, virtual labs, and interactive quizzes (Shadiev, Yi & Altinay, 2024). Moreover, technology offers personalized learning experiences tailored to individual student needs and learning styles. Adaptive learning platforms leverage data analytics and AI algorithms to track student progress and adapt instructional content accordingly, providing targeted interventions and remediation where needed. This personalized approach addresses gaps in understanding and ensures that each student receives the necessary support to succeed (Vermeulen & Volman, 2024). Artificial Intelligence (AI) plays a pivotal role in revolutionizing education by automating tasks, analyzing data, and providing intelligent insights to enhance teaching and learning processes (Dahal, 2024).

AI-powered educational technologies can perform tasks such as grading assessments, offering personalized recommendations, and even tutoring students in specific subjects. Machine learning algorithms enable these technologies to evolve and improve over time, refining their ability to support student learning effectively. The integration of AI into education aims to optimize learning outcomes, enhance efficiency, and empower educators and students alike (Rizvi, 2023). Artificial Intelligence (AI) can use extensive educational data to identify patterns, trends, and areas for improvement, enabling educators to make data-driven decisions and tailor instructional strategies to meet the diverse needs of students (Tobler, 2024). For students, AI-powered technologies offer personalized learning experiences, adaptive feedback, and opportunities for self-directed learning, ultimately enhancing

academic excellence. The field of artificial intelligence has led to the emergence of human-like intelligence in computers, machines, and other artefacts. Artificial intelligence (AI) in education significantly influences how the curriculum is designed and how students are engaged (Montgomery, 2024).

Artificial Intelligence (AI) powered educational technologies are revolutionizing the landscape of higher education by significantly enhancing academic knowledge, quality education, and knowledge accessibility for university students. These technologies, ranging from intelligent tutoring systems to personalized learning platforms, provide tailored educational experiences that adapt to the individual learning pace and style of each student. This personalized approach ensures that students receive the support they need exactly when they need it, thereby improving their understanding of complex subjects and enhancing overall academic performance (Tobler, 2024). Moreover, AI-powered technologies contribute to quality education by enabling more interactive and engaging learning experiences. Virtual reality (VR) and augmented reality (AR) technologies, powered by AI, allow students to immerse themselves in realistic simulations and hands-on activities that would be impossible in traditional classroom settings. For instance, medical students can practice surgeries in a virtual environment, while engineering students can experiment with building structures without the risk of real-world consequences. These immersive learning experiences not only make education more engaging but also help students retain information more effectively (Vermeulen & Volman, 2024).

Additionally, AI technologies facilitate continuous assessment and feedback, allowing educators to monitor student progress in real-time and adjust their teaching strategies accordingly. This dynamic interaction between students and AI systems fosters a more responsive and supportive educational environment, ultimately leading to higher educational standards and better learning outcomes (Su & Zhong, 2022). Accessibility of knowledge is another area where AI educational technologies have a profound impact. These technologies democratize education by making high-quality learning resources available to a broader audience, regardless of geographical or socioeconomic barriers. Online learning platforms powered by AI can offer courses from top universities and educators to students across the globe, providing them with opportunities that were previously inaccessible. AI-driven translation technologies break down language barriers, allowing students to access educational content in their native languages (Sunaiyah, Siswanto, Dermawan & Hasanah, 2022). Additionally, the ability of AI to analyze and summarize large volumes of information helps students navigate and understand vast amounts of data efficiently, making research and self-study more manageable. AI technologies can assist students with disabilities by providing customized support, such as speech-to-text applications for students with hearing impairments or adaptive learning technologies for students with cognitive challenges (Shadiey, Yi & Altinav, 2024). In light of the above background, this study therefore intends to investigate the perceived roles of AI-powered educational technologies on undergraduates' academic excellence in selected library schools in South-West, Nigeria.

Statement of the Problem

It is observed that the use of AI-powered educational technologies can potentially make students overly reliant on automated systems, leading to decreased motivation and engagement in active learning, and subsequently making them lazy. Additionally, these technologies pose significant security and privacy risks, as they often involve collecting and processing sensitive personal data, which can be vulnerable to breaches, and can lead to a loss of human decision-making, undermining the critical thinking and problem-solving skills that are essential in education. Moreover, in previous studies; Tutika, Kondavalasa and Patnaik (2024) examined the impact of AI on students' academic achievement in India; Crisha *et al.* (2023) examined Artificial Intelligence (AI) as a technology in increasing academic performance of BPEd students at Cebu Normal University, Tarik and Nian (2016) investigated the relationship between students' outcome of a particular course of their social backgrounds and use of Artificial Intelligence (AI). The present study aims to fill several gaps identified in previous studies (Tutika *et al.*, 2024; Crisha *et al.*, 2023; Tarik and Nian, 2016). However, these studies lack a specific focus on the Nigerian educational context, particularly in a university dedicated to education training like Tai Solarin University. This research intends to provide localized insights into how AI technologies can specifically influence undergraduate academic excellence in Nigeria, addressing contextual differences and potential unique challenges faced by Nigerian students. It is therefore imperative to investigate the perceived roles of AI-powered educational technologies on undergraduates' academic excellence in selected library schools in South-West, Nigeria.

