Leveraging Artificial Intelligence for Enhanced Assessment and Feedback Mechanisms in Nigeria Higher Education System

Agbarakwe, Harriet Akudo., Chibueze, Ozioma Ogbonna

Department of Curriculum Studies & Educational Technology Faculty of Education University of Port Harcourt, Nigeria

DOI: https://dx.doi.org/10.47772/IJRISS.2024.809012

Received: 29 August 2024; Accepted: 03 September 2024; Published: 26 September 2024

ABSTRACT

This paper explores the inherent potentials of Artificial Intelligence (AI) in enhancing assessment and feedback mechanisms within Nigeria's higher education system. The traditional assessment methods in Nigerian institutions often suffer from issues like inconsistent grading, delayed feedback, and significant administrative burdens on educators, which impede timely student interventions. AI technologies, with their capabilities in automation, data processing, and pattern recognition, offer solutions by enabling efficient, equitable, and personalized assessment systems. Automated grading, intelligent tutoring systems, and adaptive learning platforms are among the AI tools discussed, highlighting their role in streamlining grading processes, providing tailored learning experiences, and ensuring academic integrity through AI-powered proctoring. Key research and reports, such as those by Eli-Chukwu et al., Baker & Smith, Popenici & Kerr, Holmes et al., and Seldon & Abidoye, were cited to provide a thorough knowledge of AI's influence in today's educational system. Despite these benefits, the paper also addresses significant challenges, including infrastructure deficits, high implementation costs, digital literacy gaps, and ethical concerns such as data privacy and algorithmic bias. The study advocates for strategic investments in educational technology, professional development, and the establishment of ethical and regulatory frameworks to mitigate these challenges. By prioritizing AI integration, Nigeria can enhance educational quality, promote inclusivity, and align with global trends in higher education innovation.

Keywords: Artificial intelligence, Enhanced assessment and Feedback mechanism in Higher Education.

INTRODUCTION

The field of higher education is rapidly changing due to technological breakthroughs with artificial intelligence (AI) emerging as a key player, the introduction of artificial intelligence (AI) into Nigeria's educational system presents hitherto unseen chances to improve feedback and assessment systems, tackling persistent issues with the effectiveness and quality of education. This study investigates how utilizing AI might improve learning outcomes and institutional efficacy in Nigeria's higher education system by transforming the evaluation and feedback procedures. There are a lot of drawbacks to the conventional techniques of assessment (Ijeoma, & Amaka,, 2023) used in Nigerian higher education, which mostly include paper tests and human grading.

These include inconsistent grading practices, a backlog of feedback, and an overwhelming administrative load on teachers (Eli-Chukwu, et al 2023). Timely interventions that could facilitate the learning and development of students are frequently impeded by such inefficiencies. These problems can be solved with the help of AI technologies because of its capacity for automation, pattern recognition, and data processing. Active learning requires immediate, direct feedback, which AI-enhanced evaluation systems can give pupils. Artificial intelligence (AI)-powered automated grading systems can quickly and reliably analyze vast amounts of student work, resulting in more equitable assessments and freeing up teachers from tedious work so they may concentrate on more important instructional activities (Baker & Smith, 2019). Additionally, AI systems may evaluate data on student performance to find areas of weakness in learning and provide customized teaching methods, enabling personalized learning pathways (Popenici & Kerr, 2017). These include inconsistent grading practices, a backlog of feedback, and an overwhelming administrative load on teachers (Eli-Chukwu,

et al 2023). Timely interventions that could facilitate the learning and development of students are frequently impeded by such inefficiencies.

