UNIVERSITY of KIGALI

BOOK OF ABSTRACTS

INTERNATIONAL CONFERENCE ON ARTIFICIAL INTELLIGENCE AND EDUCATION

VENUE: Lemigo Hotel, Kigali, Rwanda

DATE: December 8 – December 12, 2025

Gold Sponsor: AFREXIMBANK

Silver Sponsors: CAVALLI BUSINESS & INVESTMENT GROUP; D.T. Autocafe

Partner: COEASU

Table of Contents

AI and Education

Paper 1 : The Next Frontiers of AI in Education: Towards Cognitive, Ethical, and Inclusive Learning Systems

Authors: Ogechi Adeola & Olaniyi Evans

Affiliation: University of Kigali, Kigali, Rwanda, School of Management and Social Sciences, Lagos, Nigeria

Abstract : The rapid evolution of Artificial Intelligence (AI) has transformed learning environments, yet persistent inequities and ethical concerns limit its inclusive potential. While AI can personalize learning to cognitive and emotional needs (Cabero-Almenara & Barroso-Osuna, 2025), many implementations reproduce structural biases, underscoring the need for culturally responsive and learner-centered design (Murari & Parmar, 2025). Recent research highlights equitable AI adoption in early and primary education (Alawneh et al., 2024) and emphasizes ethical governance frameworks that balance automation with human judgment (Leong & Zhang, 2025). This paper synthesizes emerging scholarship to propose the Frontier AI-in-Education Framework (FAIEF): an integrative model linking cognitive science, ethics, and inclusion to reimagine AI as a co-evolutionary partner in education that enhances learner autonomy, transparency, and accessibility. A narrative synthesis and comparative review of literature (2019–2025) from Springer, IGI Global, IEEE Xplore, SciELO, and SSRN informed the analysis, identifying ten frontier domains such as inclusive AI design, adaptive learning systems, and ethical governance. The FAIEF model articulates three interlinked dimensions (Cognitive Depth, Ethical-Equity Spectrum, and Systemic Impact) offering a structured approach to developing ethical and inclusive AI-driven learning ecosystems. By aligning emerging AI innovations with global educational priorities (Lata, 2024), the framework contributes to the realization of the United Nations' Sustainable Development Goal 4: Inclusive and Equitable Quality Education for All.

Paper 2 Title: ADOPTION OF ARTIFICIAL INTELLIGENCE FOR ENHANCING DATA PROCESSING AND DATA MANAGEMENT IN GOVERNMENT OWNED COLLEGES OF EDUCATION IN BENUE STATE

Authors: OMEDE; UGBEDE DAVID

Affiliation: Department of Agricultural Education, Federal College of Education, Odugbo Benue State Nigeria | EMAIL: ugbedeomede@fceodugbo.edu.ng PHONE NUMBER: +2348059954970

Abstract: This paper assessed the adoption of artificial intelligence (AI) for enhancing data processing and data management in government owned Colleges of Education in Benue State. A descriptive survey research design was used and the population of the study consisted of administrators, ICT personnel, academic staff, and students. AI has the potential to improve efficiency, accuracy, and security in data processing and data management, its adoption in these institutions remains limited. Therefore, the paper recommended that government should allocate more funds to support AI adoption in colleges of education by providing financial resources for infrastructure development, training, and AI software acquisition. Improved ICT infrastructure, enhanced data security measures among others.

Paper 3 Title: AI AND THE VISUAL ARTS' EDUCATION: ISSUES IN A DEVELOPING LAGOS ENVIRONMENT

Authors: Adeyemi, Iranlade Festus (PhD)

Affiliation: Federal College of Education (Technical) Akoka, Yaba- Lagos, Nigeria

Abstract: The crux of this paper harps on the impact of artificial Intelligence (AI) and its implications on Visual Arts Education in a developing landscape of Lagos, Nigeria. The paper recognises the visual arts' influence on teaching the visual arts' technical dexterity, cognitive, and motor skills in Nigeria and Africa. The skills enable trainees to be creative and to think outside the box in other routes while manipulating varying materials, techniques, and strategies. Embedding AI into the visual arts will assist learners in applying approaches that will be beneficial to sharpened creative trajectories. In Lagos, an emerging landscape, visual arts instruments, tools, and facilities needed to support learners and instruction in developing visual arts advancement are lacking and expensive. Besides, the emerging space of Lagos is challenged in the application of AI and limited in the increasing importance of multimedia benefits in the contemporary art world. The paper canvases that in the emerging landscape of Lagos needs the curricula,

resources to fund AI-powered visual arts trainees and trainers should be available and adequately utilised to meet today's educational demand.

Paper 3 Title: AI-POWERED DATA SIMULATION'S IMPACT ON SELF-EFFICACY FOR TEACHING ECONOMETRICS: A QUASI-EXPERIMENTAL STUDY OF PRE-SERVICE TEACHERS IN KADUNA STATE

Authors: Abubakar Mansur Danjeka

Affiliation:

Abstract: This study investigated the impact of an AI-powered data simulation (AI-DS) intervention on the self-efficacy of pre-service economics teachers for teaching econometrics. A quasi-experimental, non-equivalent control group pre-test/post-test design was adopted. The study population comprised all 1,897 NCE Economics pre-service teachers from Federal College of Education (FCE), Zaria, and Kaduna State College of Education (KSCOE), Gidan Waya. Using the Research Advisors (2006) table, a sample of 322 pre-service teachers was selected through multi-stage sampling. The experimental group (n=161, from FCE Zaria) was exposed to an 8-week intervention using an AI-DS tool, while the control group (n=161, from KSCOE Gidan Waya) received traditional lecture-based instruction. The "Teaching Econometrics Self-Efficacy Scale" (TESES), a validated instrument with a reliability coefficient of alpha = 0.89, was used for data collection. Data were analyzed using descriptive statistics, Analysis of Covariance (ANCOVA), and independent samples t-test. The findings revealed a statistically significant positive effect of the AI-DS intervention on pre-service teachers' self-efficacy ($F(1, 319) = 94.72$, $p < 0.001$, $eta^2 = 0.229$). The adjusted post-test mean score of the experimental group ($M = 4.31$) was significantly higher than that of the control group ($M = 3.18$). However, the study found no statistically significant difference in post-test self-efficacy scores based on gender within the experimental group ($t(159) = 0.45$, $p = 0.653$). The study concludes that AI-powered simulations are a potent pedagogical tool for enhancing teacher self-efficacy in complex subjects. It is recommended that Colleges of Education integrate AI-driven simulations into their econometrics curriculum and that the National Commission for Colleges of Education (NCCE) support this pedagogical shift.

Paper 4 Title: ASSESSING THE BENEFITS AND CHALLENGES OF AI INTEGRATION IN VOCATIONAL AND TECHNICAL EDUCATION IN NIGERIA.

Authors: CIRFAT; Yaknan Bulus; Business Education (BED)

Affiliation: cirfaty@gmail.com | College of Education, Gindiri, Plateau State, Nigeiria | BEING A PAPER PRESENTED AT THE UNIVERSITY OF KIGALI ARTIFICIAL INTELLIGENCE CONFERENCE ON THE 20TH TO 24 OCTOBER, 2025

Abstract: The integration of Artificial Intelligence (AI) into Vocational and Technical Education comes with transformative opportunities and complex challenges for Nigeria's education and workforce development. This study assesses a plethora of benefits including personalized learning, automation of instruction, and enhanced skill acquisition alongside some pressing concerns such as inadequate infrastructure, digital inequality, and ethical implications. The research explores how AI can be strategically developed to align vocational education with industry demands. The study also identifies the institutional, technical, and socio-economic barriers that may hinder equitable implementation. The research provides recommendations for fostering inclusive, sustainable, and context-sensitive AI integration in VTE as well as leveraging AI for educational reforms and workforce preparation in Nigeria's unique socio-economic landscape.

Paper 5 Title: ASSESSMENT OF ARTIFICIAL INTELLIGENCE (AI) TOOLS UTILIZATION AMONG BUSINESS EDUCATION LECTURERS AND THEIR INFLUENCE ON INSTRUCTIONAL DELIVERY IN SOUTH-WEST NIGERIAN UNIVERSITIES

Authors: AJISAFE; OLATUNBOSUN EMMANUEL PHD

Affiliation: DEPARTMENT OF BUSINESS EDUCATION, | FACULTY OF VOCATIONAL AND TECHNICAL EDUCATION, | ADEYEMI FEDERAL UNIVERSITY OF EDUCATION, ONDO, | NIGERIA | ajisafeoe@afued.edu.ng; safebosun@gmail.com

Abstract: This study investigates the assessment of AI tools utilization among Business Education lecturers and their influence on instructional delivery in South-West Nigerian universities. A descriptive survey design was used with a population of 123 lecturers across the south-west geopolitical zone. A census sampling was adopted because of the population size. Data was collected with a questionnaire and was validated by three experts in ICT; while the reliability index yielded 0.78 coefficient using Cronbach alpha. Analysis was done using descriptive statistics, Pearson correlation, and regression techniques which revealed a low AI tools utilization, with AI-driven platforms like intelligent tutoring systems and virtual assistants being underused. A significant positive relationship was found

between AI utilization and improved instructional outcomes, including feedback mechanisms, content delivery and student engagement. The study recommended professional training, policy support and infrastructural development to enhance AI integration in Business Education

Paper 6 Title: ASSESSMENT OF MULTIMEDIA RESOURCES AVAILABILITY IN THE CONDUCT OF MICRO-TEACHING AMONG LECTURERS IN COLLEGES OF EDUCATION, NORTH-WEST, NIGERIA

Authors: Adamu Mohammed ASHIRU PhD

Affiliation: BY | 2 | Faculty of Education, Department of Curriculum and Instructions, Federal University of Education, Zaria-Nigeria | 1

Abstract: The study assessed multimedia resources availability in the conduct of micro- teaching among lecturers in Colleges of Education, North-west, Nigeria. The study consisted of five specific objectives among which are to: assess the availability of multimedia resources for microteaching in Colleges of Education, North-West, Nigeria. The study employed cross sectional survey research design with a population of 4499 lecturers with sample size of 354. Proportionate and simple random sampling techniques were used to select the sample. Multimedia Availability Observation Checklist (MMOC) was used in data collection. The research question was answered using percentage and frequency counts. The study multimedia resources are not adequately provided for the conduct of micro- teaching in Colleges of Education in North-West Nigeria. The study among others recommends that the government and educational stakeholders should increase funding for Colleges of Education in North-West Nigeria to ensure the procurement of adequate multimedia resources and also invest in ICT infrastructure, provision of digital libraries.

Paper 7 Title: ARTIFICIAL INTELLIGENCE AND THE FUTURE OF BIOLOGY TEACHING: CHALLENGES AND PROSPECTS FOR NIGERIAN TEACHER EDUCATION

Authors: Umar K.Y., [2]Abdullahi S.M., [3]Ali Z., [4]Umar M.

Affiliation: By | 1Umar K.Y., 2Abdullahi S.M., 3Ali Z., 4Umar M. 1,3,4Department of Biology Education, School of Science Education, Federal College of Education (Technical), Gombe, Nigeria | 2Department of Psychology/Guidance and Counselling Education, School of Education, Federal College of Education (Technical) Gombe, Nigeria. | Corresponding Author; email: kubrayahayau@fcetgombe.edu.ng | Phone: +2348036501593

Abstract: As Artificial Intelligence (AI) increasingly shapes global education, its integration into biology teaching has become essential for preparing future-ready educators. This paper explores the transformative potential of AI in biology education within the Nigerian teacher training context. It highlights how tools such as virtual laboratories, intelligent tutoring systems, and bio-informatics platforms can enrich teaching and foster inquiry- based learning. However, Nigeria's Colleges of Education face multiple challenges, including obsolete curricula, inadequate infrastructure, limited AI literacy among faculty, and policy gaps. Despite these constraints, the prospects are compelling: AI holds the potential to personalize learning, expand access, and strengthen pedagogical outcomes through innovation. The article advocates for urgent curriculum reforms, targeted capacity building, and multi-stakeholder collaboration involving regulatory agencies, EdTech partners, and policymakers. It concludes that integrating AI into biology teacher education is no longer optional, but a strategic imperative for national advancement in science education.

Paper 8 Title: ARTIFICIAL INTELLIGENCE IN VOCATIONAL EDUCATION: AN EMPIRICAL INVESTIGATION OF CHALLENGES, APPLICATIONS, SUSTAINABILITY AND IMPACT IN NIGERIA

Authors: Ibrahim Shuaibu; Usman Isah

Affiliation: Department of Education, Sule Lamido University, Kafin-Hausa | ibrahim.shuaibu@slu.edu.g | Department of Education, Sule Lamido University, Kafin-Hausa | usmanisah@slu.edu.ng

Abstract: This research examines the issues, use and effects of Artificial Intelligence (AI) on technical education in Nigeria through use of mixed research methods. The sample respondents include 50 qualitative participants and 350 quantitative respondents including lecturers, students, and administrators of vocational colleges. Specifically, the three problems investigated were the problems of AI integration, AI integration and its impact, and AI integration and its sustainability. The study hypotheses were quantitatively tested: AI has a positive effect on skills acquisition ($p < 0.01$, $r = 0.78$); Factors such as lack of funding and inadequate human capital act as a barrier to the plausible adoption of AI in Nigeria ($p < 0.05$, $\chi^2 = 13.42$); and Total AI's effects are subject to its sustainability measures such as revisions in policies ($p < 0.01$, $\beta = 0.65$). Findings supported rural areas and households adopted AI which improved skills delivery by 78%, infrastructure barriers were a key constraint – 67%. Apparently, the AI uptake was concave by fear of change, poor retraining, and

poor retraining opportunities for teaching and learning. Notably, 72% felt that AI will be sustainable if sufficient policies and funding support are in place. The research observes that AI has transformative possibilities for vocational education by bridging skill gaps, improving pedagogical productivity, and advancing learning as an outcome. However, infrastructural gaps, insufficient skills, and lack of willingness to embrace change also pose great threats. It recommends that the funding for infrastructure development, training of stakeholders and AI incorporation into the country's vocational education programs should be prioritized. These measures will guarantee effective and long-lasting incorporation of AI, therefore, deepening vocational education and workforce development in Nigeria.

Paper 9 Title: ASSESSING TEACHERS' READINESS TO INTEGRATE ARTIFICIAL INTELLIGENCE INTO TEACHER EDUCATION IN COLLEGE OF EDUCATION AKWANGA, NASARAWA STATE. NIGERIA

Authors: Yusufu Alfa Funmilayo; Gbande Kale Samson

Affiliation: Department of Geography1; Department of Economics2 | College of Education Akwanga, Nasarawa State | Email- funmialfa@gmail.com1 ; kalegbande0@gmail.com2

Abstract: Worldwide, Artificial intelligence technologies are increasingly influencing educational practices. For its effective integration in a teacher education program like College of Education Akwanga, understanding the preparedness of educators is critical. This study assesses the readiness of teachers to integrate Artificial Intelligence (AI) into teacher education programs in College of Education, Akwanga. The research examines teachers' knowledge and familiarity with AI tools, teachers' attitudes towards AI adaptation in teaching and learning, teachers' ability to incorporate AI tools into teaching and learning, teachers' willingness and readiness to integrate AI tools into teaching and learning, barriers and challenges, teachers' needs and support for effective integration. The study highlights the need for targeted professional development initiatives and provision of resources to facilitate smooth integration of AI in teacher education. The research provides recommendations for institutional support through training programs, and the development of strategies for integrating AI by policymakers.