Objectives of the Study

The general objective of the study is to investigate the perceived roles of AI-powered educational technologies on undergraduates' academic excellence in selected library schools in South-West, Nigeria. However, this study will also focus on the following specific objectives to:

1. examine the perceived roles of AI-powered educational technologies on undergraduates' academic excellence in selected library schools in South-West, Nigeria;
2. examine the perceived roles of AI-powered educational technologies on undergraduates' academic knowledge in selected library schools in South-West, Nigeria;
3. examine the perceived roles of AI-powered educational technologies on quality education among undergraduates in selected library schools in South-West, Nigeria;
4. examine the perceived roles of AI-powered educational technologies on knowledge accessibility among undergraduates in selected library schools in South-West, Nigeria.

Research Questions

The following research questions were carefully formulated to guide the study:

- i. What are the perceived roles of AI-powered educational technologies on undergraduates' academic excellence in selected library schools in South-West, Nigeria?
- ii. What are the perceived roles of AI-powered educational technologies on undergraduates' academic knowledge in selected library schools in South-West, Nigeria?
- iii. What are the perceived roles of AI-powered educational technologies on quality education among undergraduates in selected library schools in South-West, Nigeria?
- iv. What are the perceived roles of AI-powered educational technologies on knowledge accessibility among undergraduates in selected library schools in South-West, Nigeria?

Literature Review

Rahul (2020) examined the impact of Artificial Intelligence (AI) in the field of education. The study found that there were quite differences between the opinions of both students and teachers regarding the questions. This clearly showed the difference in the knowledge about the subject and its consequences which could be there. Firstly, more students considered the role of AI as an educator as software, whereas, teachers preferred it as a program. Then, more teachers were optimistic about AI increasing the cognitive abilities of the students, whereas more of the students preferred to be neutral. Moreover, the students seemed more assured that AI will help enhance the school experience of the students with disabilities than the teachers. Furthermore, both students and teachers almost equally agreed and disagreed regarding matching the level of motivation and inspiration as an educator does for AI. Then, students seemed to be equally distributed regarding the issue of misusing the personal information of students between yes, no, and maybe. Whereas, teachers seemed more inclined towards the option of maybe more than yes and no. Additionally, about the discipline issues, students seemed to be more confident about the capabilities of AI to tackle it than the teachers. Finally, there were way more students convinced that AI could replace teachers completely in the future.

Immaculada, Jose, Jose and Samuel (2023) analyse, quantitatively and qualitatively, the impact of AI components and computational sciences on student performance. For this purpose, a systematic review and meta-analysis have been carried out in WOS and Scopus databases. After applying the inclusion and exclusion criteria, the sample was set at 25 articles. The results support the positive impact that AI and computational sciences have on student performance, finding a rise in their attitude towards learning and their motivation, especially in the STEM (Science, Technology, Engineering, and Mathematics) areas. Despite the multiple benefits provided, the implementation of these technologies in instructional

processes involves a great educational and ethical challenge for teachers about their design and implementation, which requires further analysis from educational research. These findings are consistent at all educational stages.

Sayed, Heesup, Muhammad, Mohd, Muhammad, Marcelo and Antonio (2023) examined the impact of artificial intelligence (AI) on loss in decision-making, laziness, and privacy concerns among university students in Pakistan and China. Like other sectors, education also adopts AI technologies to address modern-day challenges. AI investment will grow to USD 253.82 million from 2021 to 2025. However, worryingly, researchers and institutions across the globe are praising the positive role of AI but ignoring its concerns. This study is based on qualitative methodology using PLS-Smart for the data analysis. Primary data was collected from 285 students from different universities in Pakistan and China. The purposive Sampling technique was used to draw the sample from the population. The data analysis findings show that AI significantly impacts the loss of human decision-making and makes humans lazy. It also impacts security and privacy. The findings show that 68.9% of laziness in humans, 68.6% in personal privacy and security issues, and 27.7% in the loss of decision-making are due to the impact of artificial intelligence in Pakistani and Chinese society. From this, it was observed that human laziness is the most affected area due to AI. However, this study argues that significant preventive measures are necessary before implementing AI technology in education. Accepting AI without addressing the major human concerns would be like summoning the devils. Concentrating on justified designing deploying and using AI for education is recommended to address the issue.