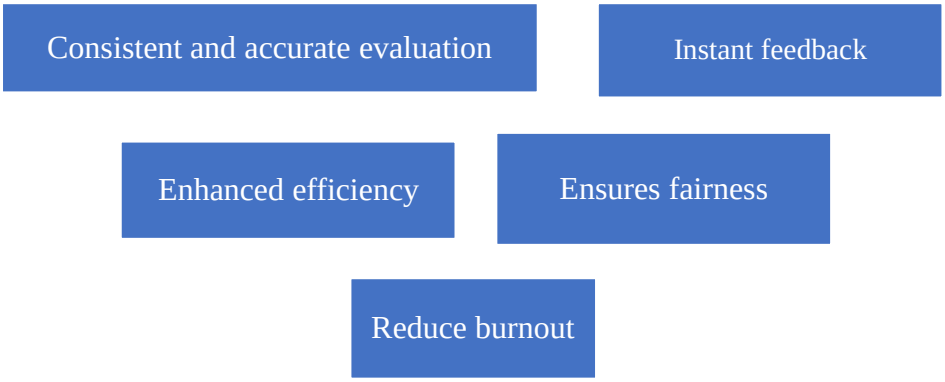
The report here adopts a review and analytical methodology, integrating existing literature, expert opinions, and earlier research to investigate the possible benefits and problems of artificial intelligence in education. The study cites works by Eli-Chukwu et al., Baker & Smith, Popenici & Kerr, Holmes et al., and Seldon & Abidoye to illustrate many advantages of AI in higher education. These include improved feedback and assessment via automated systems, tailored learning pathways, reduced administrative responsibilities for teachers, and support for inclusive education by catering to students' different learning requirements, including those with impairments. Nonetheless, by making wise investments in educational technology, increasing teacher ability, and forming public-private partnerships, these difficulties can be lessened. Nigeria may improve the quality of its education and catch up with international trends in higher education innovation by giving AI integration top priority. Furthermore, Nigeria is a country where the use of AI to inclusive education is very pertinent; AI technology can be developed to meet a variety of learning requirements, including those of children who have special needs. For example, adaptive learning platforms can accommodate varying learning styles and speeds, and speech recognition and natural language processing tools can help students with visual or hearing impairments (Holmes, Bialik, & Fadel, 2019). This inclusiveness is essential to advancing equitable access to high-quality education throughout the nation.

The use of AI in evaluation and feedback also brings up ethical issues that need to be resolved. Data privacy, algorithmic bias, and AI system openness are critical concerns. Building trust among stakeholders and defending student rights require that AI tools be developed and implemented with ethical standards in mind (Seldon & Abidoye, 2018). Thus, utilizing AI to improve feedback and assessment processes has enormous potential to revolutionize Nigeria's higher education sector. Educational institutions may enhance learning outcomes, promote inclusion, and stimulate innovation in educational techniques by tackling current issues and utilizing AI's potential. Higher education has been profoundly impacted by artificial intelligence (AI), especially in the area of evaluation.

Some AI Tools Deployed in Higher Education for Assessment

AI technologies are revolutionizing assessment procedures in higher education by offering quick, individualized, and equitable assessment techniques. Some of the major AI applications that are improving assessment are adaptive learning platforms, learning analytics, AI-powered proctoring tools, automated grading systems, intelligent tutoring systems, and NLP tools. Some of its features, advantages, and difficulties are listed below.

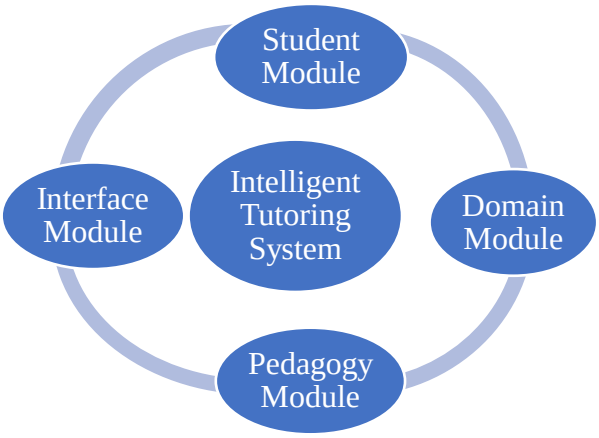
a. Automated Grading Systems



One of the most common uses of AI in higher education is automated grading systems. These systems assess student work, particularly essays and written responses, using machine learning algorithms and natural language processing (NLP). For instance, podia like Grade-scope use AI to streamline the grading process and offer prompt, reliable feedback (Muath, et al., 2019). Teachers' workloads are lightened and a standardized assessment is guaranteed through automated grading, which is especially useful in large classrooms.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue IX September 2024