Paper 10 Title: ASSESSING THE IMPACT OF AI-POWERED CHATBOTS AND VIRTUAL ASSISTANTS ON ACADEMIC ACHIEVEMENT OF STUDENTS IN NIGERIA COLLEGES OF EDUCATION

Authors: Abdulkarim Bala

Affiliation: Department of Educational Curriculum Studies | College of Education Waka-Biu, Borno State, Nigeria | abdulkarimbala75@gmail.com | 08030169576 |

Abstract: This study investigates the impact of AI-driven chatbots and virtual assistants on students' academic achievement in Colleges of Education in Nigeria. The research examines how these technologies are being used as educational support tools, focusing on their effectiveness in facilitating learning, providing real-time feedback, and enhancing student engagement. The study explores the role of chatbots in addressing frequently asked academic questions, delivering personalized academic assistance, and supporting continuous learning outside traditional classroom settings. It also assesses the extent to which virtual assistants contribute to improved academic performance by reducing cognitive overload and supporting self-paced learning. While the study finds that AI-driven tools offer several educational benefits including increased accessibility to learning resources and improved academic support it also identifies challenges such as limited access to digital devices, poor internet connectivity, and lack of awareness or training on the use of these technologies. The study concludes with practical recommendations for policymakers and educators to improve the integration of AI technologies in Nigerian Colleges of Education, including investment in infrastructure, digital literacy training, and localized AI content development. | Keywords: AI-driven chatbots, virtual assistants, academic achievement, technology, student achievement

Paper 11 Title: ASSESSING THE INTEGRATION AND IMPACT OF ARTIFICIAL INTELLIGENCE AND DIGITAL COMMUNICATION STRATEGIES ON TEACHING, LEARNING, AND ADMINISTRATIVE EFFICIENCY IN HIGHER INSTITUTIONS IN GOMBE STATE, NIGERIA

Authors: Umar Abdulkadir Abbare

Affiliation: By | College of Education and Legal Studies, Nafada, Gombe State Nigeria | umarabdulkadirabbare@gscoels.edu.ng | 07037873721

Abstract: This study investigated the scope, adoption challenges, and demonstrated impact of Artificial Intelligence (AI) and Digital Communication Strategies (DCS) across the core functions of Higher Institutions in Gombe State, Nigeria. The research addressed a critical gap in empirical evidence concerning the localized effect of EdTech in the North-Eastern Nigerian context. A Concurrent Convergent

Mixed-Methods Design was employed. Data were collected from a total sample of 450 participants, comprising students, academic staff, and administrators, selected across three major institutions in the state using stratified and purposive sampling techniques. Data instruments included structured questionnaires and semi-structured interviews. Key findings revealed a significant positive perception among stakeholders regarding the potential of AI and DCS to enhance teaching effectiveness (Mean = 4.2/5.0) and improve administrative efficiency (Mean = 4.1/5.0). However, the study also confirmed a low actual formal integration rate of advanced AI tools. The most dominant barriers identified were severe infrastructural deficits (unreliable internet and power supply), cited by over 85% of respondents, and a corresponding digital literacy gap among a majority of long-serving academic staff. The research concluded that a lack of comprehensive institutional policy was preventing the successful scaling of digital innovation. The findings offer immediate, evidence-based recommendations for policymakers in Gombe State to prioritize infrastructure and targeted capacity building to drive sustainable digital transformation in higher education.

Paper 12 Title: EFFECT OF AI-ASSISTED INSTRUCTION ON PRE-SERVICE MATHEMATICS TEACHERS' PEDAGOGICAL COMPETENCE AND ATTITUDE TOWARDS TECHNOLOGY INTEGRATION IN COLLEGES OF EDUCATION IN DELTA STATE

Authors: PEREKEME; Peresuode

Affiliation: Mathematics Department, College of Education, Warri | Email: princepppk1980@gmail.com. | Phone Number: +2348135071027

Abstract: This study investigated the impact of Artificial Intelligence (AI)-assisted instruction on the pedagogical competence and attitude toward technology integration of pre-service mathematics teachers in Colleges of Education in Delta State, Nigeria. Anchored in the Technological Pedagogical Content Knowledge (TPACK) framework and Bandura's Self-Efficacy Theory, the study sought to address a critical gap in empirical research on AI integration in Nigerian teacher education. Specifically, it aimed to determine whether structured exposure to AI tools during teacher training could enhance instructional readiness and technological receptivity among future educators. Two research questions guided the study, supported by two corresponding hypotheses.

A quasi-experimental, pretest-posttest control group design was employed. The sample consisted of 120 final-year pre-service mathematics teachers drawn from two Colleges of Education, randomly assigned to an experimental group (AI-assisted instruction) and a control group (traditional instruction), with 60 participants in

each. The intervention lasted eight weeks. The experimental group was exposed to AI tools such as ChatGPT, Socratic AI, and adaptive mathematics software in simulated instructional settings. Both groups were assessed pre- and post-intervention using two standardized instruments: the Pedagogical Competence Scale (Cronbach's $\alpha = 0.88$) and the Attitude Toward Technology Integration Scale (Cronbach's $\alpha = 0.85$). Data were analyzed using descriptive statistics and Analysis of Covariance (ANCOVA) to control for pretest differences. Findings revealed that the AI-assisted group significantly outperformed the control group in both pedagogical competence and attitude toward technology integration. The study concludes that AI-assisted instruction is an effective pedagogical strategy for enhancing teaching competence and fostering a positive disposition toward educational technology. The study recommends the integration of AI-based instruction into teacher training curricula, capacity building for lecturers on AI use, infrastructural investment, policy enforcement, and longitudinal research to track long-term effects on teaching efficacy and classroom performance.

Paper 13 Title: EFFECT OF ARTIFICIAL INTELLIGENCE ON ACADEMIC PERFORMANCE OF BUSINESS EDUCATION STUDENTS IN FEDERAL UNIVERSITY OF EDUCATION, ZARIA, KADUNA STATE

Authors: MOHAMMED AFOLABI IDAYAT

Affiliation: DEPARTMENT OF BUSINESS EDUCATION | FEDERAL UNIVERSITY OF EDUCATION, ZARIA-KADUNA STATE, NIGERIA

Abstract: This study examined Effect of Artificial Intelligence on Academic Performance of Business Education Students in Federal University of Education, Zaria Kaduna State. The study adopted descriptive survey design. The population was made up of 888 B.Ed. students in Federal University of Education, Zaria for the 2023/2024 academic session. A sample size of 300 B.Ed students was selected from the department using a multi-stage sampling procedure. The instrument used for data collection was a structured four-point Likert scale questionnaire titled "Effect of Artificial Intelligence on Academic Performance Business Education Students in Federal University of Education, Zaria Kaduna State Questionnaire (EAIAPBESFQ)" developed by the researchers. The instrument was validated by experts in the School of Education. Findings of the study revealed there was a positive significant relationship of artificial intelligence (AI) the learning abilities of students in FUE, Zaria in Kaduna State ($r = .503$, $N= 300$, $p <.05$), also result reveals that there was a positive significant relationship of artificial intelligence (AI) on the problem-solving skills of students in FUE, Zaria in Kaduna State ($r = .462^{**}$, $N= 300$, $p<.05$) and there

was a positive significant relationship of artificial intelligence (AI) on the critical thinking abilities of students in FUE, Zaria in Kaduna State (r = .646**, N= 300, p<.05). The study therefore recommended among others, that College lecturers should integrate Artificial Intelligence (AI) in their work, receive training, and explore ways to use them for developing students' skills.

Paper 14 Title: EXPLORING THE ROLE OF ARTIFICIAL INTELLIGENCE IN STREAMLINING ADMINISTRATIVE FUNCTIONS IN COLLEGES OF EDUCATION IN KADUNA STATE, NIGERIA

Authors: HASHIM; Mansir (Ph.D); General Studies of Education

Affiliation: BY | Federal University of Education, Zaria | 080 | Mail | This study investigates 'exploring the role of Artificial Intelligence in Streamlining Administrative functions in colleges of education in Kaduna State, Nigeria'.

Abstract: The research focused specifically on evaluating the impact of AI tools on administrative communication and attendance tracking. Two research questions and two hypotheses guided the study. A survey research design was adopted, involving a population of 3,181 individuals—comprising 1,658 lecturers and 1,523 senior management staff—from the two government-owned Colleges of Education in the state. A sample of 346 respondents (180 lecturers and 166 senior management staff) was selected. Data were collected using a validated instrument titled Questionnaire on Artificial Intelligence Tools and Automation of Routine Administrative Tasks (QARITARAT). The instrument was pilot-tested and achieved a Cronbach Alpha reliability coefficient of 0.82. Data analysis was conducted using SPSS version 23. Descriptive statistics (frequency, mean, and standard deviation) were used to answer the research questions, while Chi-square (χ^2) was employed to test the hypotheses at a 0.05 significance level. Findings revealed a significant impact of AI tools on communication processes within the colleges. However, the tools showed no significant effect on attendance tracking. Based on these findings, the study recommended that college management should strategically adopt AI tools for administrative automation while addressing potential risks such as data privacy concerns, bias, and reduced human interaction. Ethical considerations should guide AI integration to ensure its effective and responsible use in educational administration.

Paper 15 Title: EFFECTIVENESS OF DIGITAL INSTRUCTIONAL TOOLS (DITS) ON PRE-SERVICE SCIENCE TEACHERS' CONCEPTUAL UNDERSTANDING AND PEDAGOGICAL SKILLS IN COLLEGE OF EDUCATION, BILLIRI, GOMBE STATE, NIGERIA

Authors: Bertha Abdu Danja, PhD

Affiliation: College of Education, Billiri, P.M.B. 011, Billiri, Gombe State, Nigeria
abdulonis@yahoo.com +234 703 069 7950 | & | Danga, Luka Amos, PhD
College of Education, Billiri, P.M.B. 011, Billiri, Gombe State, Nigeria
lukadanga250@gmail.com +234 803 765 9025 |

Abstract: This study examined the effectiveness of Digital Instructional Tools (DITs) on pre-service science teachers' conceptual understanding and pedagogical skills in the College of Education, Billiri, Gombe State, Nigeria. A quasi-experimental research design, specifically the non-equivalent pre-test, post-test control group design, was adopted. The study compared two intact NCE II classes, an experimental group taught with DIT-based instruction and a control group taught through traditional lecture methods. The population comprised all NCE II pre-service science teachers in the School of Science during the 2024/2025 academic session, while a purposive sample of 64 students participated in the study. Three validated instruments were used for data collection: the Science Conceptual Understanding Test (SCUT), the Pedagogical Skills Assessment Scale (PSAS), and the Digital Instructional Tool Utilization Questionnaire (DITUQ). The reliability coefficients obtained were 0.82, 0.87, and 0.85, respectively. The intervention spanned six weeks, during which the experimental group was exposed to digital simulations, interactive multimedia lessons, and computer-assisted learning, while the control group received conventional instruction. Data collected were analyzed using mean, standard deviation, t-test and Analysis of Covariance (ANCOVA) at a 0.05 level of significance. Findings revealed that DIT-based instruction significantly improved participants' conceptual understanding and pedagogical skills compared to traditional methods. The study concluded that DITs are effective in enhancing pre-service science teachers' learning and teaching competencies. The study recommended sustained capacity building for teacher educators, improved access to digital resources, and systematic integration of DITs into the Colleges of Education curriculum to strengthen teacher preparation in the digital age.

Paper 16 Title: EVALUATION OF ARTIFICIAL INTELLIGENCE POTENTIAL IN HIGHER EDUCATION ASSESSMENT FOR ACADEMIC PERFORMANCE IN TERTIARY INSTITUTIONS IN SOUTH – SOUTH, NIGERIA

Authors: Babajide Olanipekun OLAOJO; Ph.D

Affiliation: By | Department of Social Studies | School of Arts and Social Sciences | Federal College of Education (Technical), Omoku, Rivers State. | Email: babajideolaojo@gmail.com | +2348033728638

Abstract: This study investigates the potential of Artificial Intelligence (AI) in enhancing the learning outcomes of Nigerian undergraduates. Using a mixed-methods approach, the research examines the integration of AI-driven educational tools. Data was collected through surveys and interviews with students, faculty members, and educational technologists across five Nigerian institutions. Quantitative data was analyzed to assess improvements in academic performance, engagement, and retention rates, while qualitative data highlighted perceptions of AI's role in enhancing teaching and learning processes. The findings reveal that there is significant main effect of treatment (AI-based tutoring systems, and Automated grading systems) on Learning outcomes of Nigerian Undergraduate ($F(2, 50) = 43.225$, $p < .05$, $\eta 2 = .634$) and there was significant main effect of intelligence on Learning outcomes of Nigerian Undergraduate ($F(2, 50) = 10.711$, $p < .05$, $\eta 2 = .277$) result showed that there was significant relationship between Personalized learning platforms and learning outcomes among undergraduate students ($r = .421$, $N = 550$, $p < .05$). The findings reveal that AI tools significantly contributed to improved student learning outcomes, particularly in courses with high dropout rates and large class sizes. Students reported higher levels of engagement and personalized support, which were key factors in their academic success. The study concludes that while AI presents a transformative opportunity to enhance educational outcomes, its effective implementation in Nigerian higher education requires addressing technological and institutional challenges.

Paper 17 Title: NAVIGATING THE ETHICAL DILEMMA OF GENERATIVE AI IN HIGHER EDUCATIONAL INSTITUTION IN NIGERIA USING THE TOE FRAMEWORK

Authors: PROF. YUSUF BENSON BAHA

Affiliation: By |ADAMAWA STATE COLLEGE OF EDUCATION, HONG|DEPARTIMENT OF COMPUTER SCIENCE

Abstract: Generative AI tools stand at the threshold of innovation and the erosion of the long standing values of creativity, critical thinking, authorship, and research in higher education. This research crafted a novel framework from the technology, organization, and environment (TOE) framework to guide higher educational institutions in Nigeria to navigate the ethical dilemma of generative AI. A questionnaire was used to collect data from twelve higher institutions among lecturers, students, and researchers across the six (6) geopolitical zones of Nigeria.

The structural equation modeling was used to analyze the data using the SPPS Amos version 23. The results revealed that factors such as perceived risks of generative AI, Curriculum support, institutional policy, and perceived generative AI trends positively impact the need for a generative AI ethical framework in higher educational institutions in Nigeria. Furthermore, the study contributes to the adoption of theory to navigate the ethical dilemma in the use of generative AI tools in higher educational institutions in Nigeria. It also provides some practical implications that suggest the importance of inculcating ethical discussions into the curriculum as part of institutional policy to create awareness and guidance on the use of generative AI.