Hussain, Shamim, Sankar, Kumar, Samanta and Sakhare (2022) examined the effect of Artificial Intelligence on learning quality and practices in higher education. Computers have been employed in the field of education for many years. However, recent and current research within the field of artificial intelligence (AI) is having a positive impact on education. For example, there now exist ICAI (intelligent computer-assisted instruction) systems to teach or tutor many different subjects; several such systems are discussed herein. In addition to CAI (computer-assisted instruction) systems, we discuss the development of learning environments that are designed to facilitate student-initiated learning. A third major application is the use of expert systems to assist with educational diagnosis and assessment. During the course of our discussion of these three major application areas, we indicate where AI has already played a major role in the development of such systems and where further research is required to overcome current limitations. AI is perceived as a bane and also a boon to the education system and the human intellect. Optimistic utilization of AI in the classrooms is highly recommended by both teacher and student participants. It is also identified that the majority of teachers are more adaptable to embrace new technological changes than students. Further study on generation and geographic diversity based on teacher and student perceptions may support more effective implementation of AI in education.

Methods

Research Design

Descriptive survey research design was adopted for this study.

Population of the Study

The population of this research study comprised undergraduates in the Department of Library and Information Science in three (3) selected library schools in Nigeria, which are University of Ibadan, Lead City University and Tai Solarin University of Education.

Sample and Sampling Technique

Stratified random sampling technique was employed to capture the undergraduates in the selected universities. Due to the large population size of the undergraduates in each selected university, the researcher used 20% of the population. This is supported by the study of Agbonmiewalent (2007) who stated that “when he recommended that when the population runs into few hundreds use 30% or more, when several hundred use 25% and below, when few thousands use 20% and when several thousand use 10% or less”. As a result, the sample size for the study was 324.

Table 1: Distribution of Sample

S/N	Universities	Population	Sample (20%)
1	Tai Solarin University of Education	1,375	275
2	University of Ibadan	184	37
3	Lead City University	62	12
	Sample Size	1,621	324

Source: Student from each library school

Research Instrument

A self-designed and close-ended questionnaire was used as the instrument in gathering data from the respondents. The questionnaire comprised twenty (20) items related to the perceived roles of Artificial Intelligence (AI)-powered educational technologies on improving academic excellence, quality education, academic knowledge and knowledge accessibility of students.

Procedure for Data Collection

Three hundred and twenty-four (324) copies of questionnaires were distributed in the selected universities, which cut across first year to fourth year students within the period of 2 weeks. The completed questionnaire was retrieved on the spot, after giving respondents enough time to fill the questionnaires.

Method of Data Analysis

The Statistical Package for the Social Sciences (SPSS version 21) was used to arrange and illustrate the data using Pearson Product Moment Correlation (PPMC).

Results

RQ1: What are the perceived roles of AI-powered educational technologies on undergraduates’ academic excellence in selected library schools in South-West, Nigeria?

Table 2: Pearson Correlation Analysis of Research Question 1

		AI-powered educational technologies	Academic excellence
AI-powered educational technologies	Pearson Correlation	1	.687**
	Sig. (2-tailed)		.000
	N	324	324
Academic Excellence	Pearson Correlation	.687**	1
	Sig. (2-tailed)	.000	
	N	324	324

Table 2 presented result of Pearson correlation showing relationship between Artificial Intelligence (AI)-powered educational technologies and academic excellence. The result showed that there is a strong relationship between Artificial Intelligence (AI)-powered educational technologies and academic excellence ($r = .687^{**}$, $N=324$, $P < .05$). Hence, the perceived roles of AI-powered educational technologies significantly enhance undergraduates’ academic excellence in selected library schools in South-West, Nigeria. This is shown by its value of .000 which is less than the level of significance (0.05).

RQ2: What are the perceived roles of AI-powered educational technologies on undergraduates’ academic knowledge in selected library schools in South-West, Nigeria?

Table 3: Pearson Correlation Analysis of Research Question 2

		AI-powered educational technologies	Academic knowledge
AI-powered educational technologies	Pearson Correlation	1	.816**
	Sig. (2-tailed)		.001
	N	324	324
Academic	Pearson Correlation	.816**	1

knowledge	Sig. (2-tailed)	.001	
	N	324	324

Table 3 presented result of Pearson correlation showing relationship between Artificial Intelligence (AI)-powered educational technologies and academic knowledge. The result showed that there is a strong relationship between Artificial Intelligence (AI)-powered educational technologies and academic knowledge ($r = .816^{**}$, $N=324$, $P < .05$). Hence, AI-powered educational technologies are perceived to enhance undergraduates’ academic knowledge among undergraduates in selected library schools in South-West, Nigeria. This is shown by its value of .001 which is less than the level of significance (0.05).