b. Intelligent Tutoring Systems



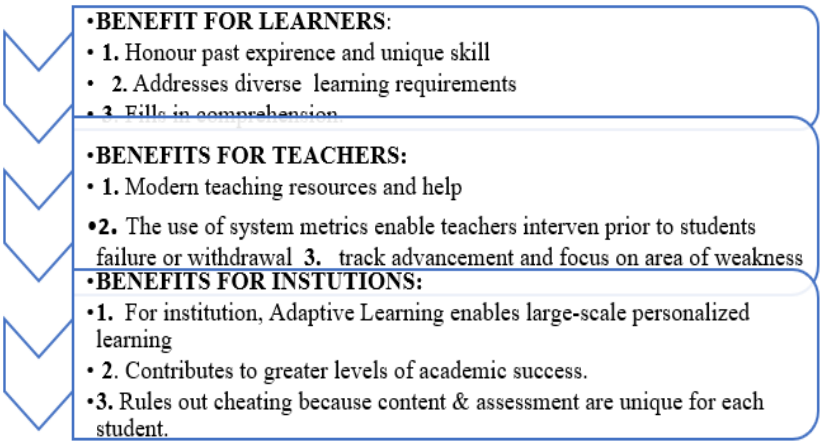
Intelligent Tutoring Systems (ITS) offer individualized training based on the requirements of each student. Platforms like MATHia from Carnegie Learning and ALEKS from McGraw-Hill are two examples. By providing tailored feedback and guidance, these systems adjust to the individual student's learning style and speed (Pane et al., 2023). In order to improve students' comprehension and memory of the subject matter, ITS not only evaluates student performance but also mentors them through individualized learning pathways.

c. AI-Powered Proctoring Tools

Source: Research.com

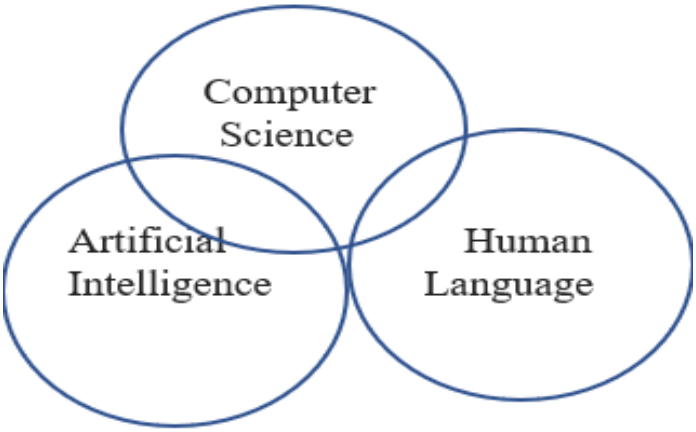
AI-powered proctoring technologies have proven indispensable for upholding academic integrity in the era of online learning. AI is used in proctoring and honorlocking tools to keep an eye on students while they take tests. To identify possible cheating, these techniques use environmental scanning, keystroke analysis, and facial recognition (Cidalia et al., 2023). AI proctoring increases the viability of distant learning by ensuring the legitimacy of online tests.

d. Adaptive Learning Platforms



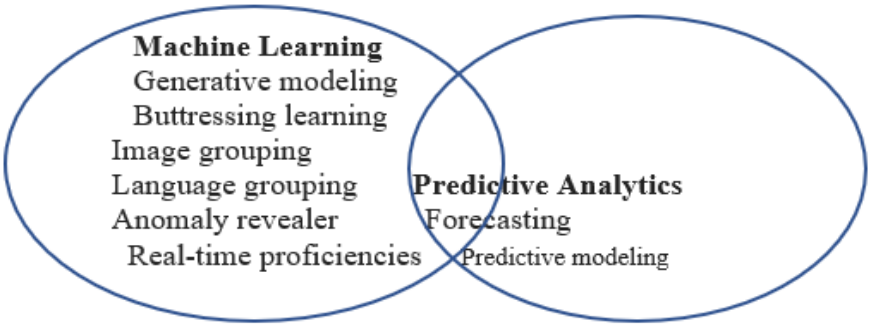
Adaptive learning platforms like Knewton and Smart Sparrow use AI to provide personalized learning experiences. These platforms continuously assess student performance and adjust the difficulty and type of content accordingly. For example, Coursera's adaptive learning system tailors course material to fit the learner's pace and comprehension level, ensuring a more effective learning experience (Siemens et al., 2023). Adaptive learning systems help identify learning gaps and offer targeted feedback to address them.