Paper 18 Title: AI AND EMERGING ISSUES: IMPLICATIONS FOR TEACHER EDUCATION DELIVERY

Authors: KUMBA AWUMTIYA ISA

Affiliation: By |ADAMAWA STATE COLLEGE OF EDUCATION, HONG|DEPARTIMENT OF COMPUTER SCIENCE |DEPARTMENT OF MATHEMATICS

Abstract: The integration of Artificial Intelligence (AI) in education is reshaping teaching and learning globally, and its implications for teacher education cannot be overemphasized. As emerging technologies increasingly influence curriculum delivery, teacher preparation programs must be responsive to new pedagogical realities. This paper explores the intersection of AI and emerging educational challenges, assessing how teacher education institutions can adapt to maintain relevance and effectiveness. The study highlights key issues such as ethical use of AI, teacher capacity building, curriculum reform, and digital equity. It concludes with policy and institutional recommendations aimed at equipping teacher trainees for AI-enhanced classrooms.

Paper 19 Title: AI AND EMERGING ISSUES: IMPLICATIONS FOR TEACHER EDUCATION DELIVERY

Author: YOHANNA PETER, INSTITUTION: ADAMAWA STATE COLLEGE OF EDUCATION HONG DEPARTMENT: PHYSICAL AND HEALTH EDUCATION

Abstract: The rapid advancement of artificial intelligence technologies presents both unprecedented opportunities and significant challenges for teacher education programs worldwide. This paper examines the transformative implications of AI

integration on teacher preparation, pedagogical delivery methods, and professional development frameworks. Through analysis of current trends and emerging applications, I identify key areas where AI technologies are reshaping teacher education delivery, including personalized learning pathways, intelligent tutoring systems, automated assessment tools, and virtual classroom environments. The research highlights critical considerations for curriculum redesign, faculty development, and institutional policy formation while addressing ethical concerns regarding data privacy, algorithmic bias, and the human-AI relationship in educational contexts. My findings suggest that successful AI integration in teacher education requires strategic planning, comprehensive faculty training, and careful attention to maintaining the essential human elements of teaching practice.

Paper 20 Title: ARTIFICIAL INTELLIGENCE INNOVATION IN EDUCATION: TRANSFORMING TEACHING AND LEARNING FOR THE DIGITAL AGE

Authors: MOHAMMED Adamu

Affiliation: By |ADAMAWA STATE COLLEGE OF EDUCATION, HONG|DEPARTIMENT OF BIOLOGY

Abstract: Artificial Intelligence (AI) is revolutionizing educational contexts globally by providing new avenues for improving teaching and personalizing learning. This paper presents an overview of new AI technologies for education, discusses the pedagogical implications and considers the trajectory for their adoption. Based on the recent literature and practice from research prototypes, I aim to learn how AI technologies can contribute to pedagogies and tackle challenges and concerns. The results show the AI-enabled education systems have the potential of significantly improving student outcomes, easing the administrative load, and promoting an equity of learning environment. Positive outcomes are only possible when educators receive extensive training, curricula are adapted, and digital equity is appropriately addressed.

Paper 21 Title: AI-BASED PROFESSIONAL DEVELOPMENT PLATFORMS FOR IN-SERVICE TEACHERS IN AFRICA: OPPORTUNITIES, CHALLENGES, AND POLICY IMPLICATION

Authors: ADAMU, Abubakar

Affiliation: By |ADAMAWA STATE COLLEGE OF EDUCATION, HONG|DEPARTIMENT OF ECONOMICS

Abstract: Artificial Intelligence (AI) is transforming education globally, presenting innovative avenues for enhancing teacher development, particularly in resource-constrained regions like Africa. This paper examines the role of AI-powered professional development (PD) platforms in supporting in-service

teachers by offering personalized, scalable, and context-aware learning opportunities. Using both global and African case studies, the study assesses the effectiveness, challenges, and policy considerations surrounding AI-based PD tools. The findings underscore the promise of adaptive learning technologies, real-time feedback systems, and intelligent recommendation engines in strengthening the professional capacity of African educators. Nonetheless, critical obstacles such as inadequate digital infrastructure, data protection issues, and limited AI competence must be tackled through coordinated policy action, strategic investment, and institutional transformation. The paper concludes with practical recommendations for integrating AI into teacher development frameworks across Africa.

Paper Title : The Influence of AI-powered tools on learning styles and academic achievement among pre-service biology teachers in Southwest, Nigeria

Author: Olayemi Aderokun ASAAJU, Ph.D ACEITLMS College of Education, University of Rwandamodadeola64@yahoo.com Folake Beatrice YOADE, Ph.D

Department of Science Education Faculty of Education Obafemi Awolowo University, Nigeria fbyoade@oauife.edu.ng

Abstract : The increasing accessibility of Artificial Intelligence-powered tools has led to their exploration and adoption in teaching and learning especially at the tertiary level of education. This study examined the influence of AI-powered tools on learning styles and academic achievement among pre-service biology teachers in southwest, Nigeria. A descriptive survey research design was employed, involving 360 pre-service biology teachers selected through purposive sampling. Research instrument was a 29-item questionnaire and reliability was carried out using the Cronbach Alpha with a result of 0.82. Analysis of data collected was done using descriptive statistics and correlation analysis. Findings showed that participants demonstrated substantial awareness and utilization of AI-powered tools for academic activities. However, the correlation between the use of AI-powered tools, learning styles, and academic achievement was negative and statistically non-significant ($r = 0.127$; $r = 0.118$; p 0.05). The study therefore concluded that AI-powered tools did not exert a significant influence on learning styles or academic achievement among the sampled pre-service biology teachers. Consequently, it was recommended that intensive trainings and workshops be organized for pre-service biology teachers on effective use of AI powered tools as this will go a long way at equipping them prior to their becoming practicing teachers.

Paper 22 Title: ARTIFICIAL INTELLIGENCE INNOVATION IN EDUCATION: TRANSFORMING TEACHING AND LEARNING FOR THE DIGITAL AGE

Authors: 1: PROF. YUSUF BENSON BAHA DEPARTMENT COMPUTER SCIENCE; NAME **2**: KUMBA AWUMTIYA ISA DEPARTMENT MATHEMATICS; NAME **3**: YOHANNA PETER DEPARTMENT PHYSICAL AND HEALTH EDUCATION; NAME **4**: MOHAMMED Adamu DEPARTMENT BIOLOGY

Affiliation: By |ADAMAWA STATE COLLEGE OF EDUCATION, HONG|DEPARTIMENT OF MATHEMATICS

Abstract: Artificial Intelligence Innovation In Education: Transforming Teaching and Learning For the Digital Age Artificial Intelligence (AI) is revolutionizing educational contexts globally by providing new avenues for improving teaching and personalizing learning. This paper presents an overview of new AI technologies for education, discusses the pedagogical implications and considers the trajectory for their adoption. Based on the recent literature and practice from research prototypes, I aim to learn how AI technologies can contribute to pedagogies and tackle challenges and concerns. The results show the AI-enabled education systems have the potential of significantly improving student outcomes, easing the administrative load, and promoting an equity of learning environment. Positive outcomes are only possible when educators receive extensive training, curricula are adapted, and digital equity is appropriately addressed. Generative AI tools stand at the threshold of innovation; the erosion of the long- standing values of creativity; critical thinking; authorship; research in higher education. This research crafted a novel framework from the technology; organization; environment (TOE) framework to guide higher educational institutions in Nigeria to navigate the ethical dilemma of generative AI. A questionnaire was used to collect data from twelve higher institutions among lecturers; students; researchers across the six (6) geopolitical zones of Nigeria. The structural equation modeling was used to analyze the data using the SPPS Amos version 23. The results revealed that factors such as perceived risks of generative AI; Curriculum support; institutional policy; perceived generative AI trends positively impact the need for a generative AI ethical framework in higher educational institutions in Nigeria. Furthermore; the study contributes to the adoption of theory to navigate the ethical dilemma in the use of generative AI tools in higher educational institutions in Nigeria. It also provides some practical implications that suggest the importance of inculcating ethical discussions into the curriculum as part of institutional policy to create awareness; guidance on the use of generative AI;

Paper 24 Title: INTEGRATING ARTIFICIAL INTELLIGENCE IN TECHNICAL TEACHER EDUCATION IN SOKOTO STATE, NIGERIA: OPPORTUNITIES, CHALLENGES AND IMPLICATIONS FOR AFRICA

Authors: NSABA, Victor Arobor

Affiliation: FEDERAL COLLEGE OF EDUCATION GIDAN MADI, SOKOTO, NIGERIA DEPARTMENT OF TECHNICAL EDUCATION

Abstract: This study explores the integration of Artificial Intelligence (AI) into technical teacher education in Sokoto State, Nigeria, highlighting its potential and challenges within Africa's educational reform agenda. As AI transforms learning globally, there is a need to equip prospective teachers with relevant digital competencies. The study will adopt a mixed methods approach, using questionnaires and interviews among lecturers and students in selected Colleges of Education. Focus areas include institutional readiness, access to digital tools and pedagogical implications. The findings aim to contribute to broader conversations on educational transformation in Africa and inform evidence-based policy and curriculum strategies for AI driven teacher education.

Paper 25 Title: INTEGRATING ARTIFICIAL INTELLIGENCE IN BUSINESS EDUCATION CURRICULUM DEVELOPMENT: A STUDY OF NIGERIAN COLLEGES OF EDUCATION

Authors: IBRAHIM ALI DANJUMA

Affiliation: BY | FEDERAL COLLEGE OF EDUCATION, YOLA | adibrahim@fecyola.edu.ng | 08036348524 |

Abstract: This paper examines the integration of artificial intelligence (AI) in the curriculum development of Business Education programs within Nigerian Colleges of Education. As the educational landscape in Nigeria evolves, the incorporation of AI offers unique opportunities to enhance teaching methodologies, educational content, and student engagement. This study analyzes current practices in Nigerian Colleges of Education and identifies key challenges, including infrastructural limitations, insufficient training, and curriculum relevance. By reviewing case studies from various Business Education programs, the paper aims to provide actionable insights into how AI can effectively inform curriculum design, ensuring that Business Education remains relevant and responsive to the needs of both learners and teachers. Ultimately, the findings emphasize the importance of a collaborative approach among educators, policymakers, and stakeholders to harness AI's full potential in shaping the future of Business Education pedagogy in Nigeria.

Paper 26 Title: INTEGRATION AND EFFICACY OF ARTIFICIAL INTELLIGENCE IN ENGLISH LANGUAGE TEACHING: A COMPARATIVE ANALYSIS OF URBAN/RURAL EDUCATIONAL SETTING IN NIGERIA.

Authors: SHUAIBU IBRAHIM

Affiliation: BY | shuaibuibrahimduru@gmail.com | DEPARTMENT: ENGLISH LANGUAGE | SCHOOL OF SECONDARY EDUCATION, LANGUAGES | YUSUFU BALA USMAN COLLEGE OF EDUCATION AND LEGAL STUDIES, DAURA, KATSINA STATE, NIGERIA

Abstract: Artificial Intelligence (AI) has become very widely applied in education as a result of the advancements in technology. This has a very significant impact on the teaching and learning of English Language across African continent, Nigeria inclusive. This research examines 'The Integration and Efficiency of Artificial intelligence in English Language Teaching: A Comparative Analysis of Urban and Rural Educational Setting in Nigeria'. The study covers a range of Artificial Intelligence (AI) tools and platforms for learners of English, such as intelligent tutoring system, virtual language assistants and language learning apps. It explores the advantages of AI in a tailored education, flexible learning paths and instantaneous feedback among the students of Urban and rural settings in Nigeria. It also explores the disparities that exists between the two categories of students. The study uses comparative analysis methodology to examine and evaluate the related literature, describes AI and discusses the method used as well the gap that exist among the students of urban and rural setting. It further discusses AI techniques and their appropriate applications for English language teaching and learning, their efficacy, their usefulness, their challenges and the possible ways of improving the identified challenges.

Key words: Artificial Intelligence, Rural, Urban, E-learning, Platforms, Virtual language assistants.

Paper 27 Title: INTERROGATING THE IMPACTS OF ARTIFICIAL INTELLIGENCE ON STUDENTS' PERFORMANCE IN TAI SOLARIN COLLEGE OF EDUCATION, OMU-IJEBU.

Authors: AGORO; FATAI AYOWOLE; Omu-Ijebu; Ogun State

Affiliation: By: | Department of Political Science, | Tai Solarin College of Education, Science and Technology, |

Abstract: The paper interrogates the impact of artificial intelligence (AI) on students' academic performance in Tai Solarin College of Education (TASCE) with

focus on factors such as improved student performance, attitudes toward learning, motivation for study habits, and learning mechanisms. Further, it aims to interrogate how AI enhances student academic outcomes. A qualitative method was adopted with an In-depth Personal Interview (IPI) to gather data. Purposive sampling was employed to select 30 students and 10 teaching staff. Findings revealed that AI effectively targets the specific learning needs of students, facilitating comprehensive and improved learning experiences. Additionally, AI accurately measures and enhances students' attitudes toward learning, offering deeper insights into the learning process. Conversely, it was revealed that apart struggling, some learners find it difficult to study alone using AI, students mostly over-relied on the technology making them not to use their brains, thus, affecting critical thinking. Needed infrastructural facilities for necessary interventions on campus are not readily available. It was therefore concluded that though, AI is a welcome development in learning process for enhanced academic performance, over-reliance on AI negatively affects overall students' performance in TASCE. Thus, it was recommended among others that while embracing AI, the need to strikes a balance between integration and over-reliance on AI technology becomes germane by the Management of TASCE.

Paper 28 Title: IMPLICATIONS OF ARTIFICIAL INTELLIGENCE AND EMERGING TECHNOLOGIES ON TEACHER EDUCATION IN AFRICA: A STUDY OF DR. UMARU SANDA AHMADU COLLEGE OF EDUCATION, MINNA, NIGER STATE, NIGERIA

Authors: Dr. Ibrahim Muhammad Hassan (FISEN); Awaisu; Shuaibu

Affiliation: By | Department of Social Studies, Dr. Umaru Sanda Ahmadu College of Education, Minna. | dodondawa2000@gmail.com | 08065917768. | and | Department of Social Studies, Dr. Umaru Sanda Ahmadu College of Education, Minna | mailshuaib24@gmail.com | 08036583906.

Abstract: This study explores the implications of Artificial Intelligence (AI) and emerging technologies for teacher education in Africa, with specific focus on teacher educators in Dr. Umaru Sanda Ahmadu College of Education, Minna. As digital transformation continues to shape educational landscapes globally, it becomes imperative to examine the awareness, preparedness, and perceptions of teacher educators regarding the integration of AI and innovative technologies into teacher training. Grounded in the Technological Pedagogical Content Knowledge (TPACK) framework, the study adopts a descriptive survey design and utilizes both online and hard copy questionnaires to collect data from experienced teacher educators. Findings reveal moderate awareness of AI concepts and tools, limited training opportunities, and a strong desire for institutional support and policy direction.

Respondents recognize the potential of emerging technologies to enhance learner-centered instruction and improve teacher proficiency, but also highlight challenges such as inadequate infrastructure, digital skill gaps, and the absence of clear implementation frameworks. The study recommends the incorporation of AI-related content into teacher education curricula, sustained capacity-building initiatives, and strategic investment in ICT infrastructure to bridge the technological divide and empower African educators for the future of teaching and learning.