RQ3: What are the perceived roles of AI-powered educational technologies on quality education among undergraduates in selected library schools in South-West, Nigeria?

Table 4: Pearson Correlation Analysis of Research Question 3

		AI-powered educational technologies	Quality education
AI-powered educational technologies	Pearson Correlation	1	.530**
	Sig. (2-tailed)		.010
	N	324	324
Quality education	Pearson Correlation	.530**	1
	Sig. (2-tailed)	.010	
	N	324	324

Table 4 presented result of Pearson correlation showing relationship between Artificial Intelligence (AI)-powered educational technologies and quality education. The result showed that there is a moderate relationship between Artificial Intelligence (AI)-powered educational technologies and quality education ($r = .530^{**}$, $N=324$, $P < .05$). Hence, Artificial Intelligence (AI)-powered educational technologies are perceived to enhance quality education among undergraduates in selected library schools in South-West, Nigeria. This is shown by its value of .010 which is less than the level of significance (0.05).

RQ4: What are the perceived roles of AI-powered educational technologies on knowledge accessibility among undergraduates in selected library schools in South-West, Nigeria?

Table 5: Pearson Correlation Analysis of Research Question 4

		AI-powered educational technologies	Knowledge accessibility
AI-powered educational technologies	Pearson Correlation	1	.650**
	Sig. (2-tailed)		.000
	N	324	324
Knowledge accessibility	Pearson Correlation	.650**	1
	Sig. (2-tailed)	.000	
	N	324	324

Table 5 presented result of Pearson correlation showing relationship between Artificial Intelligence (AI)-powered educational technologies and knowledge accessibility. The result showed that there is a strong relationship between Artificial Intelligence (AI)-powered educational technologies and knowledge accessibility ($r = .650^{**}$, $N=324$, $P < .05$). Hence, Artificial Intelligence (AI)-powered educational technologies are perceived to improve knowledge accessibility among undergraduates in selected library schools in South-West, Nigeria. This is shown by its value of .000 which is less than the level of significance (0.05).

Discussion

The survey found that the perceived roles of AI-powered educational technologies significantly enhance undergraduates’ academic excellence in selected library schools in South-West, Nigeria. AI-powered technologies in education have been shown to enhance academic excellence by providing personalized learning experiences, adaptive feedback, and opportunities for self-directed learning. This finding is consistent with the study of Tobler (2024), which highlighted how AI technologies contribute to tailored educational experiences that adapt to individual learning styles and paces, thereby improving overall academic performance. This finding is also supported by Rizvi (2023), who emphasizes AI’s role in optimizing learning outcomes and empowering both educators and students through personalized educational strategies.

The survey found that AI-powered educational technologies are perceived to enhance undergraduates’ academic knowledge among undergraduates in selected library schools in South-West, Nigeria. AI technologies leverage machine learning algorithms to analyze educational data, identify patterns, and personalize learning content, which enhances students' academic knowledge. This finding aligns with the research of Immaculada *et al.* (2023), who conducted a systematic review and meta-analysis demonstrating that AI and computational sciences positively impact student learning outcomes, particularly in STEM areas, by improving attitudes towards learning and motivation.

The survey found that Artificial Intelligence (AI)-powered educational technologies are perceived to enhance quality education among undergraduates in selected library schools in South-West, Nigeria. AI-powered educational technologies contribute to quality education by offering interactive and engaging learning experiences through technologies like virtual reality (VR) and augmented reality (AR). These technologies enable students to immerse themselves in realistic simulations and hands-on activities, thereby enriching the learning process. This finding is consistent with Vermeulen & Volman (2024), who discussed how AI-driven technologies enhance educational quality by facilitating more engaging and effective learning environments. This finding also correlates with Montgomery (2024), who discusses how AI enhances educational quality through interactive and engaging learning environments that cater to diverse learning styles and needs.

The survey found that Artificial Intelligence (AI)-powered educational technologies are perceived to improve knowledge accessibility among undergraduates in selected library schools in South-West, Nigeria. AI technologies democratize education by breaking down geographical and socioeconomic barriers through online platforms and AI-driven translation technologies. These technologies provide access to high-quality educational resources and content in diverse languages, thereby enhancing knowledge accessibility. This finding resonates with the research of Sunaiyah *et al.* (2022), who highlighted how AI enhances accessibility by making educational content available to a broader audience and supporting diverse learning needs.