e. Natural Language Processing (NLP) Tools



NLP tools are crucial for assessing open-ended responses and essays. Platforms like Grammarly and Turnitin's Revision Assistant analyze the syntax, grammar, and content of student writing. These tools provide detailed feedback on writing quality, coherence, and argumentation (Yang & Liu, 2023). By offering specific and actionable feedback, NLP tools help students improve their writing skills and critical thinking abilities.

f. Learning Analytics and Predictive Modeling



Learning analytics and predictive modeling tools analyze educational data to envisage student outcome and identify at-risk students. Tools like IBM's Watson Education and Microsoft's Azure Machine Learning use AI to process data from learning management systems (LMS), identifying patterns and trends (Huang, & Yang, 2019).). Predictive analytics help instructors arbitrate early, providing the necessary assistance to learners who may be stressed.

Challenges of AI Tools deployed in Assessment

While AI tools offer significant benefits, their integration into higher education assessment also presents challenges. One major concern is the ethical implications, including data privacy and algorithmic bias. Assuring that AI schemes are clear, fair, and respect student privacy is crucial (Crompton, & Burke, 2023). Furthermore, the accuracy of AI tools is dependent on the quality of the data on which they are trained, demanding frequent updates and enhancements. The use of AI in evaluation necessitates significant investment in infrastructure and professional development. Educators require training to effectively use AI tools and comprehend their results. Institutions must overcome the digital gap so that all students have equal access to AI-enhanced learning resources (Luckin et al., 2022). As a result, overcoming the ethical, infrastructure, and training difficulties connected with their adoption is critical to maximizing their potential. As AI advances, its

incorporation into higher education evaluation is projected to become more sophisticated, hence improving learning outcomes and educational fairness.

Challenges associated with Implementing AI Tools in Nigeria's Higher Education System

The incorporation of Artificial Intelligence (AI) tools in advanced education has the possibility to transform teaching, learning, and assessment processes. Implementing AI tools in Nigeria's higher education system presents numerous challenges, including infrastructure deficits, high costs, digital literacy gaps, data privacy concerns, algorithmic bias, regulatory issues, socio-economic inequality, and cultural resistance. Handling these problems needs a complex method involving substantial investment in infrastructure and training, the advancement of strong authorized and controlling outlines, efforts to connection the digital gulf, and strategies to manage cultural change.

a. Infrastructure Deficits

The lack of proper technology infrastructure in many higher education institutions in Nigeria is one of the main problems. For AI tools to be deployed effectively, modern computer systems, strong IT support, and dependable internet access are necessary. Regretfully, the deployment of AI technologies is severely hampered by the outdated hardware, inadequate bandwidth, and frequent power outages that plague many Nigerian universities (Adigun and Okebukola, 2023). Budgetary restrictions frequently restrict the expanse that can be invested in infrastructure upgrades.

b. High Implementation Costs

The costs associated with acquiring, implementing, and maintaining AI tools can be prohibitive for many institutions in Nigeria. These costs include purchasing software licenses, investing in hardware, and training staff to use new technologies. Given the limited financial resources available to many higher education institutions in Nigeria, prioritizing such investments can be challenging (Olaniyan & Okafor, 2022). Additionally, the ongoing maintenance and updates necessary to keep AI systems functional and effective add to the financial burden.

c. Digital Literacy and Training

The successful use of AI gears requires a certain level of digital literacy among educators and students. In Nigeria, there is a substantial gap in digital skills, particularly among older faculty members who may be resistant to adopting new technologies. Comprehensive training programs are necessary to arm teachers with the skills needed to infuse AI into their teaching and assessment practices effectively (Chigbundu, & Oluwabiyi, 2023). However, developing and delivering these training programs is itself a resource-intensive process.