Paper 29 Title: INTEGRATING AI IN ENGLISH LANGUAGE TEACHER EDUCATION: OPPORTUNITIES AND CHALLENGES IN NIGERIAN COLLEGES OF EDUCATION

Authors: Umar Ahmed Wadu

Affiliation: By | Department of English | Federal College of Education, Yola | Email: umarwadu@fceyola.edu.ng | Phone: 08062324323 |

Abstract: This paper explores the challenges and opportunities associated with the adoption of artificial intelligence (AI) in English language teacher education programs in Nigerian colleges of education. While AI technologies hold transformative potential for enhancing teaching methodologies and learner engagement, several obstacles impede their integration, including infrastructural limitations, inadequate training for educators, and resistance to change. Through a comprehensive analysis of existing literature and relevant case studies from Nigerian institutions, the paper aims to identify best practices and strategies for overcoming these challenges. It also emphasizes the potential for AI to foster innovative teaching approaches, improve educational outcomes, and bridge the gap between traditional pedagogical methods and modern technological advancements in English language education in Nigeria.

Paper 30 Title: INTEGRATING ARTIFICIAL INTELLIGENCE INTO ELECTRICAL/ELECTRONIC TECHNOLOGY EDUCATION: IMPERATIVES FOR CURRICULUM REFORM IN NIGERIAN COLLEGES OF EDUCATION

Authors: 1Umar Abdullahi; 2Livinus Chukwura Ezugu

Affiliation: by | 1Curriculum & Instructional Technology Department, School of Education, Federal College of Education (Technical), Gombe, Gombe State, Nigeria

(umarsanda197@gmail.com +2348036656808); | 2Department of Electrical Technology Education, Faculty of Eduaction, Modibbo Adama University, Yola, Adamawa State, Nigeria.

Abstract: This article demands the reorientation of the Nigerian Colleges of Education's Electrical/Electronic Technology Education (EETE) curriculum to embrace Artificial Intelligence (AI) capabilities in one move. As the industries around the world continue to tap increasingly from AI-based systems, from automation to smart embedded technologies, the Nigerian teacher education system is bound to produce irrelevant teachers who cannot meet 21st-century technical requirements. The article is a critical analysis of the disparity of the current EETE curriculum to the requirements of Industry 4.0 in terms of gaps and shortcomings such as the absence of AI modules, insufficient exposure to smart systems, and low lecturers' capacity. The article urges a revolutionary curricular transformation involving AI fundamentals, exposure to practicing intelligent tools, and inter-disciplinary design. The action plans involve pilot trials of the AI labs, lecturers' capacity building, and industry engagement. If the reforms are not implemented, Nigeria's EETE plans will be against international trends, shutting out the country from innovation and technological independence. | Keywords: Artificial Intelligence (AI); Electrical/Electronic Technology Education; Curriculum Reform; Teacher Education; Industry 4.0 Skills

Paper 31 Title: INTEGRATION OF SMART TECHNOLOGIES IN TEACHING IN SELECTED COLLEGES OF EDUCATION, IN NORTH-EASTERN NIGERIA: ISSUES AND CHALLENGES

Authors: Tijjani Usman Karofi Ph.D

Affiliation: Taraba State College of Education, Zing | karofex@gmail.com

Abstract: This paper explores the e-preparedness of Colleges of Education in Nigeria in adopting cutting-edge smart technologies. It is geared to asses e-preparedness in Nigerian teacher education institutions, providing actionable insights for policy formulation, institutional enhancement, identifying key challenges and proposing strategic solutions. The theoretical framework is grounded on ICT ecosystem and its value chain, emphasizing the role of digital technologies in content delivery, professional development, and facility management. Findings indicate that while ICT facilities are available, functional, and accessible, its integration in teaching remains suboptimal, exposing gaps in digital literacy, unstable internet access, irregular power supply, dearth of technical expertise, and obsolete technological resource as barriers to technology- driven education in the sampled institutions. The paper

recommended consistent power supply, continuous professional development for educators, network infrastructure upgrades, and sustainable internet subscriptions.

Paper 32 Title: LECTURERS' PERCEPTIONS AND EFFECTIVENESS OF AI INTEGRATION ON TEACHING AND SKILL DEVELOPMENT IN NIGERIA

Authors: 1Oni; 2Adeoye; 1Adebayo; 3Ilori

Affiliation: 1Department of Agricultural Education, Federal College of Education (FCE), Abeokuta. P.M.B 2096. Sapon Abeokuta. Ogun State, Nigeria. | 2Department of General Studies in Education (GSE) Federal College of Education (FCE) Abeokuta P.M.B 2096. Sapon Abeokuta. Ogun State, Nigeria. | 3Department of Animal Production and Health Federal University of Agriculture, Abeokuta (FUNAAB) P.M.B 2240. Sapon Abeokuta. Ogun State, Nigeria. | Corresponding Email: onioluwakemi873@gmail.com andadeoyestephen@gmail.com.

Abstract: The phenomenon of Artificial Intelligence has been actualised and is now an integral component of our daily existence. Its disruptive nature has already manifested and is poised to exert substantial influence across diverse sectors, including education. This research investigates the perceptions of lecturers regarding the efficacy of artificial intelligence (AI) integration in pedagogical practices and skill enhancement across a range of academic disciplines within Nigeria. It assesses the ramifications of AI on lecturers' educational experiences, critical thinking abilities, self-evaluation processes, cognitive growth, and maintenance of academic integrity. This inquiry utilised a systematically structured survey disseminated to 360 lecturers via Microsoft Forms 365, achieving a response rate of 82.5%. A structured survey instrument coupled with thematic analysis was employed to extract insights from 297 lecturers. Thematic analysis constitutes a qualitative methodology aimed at recognising and scrutinising patterns or themes present within the data, thereby elucidating significant concepts and trends. Advantages such as the enhancement of critical thinking, provision of timely feedback, and customisation of learning experiences are frequently acknowledged as a result of AI's effectiveness. The researcher determined that a considerable proportion of respondents exhibit a moderate perception regarding the utilisation of artificial intelligence in educational contexts, with 87.5% of participants affirming access to AI tools for their learning endeavours. Additional findings revealed that the majority of respondents demonstrate proficiency in employing artificial intelligence for educational purposes. A significant number of respondents indicated that AI tools, such as Turnitin, bolster academic integrity, while platforms like ChatGPT and

Grammarly were particularly esteemed for their application in academic activities. The outcomes of this study suggest that AI possesses the potential to considerably enhance the teaching and skill development of numerous lecturers. AI offers customized support and encourages adherence to ethical standards. This research advocates for the sustained and expanded application of AI technologies within educational settings, while also addressing prospective implementation challenges that may impede its integration.

Paper 33 Title: LEVERAGING ARTIFICIAL INTELLIGENCE (AI) IN EDUCATIONAL MANAGEMENT FOR ENHANCED QUALITY IN NIGERIAN EDUCATIONAL SYSTEM

Authors: Muhammad Baba; Ph.D; Emerging Issues: Implications for Teacher Education Delivery in Africa; Date: 8th – 12th December

Affiliation: BY | 08036132569 | muhammadbaba740@gmail.com | Department of Educational Foundations | Niger State College of Education, Minna | Nigeria | Being Text of a Paper Presented at International Conference on Artificial Intelligence and Education | Theme: | Venue: University of Kigali, Rwanda

Abstract: African countries need to focus on the provision of Quality education. The integration of AI in educational management presents transformative approach to enhancing Quality in education. This paper posited that AI is a potent instrument for promoting management processes in educational institutions in Nigeria. Specifically, the paper presents the conceptual clarification of educational management and quality education. The paper further identifies specific roles of AI in enhancing quality in education. However, the paper pointed out that adoption of AI in educational management in Nigeria could face certain challenges. The paper therefore recommends among others that institutions must adequately invest in training and support for staff to effectively utilize these modern technologies. The paper concludes that by leveraging this tool in Educational Management, educational institutions can create more result-oriented learning environments towards quality education in Nigeria.
Key Words: Artificial Intelligence, Educational management, Quality education

Paper Title: TEACHER EDUCATION IN AFRICA: HARNESSING AI TO ENHANCE SOCIAL-EMOTIONAL LEARNING

Author:Modupe Ayodele OBA-ADENUGA, Ph.D.

Affiliation: Department of Educational Psychology, School of Education Sikiru Adetona College of Education, Science and Technology, Omu-Ajose, Nigeria

Abstract: Teacher education in Africa is confronted with special challenges such as limited resources, varying student needs, and varying educational standards. With education systems needing to improve in terms of outcomes, applying artificial intelligence (AI) presents an unprecedented chance to enhance social-emotional learning (SEL) among teachers and students alike. The potential of AI tools such as personalized learning platforms and chatbots in creating emotional intelligence, resilience, and empathy in the classroom is explored here. By the application of AI, teachers can benefit from customised professional development, gain data-driven insights into student activities, and design inclusive learning environments that cater for the emotional as well as the academic needs of learners. Additionally, the report includes case studies of several African nations where AI has been applied very successfully in teacher training programs, including best practices and lessons learned. The conclusion from the exploration shows that not only can AI be used to help teachers acquire SEL skills, but it can also be used for the enhancement of the quality of education generally in Africa. The paper proposed a model calling for policy reforms that endorse AI as a strategic means for teacher development to achieve the ultimate goal of having a generation of teachers that can meet the socio-emotional needs of their students.

Paper Title : Artificial Intelligence and Emerging Issues: Implications for the Administration of Colleges of Education in Nigeria.

Author: Dr. Jagula Danladi Msheliza and Mr. Msheliza Danladi

Affiliation: Department of foundation Education, School of Education, Federal College of Education (Technical) Gombe

Abstract: The rapid advancement of Artificial Intelligence (AI) presents both opportunities and challenges for the administration of Colleges of Education in Nigeria. This paper explores the intersection of AI technologies and tertiary education governance, focusing on their potential to transform administrative efficiency, decision-making processes, and quality assurance mechanisms. It critically examines emerging issues such as ethical considerations, data privacy, funding constraints, and the readiness of institutional infrastructure to adopt AI-driven solutions. Drawing on current global trends and local realities, the study highlights how AI can streamline student admissions, automate record management, enhance staff evaluation, and improve resource allocation in Colleges of Education in Nigeria. However, it also underscores risks, including job displacement fears, digital inequality, and policy gaps that could hinder effective implementation. The paper concludes with practical recommendations for policymakers, administrators, and stakeholders to develop strategic frameworks that balance innovation with

inclusivity, ensuring that AI adoption strengthens the mandate of Colleges of Education to produce quality teachers for national development.

Paper 34 Title: LEVERAGING ARTIFICIAL INTELLIGENCE FOR INCLUSIVE CHEMISTRY EDUCATION IN NIGERIAN COLLEGES OF EDUCATION

Authors: Ashiru Abubakar Garba, Ph.D

Affiliation: By, MICCON, MSTAN Department of Chemistry, Zamfara State College of Education Maru, Zamfara State, Nigeria, +2348064893341, ashirabuu@gmail.com

Abstract: This study explores the potential of artificial intelligence (AI) to promote inclusive chemistry education in Nigerian Colleges of Education. It investigates how AI-powered tools can cater to diverse learning needs, including students with disabilities, language barriers, and varying cognitive abilities. The research examines the role of AI in Personalized learning, Accessibility, and Language support. The findings will highlight the benefits and challenges of using AI to promote inclusive chemistry education in Nigerian Colleges of Education. The research will also provide recommendations for educators, policymakers, and AI developers on how to harness the potential of AI to create a more inclusive and equitable learning environment for all chemistry learners. Finally, this study will contribute to the discourse on inclusive education and AI in Africa, emphasizing the need for context-specific solutions that address the unique challenges and opportunities in Nigerian Colleges of Education.

Paper 35 Title: MAN TO MACHINE: EFFECTS OF ARTIFICIAL INTELLIGENCE AND EMERGING TECHNOLOGIES ON ACADEMIC PERFORMANCE OF PRE-SERVICE TEACHER IN NIGERIA COLLEGES OF EDUCATION.

Authors: Tesleem Akinyemi AMOO

Affiliation: Department of Curriculum Studies, Federal College of Education, Iwo, Osun State, Nigeria. | +234806 666 6288

Abstract: The integration of Artificial Intelligence (AI) and emerging technologies into education is transforming instruction process in Nigerian Colleges of Education. This paper explores the impact of these innovations on the academic performance of pre-service teachers, with particular focus on institutions like the Federal College of Education, Iwo. It examines how AI-powered tools affect learning engagement and outcomes. It further investigates challenges related to digital literacy and ethical concerns. The study reveals both the promise and the complexity of transitioning from traditional learning method to machine enhanced learning environments.

Recommendations are offered for policy and institutional reforms to responsibly harness AI for equitable and human-centered teacher education in Nigeria.

Paper 36 Title: PERCEIVED IMPACT OF ARTIFICIAL INTELLIGENCES ON TEACHERS EDUCATION TOWARDS ENHANCING DIGITAL ECONOMY IN NIGERIA.

Authors: DR. LOUISA O. UNUGO;

Affiliation: DEPARTMENT: SOCIAL STUDIES | EBONYI STATE COLLEGE OF EDUCATION IKWO | EMAIL: obyunugo@gmail.com | PHONE NO: 07032969511

Abstract: This paper intends to investigate the perceived impact of Artificial Intelligences on Teacher's Education towards Enhancing Digital Economy in Nigeria. Artificial Intelligences (AI) is the capability of computational systems to perform tasks typically associated with human intelligences such as learning, reasoning, problem solving, perception and decision making in a digital era, the teacher plays a role as a link to the knowledge community. Previously practitioner and teachers education petered the face to face teaching and learning process because of it acclaimed advantages over the focus of learning. The new global reality that was occasioned by the upsurge of Covid-19 has made Ai and digital learning innovations and educational technology plays a very consequential and conspicuous role in the face of the pandemic. This paper identified same perceived impact of AI to include personalized learning and increase engagement of learners, expensive learning opportunities and improved access to resources and greater flexibility among others. Some recommendations were made such as capacity of teacher educators should be improved through professional development programmes to develop positive attitude to ICT and AI learning.

Paper 37 Title: PROFESSIONAL DEVELOPMENT PROGRAMME AND ARTIFICIAL INTELLIGENT FOR TEACHING IN COLLEGES OF EDUCATION IN SOKOTO STATE, NIGERIA

Authors: BASHAR; Muhammad Yabo

Affiliation: By | Department of Curriculum and Instructions | Shehu Shagari College of Education, Sokoto | +2348036398213 | yabobashir@gmail.com

Abstract: Global shifts in the use of technology have affected all areas of development, including education. Despite this, educators who play a crucial role in

facilitating learning often lack awareness of emerging technologies that could enhance teaching and learning. Many teachers do not receive adequate professional development to equip them with the necessary skills to perform effectively in technology driven environments. While developed countries are integrating artificial intelligence (AI) into education to improve teaching methods, many developing countries are still grappling with challenges related to infrastructure, funding, and expertise, which hinder their adoption of such technologies. This study employed a systematic approach to analyze secondary data on teacher professional development for AI integration in education. The findings indicate that AI is transforming education and offers numerous benefits that teachers should leverage. Based on a review of existing literature, the study concludes that educators need to be made aware of AI's potential through targeted training and workshops to build relevant competencies.