Conclusion

In conclusion, the integration of Artificial Intelligence (AI) into educational technologies has presented a transformative paradigm in the field of Library and Information Science (LIS). Throughout the exploration of AI-powered educational technologies, it became evident that these technologies play a crucial role in enhancing academic excellence, improving knowledge acquisition, enriching educational quality, and enhancing accessibility for LIS students. AI educational technologies have been shown to enhance academic excellence by offering personalized learning experiences tailored to individual student needs and learning styles. Through adaptive feedback mechanisms and personalized content delivery, AI technologies assist in refining students' understanding and mastery of complex subjects. AI technologies contribute significantly to improving academic knowledge among LIS students by leveraging machine learning algorithms to analyze educational data and predict learning patterns. This capability not only enhances students' retention of information but also fosters a deeper comprehension of theoretical concepts and practical applications within the field. In addition, AI educational technologies enhance the overall quality of education by creating interactive and immersive learning experiences. Technologies such as virtual reality (VR) and augmented reality (AR), powered by AI, provide students with realistic simulations and hands-on learning opportunities that transcend traditional classroom boundaries. AI educational technologies promote knowledge accessibility by breaking down barriers of geography and socioeconomics. Online platforms and AI-

driven translation technologies enable LIS students to access high-quality educational resources and content in their native languages, thereby democratizing education on a global scale.

Recommendations

Based on the findings, it was recommended that lecturers should embrace professional development opportunities focused on AI literacy and integration into curriculum planning; continuous training will empower educators to leverage AI technologies effectively to enhance teaching methodologies and student engagement. Universities should invest in robust AI infrastructure and platforms that support personalized learning experiences and adaptive educational technologies; universities should prioritize resources for AI research and development to stay at the forefront of educational innovation. Educational policymakers should establish clear guidelines and ethical frameworks for the responsible implementation of AI in education; they should collaborate with educators, researchers, and industry experts to ensure AI technologies prioritize student privacy, equity, and inclusivity. Researchers should conduct longitudinal studies to evaluate the long-term impact of AI on student learning outcomes and educational equity; research efforts should focus on assessing the effectiveness of AI technologies across diverse educational settings and student populations. Technology developers should enhance AI algorithms to better accommodate the diverse learning needs and preferences of students in different disciplines, including Library and Information Science; developers should prioritize user-centred design principles to create intuitive and accessible AI educational technologies. Students should engage actively with AI technologies as learning technologies and seek opportunities to provide feedback on their usability and effectiveness; they should advocate for inclusive AI solutions that address accessibility barriers and support diverse learning styles.

Implications

The findings of the study reveal significant implications for various stakeholders within the educational ecosystem, particularly in the context of Library and Information Science (LIS) education in South-West Nigeria. The integration of AI-powered educational technologies has the potential to revolutionize the way education is delivered and received, providing numerous benefits that can enhance the overall learning experience and outcomes for students. Firstly, for students, AI-powered educational technologies offer personalized learning experiences that cater to individual needs and learning styles. This personalization can lead to improved academic performance, as students receive tailored content and feedback that address their specific strengths and weaknesses. The ability of AI to analyze learning patterns and adapt instructional methods accordingly can help students better understand and retain complex concepts, ultimately fostering deeper knowledge and mastery of the subject matter. For educators, the adoption of AI technologies can significantly enhance teaching methodologies. AI technologies can assist in identifying learning gaps and providing real-time feedback, enabling educators to develop more effective and efficient teaching strategies. The use of AI

can also reduce the administrative burden on teachers by automating tasks such as grading and attendance tracking, allowing them to focus more on direct student engagement and support.

Furthermore, educational institutions stand to benefit from investing in AI infrastructure, as it can lead to more flexible and accessible education. By leveraging AI-driven platforms, universities can offer high-quality educational resources that are accessible to students regardless of their geographic location or socioeconomic status. This democratization of education can help institutions attract a diverse student body and promote an inclusive learning environment. Moreover, policymakers play a crucial role in ensuring the responsible implementation of AI in education. Establishing clear ethical guidelines and standards for the use of AI technologies is essential to protect student privacy and promote equity. Policymakers should collaborate with educators, researchers, and industry experts to develop policies that maximize the benefits of AI while addressing potential risks and challenges. The study also highlights the importance of ongoing research to evaluate the long-term impact of AI on educational outcomes. Researchers should conduct longitudinal studies to assess the effectiveness of AI technologies across different educational settings and student populations. Such research can provide valuable insights into how AI can be used to support diverse learning needs and improve educational equity.

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