d. Data Privacy and Security Concerns

AI tools often trust on huge datasets to function effectively, raising concerns about data privacy and security. In Nigeria, there is a lack of robust legal frameworks and policies to protect the personal data of students and staff. This lack of regulation makes it challenging to ensure that AI systems comply with privacy standards and protect sensitive information from breaches and misuse (Temitope, O. A., 2024). Institutions must establish strong data governance policies to safeguard against these risks.

e. Algorithmic Prejudice and Fairness

AI systems may accidentally perpetuate biases in their training data, resulting in unfair or discriminating outcomes. In the context of education, this could imply biased exams and feedback that disproportionately harm specific student groups. To address algorithmic bias, AI systems must be carefully designed and continuously monitored, as well as efforts made to provide diverse and representative training data (Qaisar & Noman, 2024). However, many Nigerian institutions lack the necessary skills and resources to implement such initiatives.

f. Regulatory and Ethical Challenges

In Nigeria, the creation of equivalent regulatory frameworks has lagged behind the quick development of AI technology. To guarantee moral behavior and accountability, the application of AI in education must be governed by precise norms and regulations. The use of AI tools could result in moral quandaries and abuse in the absence of such rules (Adewale, 2024). For AI to be responsibly adopted in higher education, a strong regulatory framework that tackles these concerns must be established.

g. Socio-Economic Inequality

The digital divide in Nigeria exacerbates the obstacles of using AI in higher education. Due to socioeconomic gaps, not all students have equal access to the essential technology and internet connectivity for successful use of AI tools. This inequality can lead to further marginalization of disadvantaged students, undermining the potential benefits of AI in creating equitable educational opportunities (Desmond, & Endurance, 2022). Addressing these disparities requires targeted interventions and policies to bridge the digital divide.

h. Cultural Resistance to Change

Cultural attitudes towards technology and change can also pose significant barriers. There is often resistance from faculty and administration who are accustomed to traditional methods of teaching and assessment. Overcoming this resistance requires not only training and education but also a cultural shift towards embracing technological innovation in education (Ofomegbe, & Oroboh 2014) Change management strategies are essential to foster acceptance and integration of AI tools within institutions. By tackling these obstacles, Nigerian higher education institutions can harness the transformative potential of AI to enhance teaching, learning, and assessment.

Perceived implication for The Implementations and Integration of AI for Assessment and Feedback in Higher Education

The integration of AI for evaluation and feedback in higher education has far-reaching ramifications for a variety of stakeholders, including students, educators, institutions, and policymakers. This paper explains the consequences, focusing on both the potential benefits and limitations of incorporating AI technologies into advanced training.

a. Enhanced Efficiency and Consistency in Assessment

One of the most notable implications of AI integration in assessment is the improved efficiency and consistency it offers. AI tools can process and grade large volumes of student work quickly, reducing the time and labor required from educators. Automated grading systems, such as Gradescope and Turnitin's Revision Assistant, employ machine learning algorithms to evaluate written assignments, providing consistent and objective feedback (Nguyen et al., 2022). This consistency helps ensure fairness in grading, minimizing human bias and errors. Furthermore, AI tools may handle laborious and time taking events, releasing educators to concentrate on more important parts of teaching, such as curriculum development and tailored student support. This move can improve the overall quality of education by giving educators more time to engage with students and address specific learning needs.

b. Personalized Learning and Feedback

AI-driven evaluation systems have the ability to provide highly tailored learning experiences. Intelligent tutoring systems (ITS) and adaptive learning platforms, such as Carnegie Learning's MATHia and Knewton, modify lessons to individual student preferences based on real-time performance data. These systems provide rapid, tailored feedback, allowing students to understand their abilities and desires (Pane et al., 2022). AI systems may cater to varied learning styles and paces by modifying information and training, enabling greater understanding and retention of material. Personalized feedback also encourages students to take control of their study. With extensive insights into their performance, students can identify areas for development and seek additional resources or assistance as needed. This proactive approach to learning promotes self-regulation and

intrinsic motivation, which are critical qualities for lifelong learning.