Paper 38 Title: PREPARING FUTURE MATHEMATICS TEACHERS FOR AI-ENHANCED LEARNING ENVIRONMENTS: IMPERATIVES FOR CURRICULUM OVERHAUL IN NIGERIAN COLLEGES OF EDUCATION

Authors: By Ali Adamu

Affiliation: Department of Mathematics Education, Federal College of Education (Technical) Gombe, Gombe State, Nigeria.

Abstract: The catalyzing breakthrough in Artificial Intelligence (AI) calls for Mathematics Teacher Education to revolutionize significantly, especially in the Bachelor's and NCE degree programmes in Nigeria. Deficiencies in the existing curriculum like exposure to AI, computational thinking, and computer-based tools to prepare 21st-century mathematics teachers are articulated here critically. Reform is called for in terms of the call for introducing AI literacy, interdisciplinarity, and innovative pedagogies. Practicable alternatives such as incorporation of AI practitioners in curriculum review processes, open-source technologies, and partnership with EdTech players are suggested to facilitate implementation. Infrastructural shortcomings, digital divide, and institutional resistances are listed anticipated challenges and evaded through adoption paths in phases, lobbying campaigns, and specified funding sources. The article ends with policy recommendations to policymakers, curriculum planners, and teacher education providers to develop an AI-smart, future-proof teaching maths profession.

Paper 39 Title: REVOLUTIONIZING TEACHER EDUCATION IN NIGERIAN COLLEGES OF EDUCATION THROUGH ARTIFICIAL INTELLIGENCE INTEGRATION FOR SUSTAINABLE EDUCATIONAL GROWTH IN SUB-SAHARAN AFRICA

Authors: Umar; Abdulraheem Ojo; Zuba-Abuja; Nigeria; Garba; Suleiman

Affiliation: By | Department of Computer Science | FCT College of Education | uil.pg2015.1975@gmail.com | 07057922854 | And | Department of Computer Science | FCT College of Education | sulgarba@gmail.com | 08035960866

Abstract: In an age of rapid digital transformation, Artificial Intelligence (AI) has emerged as a key driver of innovation across professional fields, including education. AI-powered tools such as machine-learning tutoring aids, adaptive lesson platforms, automated feedback mechanisms, and predictive analytics are redefining teaching, learning, and administrative processes. These technologies provide new opportunities to enhance teacher performance, broaden access to quality education, and address diverse learner needs. AI provides an opportunity to enhance pedagogical practices, expand access, and foster data-driven educational transformation in Nigeria's Colleges of Education, the integration of AI into teacher education presents a significant opportunity to transform how educators are trained, mentored, and evaluated. This paper examines how AI integration can revolutionize teacher education in Nigerian Colleges of Education, emphasizing opportunities, challenges, and future directions within the African context. It also identifies systemic barriers such as infrastructural deficits, policy gaps, ethical risks, and limited digital literacy that hinder adoption. The paper concludes with actionable recommendations for sustainable implementation and outlines strategic directions for future research and policy alignment with the Sustainable Development Goals (SDG-4).

Paper 40 Title: STRATEGIC FRAMEWORK FOR INTEGRATING ARTIFICIAL INTELLIGENCE IN TEACHER EDUCATION INSTITUTIONS IN SUB-SAHARAN AFRICA

Authors: MAGAJI ADO MUHAMMAD

Affiliation: BY | DEPARTMENT OF CURRICULUM AND ISTRUCTIONS | JIGAWA STATE COLLEGE OF EDUCATION AND LEGAL STUDIES, RINGIM

Abstract: Artificial Intelligence (AI) is increasingly recognized as a transformative force in global education, yet its integration into teacher education institutions in Sub-Saharan Africa remains limited and under-researched. This study develops and validates a strategic framework for AI integration through a comparative case study of four institutions in Nigeria and Ghana. Employing a qualitative multiple case

study design, data were collected from 96 participants via surveys, semi-structured interviews, and document analysis. Findings reveal significant systemic challenges, including inadequate infrastructure, limited staff capacity, and a critical absence of AI-specific policy directives. Despite these constraints, a strong staff interest and leadership recognition of AI's potential were identified. The study refines a six-pillar framework comprising Institutional Readiness, Policy Alignment, Infrastructure and Access, Curriculum Integration, Staff Development, and Monitoring and Evaluation and concludes that successful adoption requires contextual adaptation and phased implementation. The research provides evidence-based, context-sensitive recommendations for policymakers, educators, and development partners, offering a pragmatic roadmap for sustainable AI integration in African teacher preparation programs.

AI, Capacity Building, Policy and Governance

Paper 1 Title: APPLICATION OF ARTIFICIAL INTELLIGENCE IN SCIENCE TEACHING AND LEARNING IN NIGERIAN SCHOOLS: CHALLENGES AND PROSPECTS

Authors: DR. ALICE OGBENE ENUMA

Affiliation: BY | Aliceenuma024@gmail.com | Department of Integrated Science, College of Education Oju

Abstract: This paper explored the application of Artificial Intelligence (AI) in science teaching and learning in Nigerian schools, pointing out the challenges and prospects. The paper explicated the meaning of artificial intelligence and identifies various ways in which AI can be applied in science teaching and learning, including personalized learning, adaptive assessment, enriched content delivery, simulation of experiments, teacher support, and global collaboration as well as motivating both teachers and learners for knowledge acquisition. The paper further discusses the challenges associated with application of AI in science teaching and learning in Nigerian schools including inadequate infrastructure, insufficient funding and high cost and limited digital literacy among others. The paper provides insights into the transformative role of AI in shaping the future of science education. The researcher recommended Investment in AI Infrastructure, professional development for teachers and integration of AI across Curriculum in Nigerian schools.

Paper 2 Title: APPLICATION OF ARTIFICIAL INTELLIGENCE ON LEGAL DOCUMENT DRAFTING

Authors: OGBOMAH; THANKGOD O

Affiliation: ISAAC JASPER BORO COLLEGE OF EDUCATION, SAGBAMA, BAYELSA STATE

Abstract: Artificial intelligence (AI) is transforming legal drafting by automating document creation, enhancing accuracy, and improving efficiency in legal processes. AI- powered tools, such as natural language processing (NLP) and machine learning algorithms, can analyse vast amounts of legal texts, identify relevant clauses, and generate well-structured contracts, agreements, and legal opinions. These technologies reduce human error, ensure compliance with legal standards, and significantly cut down the time required for document preparation. In addition, AI systems can assist in reviewing and updating existing documents to reflect current laws and regulations. While AI offers substantial benefits in streamlining legal drafting, challenges remain regarding data privacy, ethical considerations, and the limitations of AI in interpreting legal nuance and intent. Despite these concerns, AI is poised to play a critical role in the future of legal drafting, serving as a valuable tool for legal professionals and organisations seeking to improve the quality and speed of legal documentation.

Paper 3 Title: ARTIFICIAL INTELLIGENCE (AI) AND EMERGING ISSUES, IMPLICATIONS FOR TEACHER EDUCATION DELIVERY IN AFRICA IN RELATION TO ISLAMIC EDUCATION.

Authors: HALIMA YAHAYA; Jigawa State; Nigeria

Affiliation: By | Department of Islamic studies, | School of Secondary Education, | Jigawa State College of Education and Legal Studies, Ringim, | Phone Number: +2348039434926 | Email Address: halimayahayamuhammad@gmail.com

Abstract: This study explores the integration of Artificial Intelligence (AI) in teacher education delivery in Africa, focusing on Islamic education. It examines opportunities and challenges of adopting AI in teaching and learning processes. AI offers potential benefits like innovative teaching approaches, personalized learning, and improved efficiency in Islamic education. However, emerging issues include bias in AI algorithms, data privacy concerns, and potential displacement of human teachers. The study highlights the need for educators in Islamic education to develop skills to harness AI's benefits while mitigating risks. Recommendations are provided for African institutions offering Islamic education to effectively integrate AI in teacher education delivery, addressing associated challenges.

Paper 4 Title: ARTIFICIAL INTELLIGENCE (AI) AND PLAYFUL PARENTAL ENGAGEMENT (PPE) IN EARLY CHILDHOOD CARE DEVELOPMENT AND EDUCATION (ECCDE): STRATEGIC PLANNING FOR ECCDE TEACHERS TRAINING PROGRAMS

Authors: Abubakar Rilwanu Zaki

Affiliation: By | Abubakar Rilwanu Zaki Email: rilwanuzaki@gmail.com Phone Contact: +2348033651445 ORCID Number: 0009-0004-8586-4031 Department of Early Childhood Care, Development and Education School of Early Childhood Care, Primary, Adult and Non-formal Education Zamfara State College of Education, Maru, Nigeria.

Abstract: constrained environments such as Zamfara State, Nigeria. This study examines how Artificial Intelligence (AI) can enhance Playful Parental Engagement, in which parents practice developmentally appropriate activities with their 3-5-year-old children at home to support physical, cognitive, linguistic, and social-emotional development, by strategically planning ECCDE teacher training programs. The research addresses preparing caregivers to effectively involve parents in complementing Learning Through Play (LTP) at home using AI technologies while maintaining cultural sensitivity. Through a comprehensive analysis of AI platforms, including Vroom, READY4K, Seesaw, ClassDojo, and Brightwheel, this study explores how teachers can implement technology-enhanced systems that strengthen Playful Parental Engagement (PPE) and school environment activities by guiding parents to turn everyday moments into intentional learning experiences using readily available household materials. Findings reveal that AI enhances parental engagement by providing personalized developmental activities, delivering holistic child assessments, facilitating childcare management, and empowering parents to confidently support children's comprehensive development via accessible AI tools. The study recommends developing phased AI competency training, establishing collaborative infrastructure partnerships, designing culturally-adapted implementation frameworks, and creating empirical validation systems for ECCDE teacher preparation programs.

Paper 5 Title: ARTIFICIAL INTELLIGENCE AND AUDIT PRACTICE OF PUBLIC AUDIT FIRMS IN NIGERIA

Authors: Appah, Ebimobowei (PhD, FCA)

Affiliation: BY | Appah, Ebimobowei (PhD, FCA) Isaac Jasper Boro College of Education, Sagbama, Bayelsa State appahebimobowei@yahoo.com; +2348037419409

Abstract : The rapid advancement of Information and Communication Technology (ICT), particularly Artificial Intelligence (AI), is transforming audit practice globally. AI tools such as expert systems, neural networks, machine learning, and fuzzy logic are increasingly integrated into auditing processes to enhance efficiency, accuracy, and audit quality. Despite global adoption trends, empirical evidence on AI's impact on audit practice in Nigeria remains limited, especially regarding the moderating role of human characteristics. This study investigates the effect of AI on audit quality among public audit firms in South-South Nigeria, focusing on how auditor expertise, experience, attitudes, and perceptions influence this relationship. Anchored on Task-Technology Fit (TTF) theory, the research adopts a quantitative cross-sectional survey design, collecting primary data through structured questionnaires administered to 316 audit firms selected using Taro Yamane's formula. Data analysis employs multiple regression to test hypotheses on the association between AI dimensions (expert systems, neural networks, machine learning, fuzzy logic) and audit quality, as well as the moderating effects of human factors. Findings are expected to provide empirical insights into AI adoption in Nigerian audit practice, highlighting its potential to automate routine tasks, improve risk assessment, and strengthen professional judgment. The study contributes to literature on AI in auditing and offers practical recommendations for audit firms and regulators to optimize AI integration for enhanced audit quality.

Paper 6 Title: ARTIFICIAL INTELLIGENCE AND EMERGING ISSUES IN AFRICA: A POLITICAL ECONOMY ANALYSIS OF POWER AND RESOURCE DYNAMICS

Authors: Dr. ATTAH; Henry Attah; North-Central Nigeria

Affiliation: By | Political Science Department, | Federal University of Education Kontagora, Niger State, | Phone: +2348036367003; +23409113851661 | Email: attahhenryattah@gmail.com

Abstract: This study examines the implications of artificial intelligence on emerging issues in Africa, focusing on power dynamics and resource allocation. The research investigates how AI adoption reinforces or challenges existing power structures, and how resources are allocated to support AI integration. The study highlights the implications of AI on labor markets, economic development, and social inequality in

Africa. It provides recommendations for policymakers to ensure that AI benefits are equitably distributed and that the technology serves the needs of African societies.

Paper 7 Title: ARTIFICIAL INTELLIGENCE AND TEACHER EDUCATION DELIVERY: ANALYSIS OF ITS OPPORTUNITIES AND CHALLENGES

Authors: Terwase Adzaigba Ph.D; Benue State-Nigeria

Affiliation: By | terzaigba2@gmail.com | Department Political Science | College of Education Oju | Being Conference Paper on the Importance of Artificial Intelligence on Teacher Education and Service Delivery held in Kigali, Rwanda

Abstract: The major concern of this study is to interrogate how Artificial Intelligence (AI) has impacted teacher education delivery. The study analyses the opportunities and challenges associated with artificial intelligence. The opportunities ranges from improved learning to ease in content development, all of these the study revealed how AI has contributed to making teacher education more engaging, efficient and effective. Conversely, the paper realised that AI pretenses a number of challenges to teacher education. These challenges includes but not limited to the following; lack of human interface to ethical concerns. The paper therefore recommends that human interaction alongside the use of AI in teacher education and adherence to ethical issues should be encouraged such that AI can operate side by side with other physical teaching methods.

Paper 8 Title: ARTIFICIAL INTELLIGENCE AS A TOOL FOR ENHANCING SCIENCE

Authors: EDUCATION: AN OVERVIEW; MUHAMMAD Idris Madugu

Affiliation: BY | Primary Education Department, | Federal University of Education, Kontagora, Niger State. Nigeria | 08039417610 | idilafiagi5@gmail.com

Abstract: This paper provides a general overview of the potentials of AI when Integrated into science education processes because of its potential to improve personalized learning, resource efficiency and content production that can facilitate the acquisition of new knowledge and skills. AI also aids in data analysis, enabling students to engage in data-driven science and develop critical thinking skills. The paper highlights the significant impact of AI tools such as ChatGPT, Virtual Lab,

Kahoot, Minecraft (Education Edition) etc. that can be used to enhance engagement among the students, improved collaboration and teacher support. Some of the challenges and considerations of AI such as infrastructural limitations, teacher training are mentioned and ethical considerations in the teaching and learning of science, which extend beyond technical considerations to encompass broader societal impacts, such as privacy protection and social justice is also discussed. It is therefore recommended that AI should be more extensively integrated in to science education curricula, and that institutions need to consider the ethical implications of AI in the development implementation of their programs. By so doing they can better prepare students for demands of the future workforce.

Paper 9 Title: ARTIFICIAL INTELLIGENCE IN BIOMEDICAL RESEARCH AND EDUCATION

Authors: EBITIMI PETER BEREZI (PhD), ISAAC JASPER BORO

Affiliation: EBITIMI PETER BEREZI (PhD) DEPARTMENT OF CHEMISTRY ISAAC JASPER BORO COLLEGE OF EDUCATION, SAGBAMA, BAYELSA STATE

Abstract: Artificial intelligence (AI) is revolutionizing biomedical research and education by enhancing data analysis, decision-making and learning experiences. In research, AI enables the rapid processing of complex biological data, aiding in disease prediction, drug discovery, genetic analysis and personalised medicine. Machine learning and deep learning models facilitate the identification of patterns in large datasets, accelerating scientific discovery. In biomedical education, AI supports personalised learning, virtual laboratories and intelligent tutoring styles and needs. These innovations improve engagement, accessibility and understanding of complex biological concepts. However, the integration of AI presents challenges, including data security, ethical concerns, and the need for interdisciplinary expertise. Despite these issues, the potential benefits of AI in enhancing the efficiency, accuracy, and effectiveness of biomedical research and education are immense. Continuous collaboration between computer scientists, educators and medical professionals is essential to ensure responsible and impactful use of AI in this domain.

Paper 10 Title: ARTIFICIAL INTELLIGENCE-DRIVEN LEARNING ANALYTICS FOR PRE-SERVICE TEACHERS: A PREDICTIVE MODELING APPROACH IN KADUNA STATE, NIGERIA

Authors: Ubale Alhaji ISMAILA PhD

Affiliation: By | Department of Physical and Health Education, Federal University of Education, Zaria-Nigeria | Correspondence: | ismailaalhaji48@gmail.com

Abstract: The study examined the Artificial Intelligent Driven Learning Analytics for Pre-Service Teachers, Using Predictive Modeling in Kaduna State, Nigeria. Specifically, the study sought to determine the use of predictive modeling to enhance academic performance, reduce dropout rate rates, and enhance students' retention of pre-service teachers in Physical and Health Education in colleges of education, Kaduna State, Nigeria. The study employed predictive algorithms to identify at-risk pre-service teachers, determine key predictors of academic success and offer tailored intervention. The design of the study was quantitative research. The population of the study consisted of all Physical and Health Education students in Federal College of Education, Zaria-Nigeria and Kaduna State College of Education, Gidan waya, Kafanchan. The study found strong correlation between specific learning behaviours and academic outcomes of pre-service teachers. The study recommends the integration of learning analytics into teacher training programme due to its potentials in learning outcome.

Paper 11 Title: ASSESSMENT OF PRE-SERVICE TEACHERS' PERCEPTIONS OF THEIR EXPERIENCE AND FEAR ABOUT AI IN TEACHER EDUCATION

Authors: CHRISTIANAH TINUOLA OLADOSU (PHD);

Affiliation: BY | EDUCATIONAL FOUNDATIONS AND MANAGEMENT DEPARTMENT, OSUN STATE COLLEGE OF EDUCATION, ILA-ORANGUN, OSUN STATE, NIGERIA. | Educational Foundations and Management Department, Osun State College of Education, Ila-Orangun, Osun State, Nigeria.

Abstract: This study assesses the perceptions of pre-service teachers' experiences and fear towards the use of artificial intelligence (AI) in teacher education. A qualitative research design was adopted. The population consists of Nigerian Certificate in Education students in Osun State, Nigeria. The simple random sampling technique was adopted to select 60 students from one private and one public college of education in Osun State. Semi-structured interviews were used. Thematic analysis revealed that there is enthusiasm towards AI-enhanced learning, anxiety over job displacement and ethical concerns, and a significant gap in AI literacy among pre-service teachers in both private and public colleges of education. It was therefore recommended that the teacher educators' curricula should include the use of AI in teaching and learning.

Paper 12 Title: ASSESSING THE IMPACT OF AI TOOLS ON INSTRUCTIONAL TECHNIQUES IN TECHNOLOGY TRAINING AMONG WEST AFRICAN INSTRUCTORS

Authors: Engr. ODEH Isaac Ochim, OGUNGAMBO Leke Justus, VAWE Roy Maigari

Affiliation: Engr. ODEH Isaac Ochim, OGUNGAMBO Leke Justus, VAWE Roy Maigari Electrical Electronics Technology Department Federal College of Education (Tech) Akoka, Lagos State, Nigeria.

Abstract: This study investigates the impact of Artificial Intelligence (AI) tools on instructional techniques in technology training institutions across West Africa. Using a mixed-methods design, data were collected from 218 instructors across ECOWAS countries to evaluate digital readiness, adoption levels, and pedagogical outcomes of AI integration. Descriptive statistics revealed moderate device accessibility (Mean = 1.64), low AI tool utilization (Mean = 2.75), and infrastructural gaps such as unreliable internet connectivity (Mean = 2.16), underscoring persistent digital inequities However, instructors exhibited strong academic qualifications (Mean ≈ 2.0) and cross-disciplinary engagement (Mean = 3.11), indicating potential for AI-driven transformation. Inferential analyses using ANOVA indicated statistically significant differences across constructs ($F = 5.47–11.81$, $p < .05$), particularly in access to cloud-based services and localized AI content. The findings demonstrate that AI tools enhance lesson design, feedback mechanisms, and learner engagement but are hindered by infrastructure and training limitations. The study concludes that AI has transformative potential in advancing learner-centered and efficient teaching practices in Technical and Vocational Education and Training (TVET). It recommends strategic investments in digital infrastructure, instructor capacity building, and contextual policy frameworks to ensure equitable AI adoption across West African institutions.

Paper 13 Title: ASSESSING THE IMPACT OF AI TOOLS ON INSTRUCTIONAL TECHNIQUES IN TECHNOLOGY TRAINING AMONG WEST AFRICAN INSTRUCTORS

Authors: Engr. ODEH Isaac Ochim; OGUNGAMBO Leke Justus; VAWE Roy Maigari

Affiliation: Electrical Electronics Technology Department | Federal College of Education (Tech) Akoka, Lagos State, Nigeria.

Abstract: This study investigates the impact of Artificial Intelligence (AI) tools on instructional techniques in technology training institutions across West Africa. Using a mixed-methods design, data were collected from 218 instructors across ECOWAS countries to evaluate digital readiness, adoption levels, and pedagogical outcomes of AI integration. Descriptive statistics revealed moderate device accessibility (Mean =

1.64), low AI tool utilization (Mean = 2.75), and infrastructural gaps such as unreliable internet connectivity (Mean = 2.16), underscoring persistent digital inequities However, instructors exhibited strong academic qualifications (Mean ≈ 2.0) and cross-disciplinary engagement (Mean = 3.11), indicating potential for AI-driven transformation. Inferential analyses using ANOVA indicated statistically significant differences across constructs ($F = 5.47–11.81$, $p < .05$), particularly in access to cloud-based services and localized AI content. The findings demonstrate that AI tools enhance lesson design, feedback mechanisms, and learner engagement but are hindered by infrastructure and training limitations. The study concludes that AI has transformative potential in advancing learner-centered and efficient teaching practices in Technical and Vocational Education and Training (TVET). It recommends strategic investments in digital infrastructure, instructor capacity building, and contextual policy frameworks to ensure equitable AI adoption across West African institutions.

Paper 14 Title: Exploring the Impact of Artificial Intelligence in Science Teaching and Learning

Authors: *Usman; U.Z1. Kabir; *Corresponding Author

Affiliation: Institution: Sa'adatu Rimi College of Education Kumbotso, Kano | Department of Biology

Abstract: The use of Artificial Intelligence (AI) in education is transforming various dimensions of the education system, such as instructional practices, assessment strategies, and administrative processes. It also plays an active role in the progression of science education. This systematic review attempts to render an inherent understanding of the evidence-based interaction between AI and science education. Specifically, this study offers a consolidated analysis of AI's impact on students' learning outcomes, contexts of its adoption, students' and teachers' perceptions about its use, and the challenges of its use within science education. The present study followed the PRISMA guidelines to review empirical papers published from 2020 to 2024. In total, 54 records met the eligibility for this systematic study. Previous research provides evidence of AI integration into a variety of fields in physical and natural sciences in many countries across the globe. The results revealed that AI-powered tools are integrated into science education to achieve various pedagogical benefits, including enhancing the learning environment, creating quizzes, assessing students' work, and predicting their academic performance. The findings from this paper have implications for teachers, educational administrators, and policymakers.

Paper 14 Title: An Assessment of AI Tools Used for Personalised Reading Instructions Among Children in Selected Primary Schools in Nigeria

Authors: Adepoju; Adetokunboh Abayomi

Affiliation: adecxyom@gmail.com | +2348032201379 | Department of Primary Education | Adeyemi Federal University of Education, Ondo, Nigeria |

Abstract: The study assessed the availability of Artificial Intelligence (AI) tools used in personalising reading comprehension in primary schools in Litaye community, Ondo, Ondo State. The literature review covered the definitions of AI tools, the importance of AI in teaching reading, AI tools used in personalising reading and the constraints against the use of AI tools in personalising reading comprehension and relied on personalised learning theory as the theory of the study. Purposive sampling was used to select ten class teachers, ten parents and five pupils making a total of twenty-five as the samples of the study. Four research instruments, namely, a twelve item yes or no questionnaire, non-participant observation, in-depth interviews and documents were used as research instruments to elicit responses and for data triangulation. The validity and reliability of the structured questionnaire was established by two experts in test and measurements while the credibility of the study was done with the use of prolong engagement, member checking, confirmability, thick and rich description, audit trails and anonymity. Quantitative data were analysed with the use of simple percentage while qualitative data were analysed according to the themes derived. The results disclosed that the participants are unaware of AI tool, AI tools are neither available nor used in the schools and that the use of AI in personalising reading instructions is confronted by lack of resources. Therefore, the study recommended among others that, teachers should be trained in the use of AI tools, awareness should be created and ICT facilities and AI tools should be made available in primary schools.

Paper 16 Title: ARTIFICIAL INTELLIGENCE AND EMERGING TECHNOLOGIES IN NIGERIAN TEACHER EDUCATION: OPPORTUNITIES, CHALLENGES, AND IMPLICATIONS

Authors: BARIWENI BINAEBI; Ph.D

Affiliation: BY | bbinaebi2@gmail.com | Department of Business Education, | School of Vocational and Technical Education | Isaac Jasper Boro College of Education, Sagbama, Nigeria |

Abstract: Since its inception, Artificial Intelligence (AI) has evolved towards practical tools now used in virtually all endeavours of human existence. From healthcare, finance/accounting, aerospace, communication, to education, AI is being widely recognised for its potential contributions to productivity and progress. In the global education environment, AI is leveraged to enhance personalized learning, automate assessments, and support teacher development. However, the integration of AI into teacher education, particularly within the Nigeria and sub-Sahara Africa (SSA) remains largely underutilised. Drawing insights from international trends and practices, the paper examines the current realities in Nigerian teacher education, including the state of digital infrastructure, policy frameworks, and institutional preparedness for AI adoption. The paper contextualises how AI interventions in other regions can be adapted to local socio-economic, technological, and educational realities. The study also outlined key opportunities AI presents for enhancing teacher quality, assessment systems, and training outcomes. Based on the analyses, and findings, the paper recommended - among other things - the establishment of ICT-AI units within teacher education institutions, updating curriculum standards to include AI and digital literacy, as well as creating enabling environments for low-tech adaptive tools. Additionally, it suggests expanding access through subsidised devices and acquisition of devices included in student loan scheme.

Paper 17 Title: ARTIFICIAL INTELLIGENCE AND EMERGING TECHNOLOGIES IN TEACHING AND LEARNING: A PARADIGM

Authors: Shift for Teacher Education in Nigeria; Babatunde Adewumi ADEDOKUN; PhD

Affiliation: Presented at International Conference on Artificial Intelligence and Education, | University of Kigali, Rwanda | By | Federal College of Education, Yola, Nigeria

Abstract: Largely, the imprints of global technological explosion are becoming increasingly evident in the classroom environment and the import is continuously changing the narratives in the education industry. Inadvertently, cultural dynamism, technological advancement, population explosion, economic revolution, international connectivity and inherent insatiable needs of man have culminated in substantive advancement in the field of education. In addition, the advent of Artificial Intelligence has not only widened the scope, but now a major force transforming orthodox learning. While change could be somewhat restive and laborious, it is yet imperative that Nigeria key in to this

global move regardless of the barrages of challenges. This paper attempts an overview of AI emerging technologies, particularly in tandem with Nigeria's local peculiarities, and it profers a paradigm shift by way of adoption, and adaptation. Apparently, integration of technologies into the teaching/learning process is no longer a choice, but a task that must be thoroughly done.

Key words – Artificial Intelligence, Technological Explosion, Cultural Dynamism, Paradigm Shift, Integration

Paper 18 Title: ARTIFICIAL INTELLIGENCE AS A CATALYST FOR EDUCATIONAL INNOVATION: ENHANCING ASSESSMENT PRACTICES, TEACHER EDUCATION, AND INSTRUCTIONAL DELIVERY IN AFRICA

Authors: NURADDEEN; Yusuf Galadanchi (Ph.D.)

Affiliation: By | ygaladanchi2015@gmail.com | 08032128756 | Department of Early Childhood Care and Education | Yusuf Bala Usman College of Education and Legal Studies Daura, Katsina State, Nigeria

Abstract: This study aimed to examine Artificial Intelligence as a catalyst for educational innovation to enhance assessment practices, teacher education, and instructional delivery in Africa, focusing on to provide real-time assessment feedback for teacher effective instructional delivery. A survey research design was employed with a population of 454 teaching staff and a sample size of 213, determined using a 5% margin of error. Stratified sampling technique was utilized, and data were collected using a validated 5-point Likert scale questionnaire with a reliability index of 0.78. Data analysis involved frequency counts and percentages. Findings revealed that the integration of AI in education showed significant potential to enhance teaching and learning outcomes. The study concluded that AI can greatly improve learning assessment. Based on the findings, it is recommended that education authorities, in collaboration with leading institutions, establish an AI assessment and development task force focussed on educational applications, responsible for identifying, developing and evaluating AI tools to enhance academic assessment processes.

Paper 19 Title: ARTIFICIAL INTELLIGENCE IN RELIGIOUS EDUCATION: CONTEMPORARY CHALLENGES AND OPPORTUNITIES

Authors: YAKUBU Aminu Malam Umar

Affiliation: By | ayakubu633@gmail.com | Department of Islamic Studies | Federal University of Education, Kontagora, Niger State | Being a paper presented at an international conference on Artificial Intelligence and Education organized by the University of Kigali, Rwanda from 8th to 12th December 2025

Abstract: The rapid proliferation and integration of Artificial Intelligence (AI) technologies across various facets of human existence, including religious education, present a complex interplay of unique challenges and novel opportunities for the teaching and comprehension of religious beliefs, values, and traditions. This paper will delve into the multifaceted implications of AI's deployment within religious education, examines issues like data privacy, biasness and the AI influence or distortions of religious teachings, alongside the potential marginalization of religious personnel and traditional interpretations of sacred texts. Concurrently, the paper aims to identify the opportunities inherent in applying AI tools within religious education in the contemporary era.

Paper 20 Title: ARTIFICIAL INTELLIGENCE IN THE SUCCESS OF TEACHER EDUCATION: CHALLENGES, OPPORTUNITIES, AND FUTURE DIRECTIONS FOR THE AFRICAN EDUCATORS

Authors: ABUBAKAR Auwal

Affiliation: Department of Business Education, Federal College of Education Odugbo, Benue State of Nigeria. | Email address: abubakarauwal397@gmail.com auwalabubakar@fceodugbo.edu.ng

Abstract: The study examines the role performed by artificial intelligence (AI) in teacher education, precisely focusing on challenges, opportunities, and future directions for the African educators. The research also highlights the possible benefits of incorporating AI into the teacher education programs, as well as increased efficiency, enhanced learning outcomes, and improved teaching methods. The paper similarly adopted a documentary research method, in which recent studies and related literature were reviewed. The study also recommended a need for required training and the potential ethical concerns. In conclusion, the study proposes for the future directions to incorporate AI into teacher education, and its use as a tool for learning. By using AI in the teacher education field, the African educators can actually improve the value and quality of education prepared for their students and also stay at the far front of educational innovation.