c. Data-Driven Decision Making

The use of AI in assessments generates massive volumes of data that can be used to inform decision-making at all levels. Learning analytics and predictive modeling tools, such as IBM Watson Education and Microsoft Azure Machine Learning, use data from learning management systems (LMS) to uncover trends and patterns in student performance (Huang et al., 2019). This data-driven approach allows educators and administrators to make more informed decisions about curriculum design, teaching tactics, and budget allocation. For example, predictive analytics can detect at-risk kids early on, allowing institutions to act with targeted support services. Institutions can enhance retention and graduation rates by taking proactive steps to address learning problems. Furthermore, data insights can identify effective teaching techniques and opportunities for professional development, allowing educators to continuously enhance their teachings.

d. Challenges of Algorithmic Bias and Fairness

While AI has obvious benefits, its deployment in evaluation and feedback presents considerable hurdles. One key risk is algorithmic bias, which can be caused by skewed training data or poor algorithm design. AI systems educated on data containing existing prejudices may perpetuate those biases in their assessments, resulting in biased outcomes for specific student groups (Qaisar & Noman, 2024). If the training data is not diverse, an AI program may unfairly penalize pupils from underrepresented backgrounds. Transparency in AI decision-making processes can help build trust and accountability by ensuring that stakeholders understand how assessments are conducted and decisions are made. To mitigate algorithmic bias, AI systems must be developed and tested using diverse and representative datasets. Continuous monitoring and evaluation of AI tools is also required to identify and address any biases that may arise.

e. Ethical and Privacy Concerns

AI use in education poses ethical and privacy concerns, notably with the collecting and use of student data. AI systems frequently require access to massive amounts of private data to function well, raising concerns to student confidentiality and data security. Data breaches and the exploitation of sensitive information are possible in the absence of strong legal frameworks and data governance regulations (Ogunleye & Adewumi, 2023). To address these issues, institutions must employ strict data protection procedures and follow applicable privacy rules. Clear standards for data collection, storage, and utilization should be implemented to ensure that student data is managed appropriately and ethically. Educating students and instructors on data privacy and security is also critical for cultivating a culture of trust and accountability.

f. Financial and Infrastructural Barriers

Implementing AI tools in higher learning requires significant financial investment and infrastructural support. The costs associated with acquiring, deploying, and maintaining AI technologies can be prohibitive for many institutions, particularly those in low-resource settings. Additionally, upgrading technological infrastructure, such as internet connectivity and hardware, is necessary to support AI implementation (Adigun & Okebukola, 2023). Institutions must carefully consider the return on investment when adopting AI tools, balancing the potential benefits against the costs. Public and private partnerships, as well as government funding, can play an essential role in supporting the adoption of AI in teaching. Moreover, strategic planning and phased implementation can help institutions manage costs and infrastructure upgrades more effectively.

g. Impact on Educator Roles and Professional Development

The incorporation of AI in assessment and response is likely to transform the roles of educators, requiring new skills and competencies. Educators must be proficient in using AI tools and interpreting their outputs to effectively incorporating these technologies into their teaching performance. This shift necessitates inclusive expert expansion programs to arm instructors with the necessary digital literacy and technical skills (Chigbundu, & Oluwabiyi, 2023). Moreover, educators will need to adapt to new pedagogical approaches that

leverage AI-driven insights. This transition may involve rethinking traditional assessment methods and exploring innovative instructional strategies. Institutions must provide constant support and training to help instructors traverse these changes and exploit the advantages of AI in enhancing teaching and learning.

h. Equity and Access Considerations

Ensuring reasonable contact to AI tools is a critical consideration for their implementation in higher education. Socio-economic disparities and the digital divide can exacerbate inequalities, limiting permission to the essential technology and funds for some students (Adekunle & Oluwaseun, 2023). Institutions must address these disparities by providing access to devices, internet connectivity, and support services to ensure that all students can benefit from AI-enhanced learning. Additionally, inclusive design principles should guide the development and deployment of AI tools to accommodate diverse student needs. This approach includes ensuring accessibility for students with disabilities and considering the varied contexts in which students learn. By prioritizing equity and inclusivity, institutions can ensure that AI tools enhance educational opportunities for all students.

CONCLUSION

AI-driven tools such as automated grading systems, intelligent tutoring systems, AI-powered proctoring tools, and adaptive learning platforms offer substantial benefits. These technologies can streamline the grading process, offers tailored learning acquisition, ensure academic integrity, and generate valuable data for informed decision-making. AI's ability to provide quick, detailed feedback empowers students to take charge of their learning and encourages a culture of continual development. However, the successful use of AI in Nigeria's higher education system is not without challenges. Infrastructure restrictions, particularly in terms of internet connectivity and contemporary computer systems, provide considerable challenges. Financial constraints impede the adoption of AI technology since many organizations lack the means to invest in the requisite hardware, software, and training.

Furthermore, digital literacy among instructors and students is critical for efficiently using AI systems, demanding extensive training programs. Data gathering and algorithmic bias raise ethical and privacy concerns, which must also be carefully considered. To preserve confidence and adhere to ethical standards, AI programs must be certified as transparent, fair, and secure. Overall, using AI to improve evaluation and feedback processes in Nigeria's higher education system provides a road to considerable improvements in educational quality and equity.

Suggestions

i. **Infrastructure Investment:** The Nigerian government, in collaboration with private sector partners, should prioritize investment in technological infrastructure. Upgrading internet connectivity, modernizing computer systems, and ensuring reliable power supply are critical steps toward creating an environment conducive to AI implementation. Public-private partnerships can play a major part in mobilizing the necessary resources.

ii. **Funding and Resource Allocation:** Institutions should explore diverse funding sources to support the adoption of AI technologies. Government grants, international aid, and partnerships with tech companies can provide financial assistance. Strategic resource allocation, focusing on phased implementation and scalable solutions, can help manage costs properly.

iii. **Professional Development and Training:** Comprehensive training programs are required to provide instructors and students with the digital literacy and technical abilities necessary to properly use AI tools. Institutions should invest in continual professional development by providing workshops, courses, and support resources to help instructors incorporate AI into their teaching practices.

iv. **Ethical and Controlling Frameworks:** Establishing strong ethical rules and regulatory frameworks is critical for governing the use of AI in learning. Policymakers should set explicit norms for data privacy,

security, and algorithmic openness. Continuous monitoring and evaluation of AI systems can assist uncover and resolve biases, as well as assure ethical compliance.

v. **Equity and Access Initiatives:** To bridge the digital rift, targeted initiatives are needed to ensure equitable access to AI-enhanced learning resources. Providing affordable devices, internet subsidies, and support services can help disadvantaged students benefit from AI tools. Inclusive design principles should guide the development of AI systems to accommodate diverse learning needs and contexts.

vi. **Research and Innovation:** Encouraging research and innovation in AI for education can drive the development of contextually relevant solutions. Nigerian institutions should collaborate with international researchers, tech companies, and educational organizations to explore innovative applications of AI. Research funding and incentives can stimulate local innovation and contribute to the global discourse on AI in education.