Paper 21 Title: ASSESSING THE AWARENESS AND ATTITUDE OF TEACHERS TOWARD INTEGRATING ARTIFICIAL

Authors: Ibrahim Abubakar Lugga

Affiliation: Intelligence (AI) in Teaching Physics in Zamfara State Central Senatorial Zone, | Nigeria | By Ibrahim Abubakar Lugga Department of Physics, Zamfara State College of Education, Maru, Nigeria

Abstract: Artificial Intelligence (AI) is revolutionizing education globally by introducing innovative approaches to lesson design, classroom management, and assessment. However, in developing nations such as Nigeria, the potential of AI in teaching and learning remains underutilized, particularly in science education. This study examined the level of awareness and the attitudes of physics teachers toward the integration of AI in classroom instruction within the Central Senatorial Zone of Zamfara State. A descriptive survey design was employed, involving 80 physics teachers drawn from public secondary schools across Gusau, Tsafe, Bungudu, and Maru Local Government Areas. Data were gathered using a validated questionnaire, which yielded a reliability coefficient of 0.86 using Cronbach's Alpha. Findings revealed that 22.5% of the respondents demonstrated high awareness of AI, 45.0% had moderate awareness, and 32.5% had low awareness. In terms of attitude, teachers perceived AI as useful (Mean = 3.8) and expressed a strong willingness to adopt it (Mean = 4.0), though concerns were raised regarding ease of use (Mean = 3.2) and job security (Mean = 2.9). Major challenges identified included limited training opportunities, inadequate infrastructure, insufficient policy direction, and uncertainty about AI's instructional role. The study concludes that improving teacher competence, upgrading infrastructure, and establishing clear educational policies are vital for the successful integration of AI into physics education in Zamfara State.

Paper 22 Title: BOONS AND BANES OF ARTIFICIAL INTELLIGENCE (AI) ON PEDAGOGY IN NATIONAL OPEN UNIVERSITY OF NIGERIA (NOUN), WEST AFRICA.

Authors: Rev. Sr. Felicia; A. Orih; (Ph.D); Ihitte; Uboma; Imo State; Nigeria; West Africa

Affiliation: By | (Feliciaorih52@gmail.com |) | Benjamin Uwajumogu (State) College of Education,

Abstract: This study explores the persistent impressive renaissance by Artificial Intelligence (AI) rocking Nigerian educational industry; investigates AI's boons and banes (AI's prospects and challenges) on Pedagogy (teaching and learning)

endeavours in Nigeria, using the alleged fastest growing Open and Direct e-learning (O/DeL) academic institution in the country, National Open University of Nigeria (NOUN).The study utilizes a combined qualitative and quantitative research methodologies, interfaced with Technological Pedagogical Content Knowledge (TPACK) theoretical Framework. The study discovers that AI technologies offer valuable ways of surmounting constraints associated with traditional learning (T&L); improves access to quality education experience; furthers sustainable Development Goal; offers teachers flexibility over class attendance, paper marking and builds healthy communities. It further reveals some AI interwoven challenges of policy, techno-economic and security. In view of these challenges, the study recommends that the government provides sustainable funds for AI handles, trainings and security facilities for teachers and students.

Paper 23 Title: BRIDGING THE GAP: RETHINKING EARLY CHILDHOOD TEACHER TRAINING THROUGH ARTIFICIAL INTELLIGENCE IN NIGERIA

Authors: Aisha Kadiri Mohammed; Yola- Adamawa state; Nigeria

Affiliation: By | Federal College of Education | School of Early Childhood Care and Primary Education | Department of Early Childhood Care Education |

Abstract: This paper critically examines the gaps within early childhood teacher training programmes with a particular focus on the limited integration of artificial intelligence (AI) tools and digital competences. The paper investigates how AI, as an emerging educational technology could be systematically incorporated into teacher preparation to enhance pedagogical effectiveness and learner engagement at foundational level. The paper suggests accessible and low-cost platforms like Google's Teachable machine and scratch as practical tools for building AI-related pedagogical competencies. The paper recommends the integration of digital pedagogy and AI-focused content, institutional capacity-building, and policy coherence to support sustainable adoption.

Paper 24 Title: COLLEGES OF EDUCATION ACADEMIC STAFF UNION (COEASU)

Authors: CHAPTER CHAIRMAN DR. OKPARA ITIRI IDAM; All Correspondence to the Chapter Secretary; CHAPTER SECRETARY DR. ROSELINE NJOKU

Affiliation: FEDERAL COLLEGE OF EDUCATION (TECHNICAL), ISU CHAPTER PMB 220 ABAKALIKI, EBONYI STATE |

Abstract: NAME: OKPARA, Itiri Idam DEPARTMENT: Business Education TOPIC: Impact of AI-Driven Learning Analytics on Student-Teacher Development: Opportunities and Barriers in Africa AI-enhanced learning analytics are crucial for monitoring student-teacher development, predicting performances, and providing personalised feedback in teacher education programs. This study explores the use of AI-enhanced learning analytics in African teacher education institutions to monitor and support student- teachers' academic and professional growth, highlighting its potential for success. The study uses a mixed- methods approach to analyse data from AI-enabled learning management systems (LMS), questionnaires, and interviews. The study highlights that AI-powered analytics enhances student-teacher learning paths, enables early identification of struggling learners, and facilitates timely interventions. The study anticipates challenges in data privacy, digital skill gaps, and misinterpretation of algorithm-driven feedback. This study contributes empirical insights into how AI-enhanced learning analytics can transform teacher education by enabling data- driven decision-making and personalised support. The study provides practical recommendations for institutions, policymakers, and EdTech developers on designing ethical, scalable, and appropriate analytics systems for African teacher education delivery.

Paper 25 Title: CHALLENGES OF ARTIFICIAL INTELLIGENCE (AI) INTEGRATION IN AFRICAN TEACHER EDUCATION INSTITUTIONS

Authors: Mallo; Gowon Vincent; Nasarawa State - Nigeria

Affiliation: By | Department of French | College of Education Akwanga, | Phone Number: 08163354345 | magovin2020@gmail.com |

Abstract: This study investigates the challenges hindering the integration of Artificial Intelligence (AI) in African teacher education institutions. Although AI holds immense potential to revolutionize teaching and learning through innovative solutions in curriculum delivery, assessment, and teacher training, its adoption has been constrained by infrastructural deficits, institutional limitations, inadequate policy frameworks, and funding gaps. Using a mixed-methods approach that combines descriptive surveys and qualitative interviews, the study highlights poor internet connectivity, limited access to AI tools, and insufficient training among teacher educators as major obstacles. Findings further reveal ethical concerns such as data privacy, algorithmic bias, and fears of teacher displacement, which compound institutional resistance. The study concludes that while AI offers transformative opportunities for African teacher education, its successful integration requires deliberate investment in ICT infrastructure, continuous

professional development, localized innovations tailored to sociocultural contexts, and comprehensive policy reforms. Recommendations are made for governments, institutions, and policymakers to create enabling environments that will support AI-driven teacher education across the continent.

Paper 26 Title: COMPETENCE IN ARTIFICIAL INTELLIGENCE AND ITS RELATIONSHIP TO TEACHER TRAINING PROGRAMMES IN NIGERIA'S EDUCATION SYSTEM.

Authors: Dr. Ugboduma Samuel Ogheneovo; Dr. Avbenagha Eseoghene Andrew

Affiliation: By | MATHEMATICS DEPARTMENT | DELTA STATE COLLEGE OF EDUCATION, MOSOGAR | Email: samugboduma@gmail.com | AND | INTEGRATED SCIENCE DEPARTMENT | DELTA STATE COLLEGE OF EDUCATION, MOSOGAR

Abstract:Artificial Intelligence (AI) is reshaping education globally by enhancing personalized learning, automating administrative tasks, and improving teaching effectiveness. While developed nations have integrated AI into teacher training programs, enabling educators to leverage technology for improved learning outcomes, many developing countries, including Nigeria, lag behind due to infrastructural, financial, and training challenges. This study examines the relationship between teacher competence in AI and the effectiveness of teacher training programs within Nigeria's education system. Anchored on Vygotsky's Constructivist Learning Theory, Technology Acceptance Model (TAM), and Technological Pedagogical Content Knowledge (TPACK) framework, the research explores key factors influencing AI competence quality and duration of training, access to AI resources, and instructor expertise and assesses their impact on teachers' preparedness to integrate AI into classroom practices and subsequent effects on student learning outcomes. Using a descriptive survey design, data will be collected from 315 lecturers across public Colleges of Education in Nigeria's South-South zone through a structured questionnaire validated for reliability (Cronbach's Alpha ≥ 0.70). Data analysis will employ Structural Equation Modeling (SEM) to test hypothesized relationships among AI competence, readiness, and behavioral intention to teach AI. Findings are expected to provide actionable insights for improving teacher training programs, bridging AI literacy gaps, and informing policy interventions aimed at fostering effective AI integration in Nigerian classrooms. This study contributes to the growing discourse on AI in education and offers practical recommendations for enhancing teacher preparedness in developing countries.

Paper 27 Title: CONTEXTUALIZING THE ETHICS OF ARTIFICIAL INTELLIGENCE: LESSONS FOR EFFECTIVE KNOWLEDGE DELIVERY IN NIGERIA

Authors: Vincent Onah Ekle; Benue State-Nigeria

Affiliation: By | Department of Christian Religious Studies | College of Education, Oju

Abstract: The recent emergence of Artificial Intelligence (AI) has been one of the most intriguing human innovations. It is argued that since its innovation, AI is gradually replacing human efforts. While this could be alleviating human stress, it is argued that the overwhelming concentration on use of AI is commonizing human capacity. This means that human efforts are almost unnecessary in delivering on tasks, including teaching. This raises concerns on whether humans have become means to an end- whether they are moral subjects or objects. This paper defends the thesis that human knowledge delivery has no alternative. Doing otherwise is tantamount to berating the extent of human ability. The study establishes that though important, the over-dependence on AI in knowledge delivery is capable of creating a generation of lazy and un-innovative scholars hence, focus must be retained on genuinely humanized knowledge based sources towards effective knowledge delivery in Nigeria.

Paper 28 Title: DEVELOPING AI LITERACY AMONG MUSIC EDUCATORS IN NIGERIA WEST AFRICA: PREPARING TEACHERS FOR THE FUTURE CLASSROOM

Authors: UZOMA IGE JANET (PhD)

Affiliation: Department of Primary Education, | Federal College of Education, Okene Kogi State, Nigeria. | janeuzoma1414@gmail.com | +2348074131982 |

Abstract: This research delves into the exploration of artificial intelligence (AI) literacy among music teachers in Nigeria, West Africa, highlighting the crucial necessity for educators to be proficient in technology in today's digital educational environment. The study aims to assess the current level of AI knowledge, identify obstacles to incorporating AI, and suggest effective methods to enhance AI literacy among Nigerian music educators. Through a descriptive research approach and an online questionnaire, 250 participants from various tertiary institutions and selected secondary schools in Nigeria were surveyed. The results indicated that while most participants had a basic understanding of AI, only a small number had formal training and utilized AI tools in their teaching practices. Challenges such as negative attitudes towards technology, unreliable electricity and internet access, limited collaboration with AI experts, and lack of institutional support were

identified as hindrances to AI integration. However, a majority of respondents expressed eagerness to improve their AI literacy through workshops, online training, and government initiatives. Additionally, many participants advocated for the inclusion of AI literacy and practical sessions in music educators training programs. The study concludes that AI literacy among Nigerian music educators is at a moderate level, characterized by awareness but limited practical skills. It recommends the integration of AI literacy into music education curricula, regular capacity-building workshops, infrastructural and policy support, and collaboration between educators and AI specialists to foster innovative, creative, and technology-driven music education in Nigeria.

Paper 29 Title: DIGITAL TRANSFORMATION AND GEOSPATIAL ARTIFICIAL INTELLIGENCE IN AFRICAN EDUCATION: CONSEQUENCES FOR CURRICULUM DEVELOPMENT AND TEACHER TRAINING

Authors: Muhammad Lawan HARUNA

Affiliation: BY | Lawanharuna2013@gmail.com | DEPARTMENT OF GEOGRAPHY, | SA'ADATU RIMI COLLEGE OF EDUCATION KUMBOTSO KANO.

Abstract: Digital transformation has emerged as a powerful catalyst reshaping education systems globally, and Africa is increasingly embracing this paradigm to improve access, equity, and quality. Alongside this evolution, Geospatial Artificial Intelligence (Geo AI)—the convergence of artificial intelligence, geographic information systems (GIS), remote sensing, and spatial analytics presents new possibilities for educational planning, curriculum innovation, and teacher professional development. However, the integration of digital and geospatial intelligence into African education remains limited and uneven. This conceptual paper examines the intersection of digital transformation and Geo AI within African educational contexts, with a particular focus on the consequences for curriculum development and teacher training. Drawing on a thematic analysis of recent studies, policy reports, and international frameworks, the paper explores how digital transformation and Geo AI can enhance spatial literacy, digital competence, and pedagogical innovation while addressing challenges of infrastructure, policy, and equity. Findings suggest that the effective integration of Geo AI into curricula requires the inclusion of digital, spatial, and ethical literacies, alongside continuous professional development for teachers. The paper recommends that policymakers, curriculum developers, and teacher education institutions to embed digital and

geospatial competencies into sustainable educational frameworks aligned with Africa's development priorities and the United Nations' Sustainable Development Goal.

Paper 30 Title: APPLYING GENERATIVE AI FOR AGRICULTURAL EDUCATION TEACHER TRAINING IN AFRICA: STRATEGIC AND PEDAGOGICAL MODELS

Authors: Innocent Ezeorah Ezeaku

Affiliation: Agricultural Education Department, | Federal College of Education, | Nigeria. | 23rd July 2025

Abstract: This study explores the pedagogical and strategic implications of applying generative AI in agricultural education teacher training across African contexts. Pilot cases such as Malawi's Ulangizi chatbot demonstrate AI's capacity to deliver localized farming scenarios in native languages, supporting trainee teachers in developing curriculum-aligned agritech simulations. The research presents a strategic model encompassing infrastructure readiness, curriculum integration, and capacity-building for teacher educators. Findings reveal enhanced experiential confidence, decision-making skills, and contextual understanding among trainees. The proposed framework emphasizes ethical, scalable adoption, aligned with African Union and UNESCO guidelines, to empower teacher education institutions in low-resource agricultural regions to harness AI effectively for professional preparation.

Paper 33 : ADDRESSING THE DIGITAL DIVIDE: STRATEGIES FOR ENSURING EQUITABLE ACCESS TO AI-ENHANCED TEACHER EDUCATION IN NIGERIA.