REFERENCES

1. Adewale, A. (2024). Ethical Issues in Artificial Intelligence Adoption in African Higher Education Instructions in Nigeria. African Journal of Information and Knowledge Management. Vol. 3 (2) 22 – 33 https://www.researchgate.net>
2. Adigun, O. J., & Okebukola, P. A. (2023). Technological Infrastructure in Nigerian Universities: Challenges and Solutions. Journal of Higher Education Policy and Management, 45(1),56-70. https://www.researchgate.net>.
3. Baker, T., & Smith, L. (2019). Educ-AI-tion Rebooted? Exploring the future of artificial intelligence in schools and colleges. London: NESTA. https://www.nesta.org.uk.
4. Chigbundu, M.C., Oluwabiyi, M.O. (2023). Digital Literacy, Perception and Challenges of eLearning among Undergraduates in Public Universities in Nigeria. November 2023, 9(11):107-115 https://www.nesta.org.uk.
5. Cidalia, O., Rui., S. Borges A., & Rodrigues, M. M., (2023). Artificial Intelligence: threat or asset to academic integrity? A bibliometric analysis Proctoring Tools. International Journal of Educational Technology, https://www.researchgate.net/publication/376852174
6. Crompton, H., Burke, D. Artificial intelligence in higher education: the state of the field. Int J Educ Technol High Educ 20, 22 (2023). https://doi.org/10.1186/s41239-023-00392-8
7. Desmond, O. O., & Endurance, E., (2022) Bridging the Digital divide in Nigeria Journal of Development Communication, Volume 33 (1) :45-54.https://www.researchgate.net>.
8. Eli-Chukwu N. C., Igbokwe, I. C., & Ifebude, D. N., (2023). Challenges confronting e-learning in higher education institutions in Nigerian amid Covid-19. Journal of Applied Research in Education, 15 (1) 238-253, 2023.Sscholar.google.com.
9. Holmes, W., Bialik,M., & Fadel, C., (2019) Atificial Intelligence in Education. Promise and Implications for Teaching and Learning. Publisher Center for Curriculum Redesign ISBN: 9781794293700. Https://www.researchgate.net
10. Huang,A., & Yang, J., (2019). Predicting students 'academic performance by using educational big data and learning Analytics: evaluation of classification methods and learning logs DOI: 10.1080/10494820.2019.1636086
11. Ijeoma, C. & Amaka, C, O., (2023)Transition from Conventional Assessment to Authentic Assessment Methods in Tertiary Education 21st Century Classroom in South-East Geo-Political Zone DOI: 10.37745/bje.2013/vol11n104662
12. Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2022). Intelligence Unleashed: An Argument for AI in Education. London: Pearson. https://www.researchgate.net>
13. Muath, A. Alkhalaf, A., & Hussam, A. (2019). Automated Grading Systems for programming assignments: A Literature Review DOI: 10.14569/IJACSA2019.0100328. https://www.researchgate.net>.
14. Nguyen, P.V., Aubry, C., Boudaoud, N., & Gaubert, A., (2022) Higher Education Policy and Management in Post-Pandemic. https://doi.org/10.1177/14782103231158171
15. Ofomegbe, D., & Oroboh A. U., (2014). Cultural factors Affecting Integration of Technology in Media

Education in Nigeria. IGI Global, igi-global.com 30/07/22024.
16. Olaniyan, O., & Okafor, U. (2022). Financial Constraints and the Implementation of AI Tools in Nigerian Higher Education. Nigerian Journal of Educational Research and Evaluation, 22(3), 89-105. https://journal.theasseren.org.n...
17. Pane, J. F., Griffin, B. A., & McCaffrey, D. F. (2022). The Impact of Intelligent Tutoring Systems on Learning: A Meta-Analysis. Educational Research Review, 34, 100-115.
18. Popenici, S. A. D., & Kerr, S. (2017). Exploring the impact of artificial intelligence on teaching and learning in higher education. Research and Practice in Technology Enhanced Learning, 12(1), 22.
19. Qaisar, N., & Noman, A. (2024). The Ethical Imperative: Addressing Algorithmic Bias in AI-Driven Educational Tools. https://www.researchgate.net>.
20. Seldon, A., & Abidoye, O. (2018). The Fourth Education Revolution: Will Artificial Intelligence Liberate or Infantilise Humanity? University of Buckingham Press.
21. Siemens, G., Baker, R. S. J. d., & Buckingham Shum, S. (2023). Learning Analytics in Higher Education: Using AI to Enhance Teaching and Learning. Journal of Learning Analytics, 10(2), 34-50. https://learning-anayytics.info
22. Temitope, O. A. (2024) National Interest and The Future of Ai-Enhanced User Authentication in Educational Assessments, Acta Electronica Malaysia 8(2):49-53 DOI: 10.26480/aem.02.2024.49.53
23. Yang, Z., & Liu, Q. (2023). Natural Language Processing Tools in Higher Education: Applications and Challenges. Journal of Educational Technology Research, 26(1), 67-83.