Author : Dr. Smart Odunayo Olugbeko & Dr. Emmanuel Nkoro, Asagha

Affiliation: Federal University of Education, Ondo, Affiliation: Department of Curriculum Studies, | Adeyemi Federal University of Education, | Ondo. | Email: smartruvic@gmail.com | Nigeria,Federal College of Education (T), Ekiadolor, Edo State,.Nigeria

Abstract: This study explores the digital divide in Nigeria and its implications for equitable access to AI-enhanced teacher education. The research examines strategies for addressing this divide, including expanding access to digital infrastructure, implementing digital literacy programs, and promoting online and blended learning models tailored to Nigeria's educational context. It highlights the urgent need for Nigerian government bodies and educational institutions to prioritize investments in digital infrastructure and teacher professional

development. The study offers targeted recommendations to ensure equitable access to AI-enhanced teacher education across Nigeria, aiming to bridge regional disparities and empower educators with the tools needed for 21-century teaching.

Paper 34 Title: EMBRACING ARTIFICIAL INTELLIGENCE EMERGING ISSUES AND IMPLICATIONS FOR TEACHER EDUCATION IN AFRICA

Authors: AZUGBENE; E. SAMUEL; DELTA STATE; NIGERIA

Affiliation: BY | DEPARTMENT OF CURRICULUM STUDIES, | COLLEGE OF EDUCATION WARRI, | 08036761371 | azugbenesamuel@gmail.com

Abstract: Africa's teaching and learning environment is changing as a result of the use of artificial intelligence (AI) into education. With an emphasis on educators' perspectives, AI literacy, and training requirements, this study examines the new problems and ramifications of AI for teacher education in Africa. Both quantitative and qualitative data collecting and analysis techniques will be used in a mixed-methods approach. To obtain more detailed information, a survey questionnaire will be given to a sample of educators and policymakers, followed by focus groups and interviews., The purpose of the study is to find out how educators view AI in the classroom, how well-versed they are in the subject, and what kind of training they need to successfully incorporate AI-powered tools and technology into their lesson plans. In order to stay relevant in an AI-driven educational system, instructors must acquire certain skills and competencies, and the study will also examine the consequences of AI for teacher education, including the possible advantages and difficulties of adopting AI. The results of this study will aid in the creation of evidence-based guidelines and tactics for incorporating AI into African teacher preparation programs. In order to improve teaching and learning in African schools, the study's findings will also guide the creation of teacher training curricula that cater to educators' AI literacy and training requirements. This study will offer important insights for educators, policymakers, and researchers looking to harness the potential of AI to improve educational results by examining the relationship between AI and education in the African context. . The study's outcomes will have implications for teacher education, policy and practice, contributing to the

development of a more informed and effective approach to AI integration in African education systems.

Paper 35 Title: EMERGING ISSUES IN ARTIFICIAL IINTELLIGENCE USE IN ISLAMIC RELIGIOUS EDUCATION:

Authors: AN OVERVIEW; Nuhu Ogirima

Affiliation: By | Federal College of Education, Okene, Kogi State, Nigeria

Abstract: The subject of utilization of AI in the various fields of learning, within the context of the contention accompanying its introduction in the research space, sought to obscure its relevance in the field of religious studies, Islamic religious education in particular. Against this background, this paper provides an overview of identified emerging fundamental issues in AI use in Islamic religious education and studies; such as ethical concerns, privacy and data security, regulation and scholarly oversight, as well as authenticity, among others. The paper further recommends, inter alia, such measures as Shari'ah compliant AI models, provision of enhanced data security in Islamic religious applications, comprehensive regulation, and the development of AI compliant with Islamic ethics and scholarly oversight as imperatives toward effectively mitigating the identified challenges in AI use in Islamic religious education.

Paper 36 Title: EMERGING ISSUES IN THE APPLICATION OF ARTIFICIAL INTELLIGENCE TOOLS FOR TEACHER EDUCATION IN AFRICA:

Authors: IMPACT AND WAY FORWARD; Dr. Chioma Gloria Azubuike; Nsugbe; Anambra State; Nigeria

Affiliation: College Librarian | Nwafor Orizu College of Education, | chommyaz69@gmail.com

Abstract: The application of artificial intelligence tools in teacher education across Africa presents both transformative opportunities and critical challenges. This paper explores emerging issues such as limited digital infrastructure, data privacy concerns, ethical dilemmas, and insufficient policy frameworks that hinder AI integration in teacher training institutions. It highlights the growing impact of AI tools in enhancing curriculum delivery, personalized learning, and performance tracking of pre-service teachers. Despite these benefits, the paper observes that disparities in access and low digital literacy among educators continue to limit full adoption. It recommends collaborative policymaking, capacity-building initiatives,

and investment in localized AI solutions as key strategies for progress. The paper concludes that while AI holds immense promise for revolutionizing teacher education in Africa, a context-specific and inclusive approach remains essential to ensure equity and sustainability.

Paper 37 Title: ENTERPRENEURIAL PEDAGOGY IN HOME ECONOMICS: LEVERAGING AI TO EQUIP AFRICAN TEACHERS FOR FOOD SECURITY CRISES

Authors: Onu; Theresa Chinyere

Affiliation: Presented | By | Department of Home Economics | Enugu State College of Education (Technical) Enugu | ebubeukwuaba07@gmail.com

Abstract: This study explores an AI-enhanced pedagogical framework designed to empower Home Economics teachers in Africa with adaptive tools for fostering entrepreneurship, promoting sustainable food practices, and enhancing resilience to food security crises. Focusing on case studies conducted in Nigeria, the research evaluates the integration of AI-driven platforms into teacher training programs. Findings reveal a 40% improvement in teachers' capacity to embed food security concepts within the curriculum, alongside heightened student engagement in entrepreneurial initiatives. The study underscores the dual potential of artificial intelligence to personalize teacher training and scale context specific, community based solutions. It argues that repositioning Home Economics as a strategic driver of food security innovation necessitates targeted policy reforms, infrastructural investment, and the co-creation of AI solutions that reflect local realities.

Paper 39 Title: EVALUATION OF ARTIFICIAL INTELLIGENCE ON THE ACADEMIC ACHIEVEMENT OF STUDENTS IN CHEMISTRY

Authors: GAMBO M. SALJABA

Affiliation: International Conference on Artificial Intelligence and Education (ICAIED 2025) University of Kigali – Rwanda | BY | Gambosaljaba2@mail.com

Abstract: The study evaluated the performance of Artificial Intelligence in teaching Chemistry. The study employed quasi-experimental research design of pre-test, post-test control group. The effects of two strategies AI and conventional teaching methods on the academic achievement were examined. The design was specific with non-randomized control group and non-equivalent groups. The population for this

study consisted of J.S.S II students in Biu Local Government Area in Borno State, Nigeria. Purposive sampling technique was adopted and used to select schools for the study. Out of the existing public secondary schools in Biu Local Government Area, two of them were selected for this study. The subjects were intact group from the selected schools. Chosen schools were randomly assigned to experimental and control group while students in the sample schools remained in their in-tact classes. The only instrument used for data collection was "Chemistry Achievement Test (CAT)". CSAT contains 50 multiple choice items. The topics which were chosen were taught using conventional method shared by five Chemistry teachers. Results show a calculated t-value of 171.23 for experimental group pretest, posttest mean achievement scores as against 1.96 criterion value and the control group calculated t-value was 138.71 as against 1.96 criterion t-value at .05 significant level this indicates a calculated t-test value of 169.70 while the critical t-value is 1.96 at .05 level of significance It was then recommended teachers should include artificial intelligence in teaching methodology content.

Paper 40 Title: EVALUATION OF TEACHER EDUCATORS READINESS IN ADOPTION OF ARTIFICIAL INTELIGENCE IN SELECTED HIGHER INSTITUTIONS IN ZAMFARA STATE, NIGERIA

Authors: Sulaiman Muhammad Gusau1; Mudashiru Akinyemi 2& Yusuf Habibu1; A PAPER PRESENTION AT INTERNATIONAL CONFERENCE ON; 8TH – 12TH DECEMBER

Affiliation: By | Corresponding author. Email: sulaimanmuhammadgusau@gmail.com | 1Department of Agricultural Education, Zamfara State College of Education, Maru. Nigeria | 2Department of Agricultural Economics, Federal University Dutsin-Ma, Katsina state, Nigeria. | ARTIFICIAL INTELLIGENCE AND EDUCATION. | UNIVERSITY OF KIGALI, RWANDA.

Abstract: This study investigated readiness of teacher educators towards adoption of Artificial intelligence (AI) in educational setting. The study adopted descriptive survey research design. The population of the study included teacher educators from selected higher educational institutions in Zamfara State Nigeria, and a sample size of 120 respondents was used. The study employed a survey instrument to collect data, which was validated for reliability using Cronbach's alpha test. The results showed a high level of readiness among the teacher educators towards the adoption of AI-powered educational tools in teaching. The study also indicates the possibility of adopting AI successfully in educational system in Zamfara state higher institution, most of the teacher educators admitted that they are familiar with Artificial intelligence, 80.8% have the skills to integrate AI

powered tools. This study recommend that, Routine teacher education programm and professional development on the use of AI in teaching should be prioritized and training teachers on how to effectively integrate AI-powered tools and applications into their instructional practices.

Paper 41 Title: EXPLORING INNOVATIVE APPROACHES: INTEGRASTING VIRTUAL CLASSROOMS AND AI FOR ENHANCED ENGLISH LANGUAGE INSTRUCTION

Authors: Dr Ajaps; Christiana Ijeoma

Affiliation: Department of English/General studies, School of Education | Federal College of Education (Technical) Akoka, Lagos

Abstract: This paper delves into the innovative integration of virtual classrooms and artificial intelligence (AI) to enhance English language instruction. It explores how digital platforms and AI-driven tools can create immersive, interactive, and personalized learning experiences. By examining current technologies and pedagogical strategies, the study highlights the potential benefits of virtual classrooms in fostering engagement and improving language proficiency. Additionally, it discusses the role of AI in providing real-time feedback, adaptive learning paths, and data-driven insights to tailor instruction to individual needs. The findings suggest that combining virtual classrooms with AI can significantly advance English language teaching, making it more effective and accessible.

Paper 42 Title: EXPLORING THE ROLE OF ARTIFICIAL INTELLIGENCE IN ENHANCING ASSESSMENT AND FEEDBACK IN AFRICAN TEACHER TRAINING INSTITUTIONS

Authors: ALADENUSI. Oluwakemi (PhD)

Affiliation: By | Federal College of Education (Technical), Akoka, Lagos, Nigeria.

Abstract: Artificial intelligence (AI) has been reshaping education and rapidly transforming educational practices worldwide. It has been offering new possibilities for improving assessment and feedback processes. Similarly in African and Nigerian teacher training institutions, leveraging AI has the potential to enhance the quality and efficiency of evaluating trainee teachers, thereby supporting more effective teaching and learning outcomes. Thus, this study investigated its role in teacher training institutions across Africa. A mixed-methods approach was used, involving 304 participants. Instrument for data collection and the reliability coefficient Independent samples t-test showed that those using Automated Grading Systems (AGS)-supported tools reported significantly higher satisfaction with assessment

practices than those using traditional methods (t(428) = 9.372, p < .0005). Simple linear regression analysis indicated AGS access significantly predicted assessment (t = 12.805, p < .0005) and feedback (t = 14.357, p < .0005). Qualitative responses highlighted faster feedback delivery and reduced grading subjectivity. Limited access to infrastructure and insufficient user training were challenges. Thus, properly implemented AGS can improve assessment quality in teacher education. The study recommends, among others, the gradual integration of AGS-supported tools into institutional assessment systems across Africa.

Paper 43 Title: ECONOMICS, ARTIFICIAL INTELLIGENCE, IMPLICATION FOR TEACHER EDUCATION IN AFRICA.

Authors: Okwuagwu' Fideltin Nwaorisa'1

Affiliation: Wilson Amandi Samuel Department of Economics Benjamin Uwajumogu State College of Education, Ihitte Uboma, Imo State. amandiwilson22@gmail.com |Egesi, Kevin Onyemachi'2 Department of Economics. Abia State College of Education (Technical). fideltin2023@gmail.com, egesikevin@gmail.com |

Abstract: Artificial intelligence (AI) has become one of the defining forces in 21st-century education, influencing curriculum design, instructional strategies, and teacher education programs worldwide. In Africa, teacher preparation for Economics the subject that trains learners in decision-making, productivity, and resource allocation faces unique opportunities and challenges under the AI revolution. This paper investigates how AI intersects with Economics education and teacher education, exploring pedagogical, institutional, and policy implications for African contexts. Drawing on current literature (2021–2025) and global frameworks, the study analyzes emerging trends such as intelligent tutoring, predictive analytics, adaptive assessment, and the re-skilling of teachers. The discussion highlights how AI can enhance conceptual learning in Economics, improve teacher effectiveness, and support equity, while also warning against infrastructural deficits, ethical dilemmas, and cultural misalignments. The article proposes a conceptual framework for sustainable AI integration in African teacher education and concludes with recommendations for curriculum reform, professional development, and policy coherence that will ensure African teacher-education institutions remain responsive, inclusive, and future-ready.

Paper 44 Title: EFFECTIVENESS OF AI POWERED TOOLS TOWARDS SUPPORTING COUNSELEES: IMPLICATIONS FOR TRAINING GUIDANCE AND COUNSELING EDUCATORS?

Authors: Samson Adewale, AKINTEYE

Affiliation: Department of Educational Foundations Oyo State College of Education, Lanlate, Oyo state, Nigeria oniladoagba@gmail.com, |

Abstract: location, time constraints and As AI technology increasingly integrates with mental health support systems. It is essential to examine the benefit and limitations these foods have in counseling settings thus the study investigates the effectiveness of AI powered tools in supporting counselee with a focus on implications for training guidance and counselling educators. It also highlights the potentials of AI powered tools in enhancing counselling practices and the need for educators to develop skills in using these tools effectively. The regular face-to-face counselling has been found to be limited by individuals also feeling uncomfortable or stigmatized seeking face-to-face counselling. When AI powered conselling is effectively utilized it will provide a sense of anonymity reducing stigma associated with seeking mental health support. AI powered counselling has also been established to provide opportunity for people seeking mental health support more widely available. Limitations towards the adoption of the technology were reviewed among which were integration of human roles with AI powered tools, needs for policy development towards the integration and infrastructural deficit for the implementation. Implication towards the training of guidance counselling educators on ethics, vocational and career counselling are far reaching. Critical recommendation includes serious evaluation from time to time of AI output for bias and accuracy, priotising client welfare and constant maintenance of clinical oversight by the counsellors to mention but a few.
therapists' availability. Some

Paper 45 Title: EXAMINING THE ROLE OF ARTIFICIAL INTELLIGENCE IN IMPLEMENTING THE TEACHER EDUCATION CURRICULUM IN NIGERIA

Authors: Akaraonye; James

Affiliation: Department of Curriculum & Instruction, AIFUE Owerri, Imo State | james.akaraonye@alvanikoku.edu.ng

Abstract: This study examined the role of Artificial Intelligence (AI) in the implementation of the teacher education curriculum in Imo State, Nigeria. The objectives were to ascertain the extent of AI adoption, determine the extent of AI

tool utilization, and establish the extent to which AI enhances curriculum implementation. Guided by three research questions, the study adopted a descriptive survey design and focused on lecturers in accredited, government-owned teacher education institutions. The population consisted of 926 lecturers across four institutions, from which a sample of 276 was drawn using Yamane's formula, purposive, and stratified random sampling techniques. Data were collected with a validated questionnaire titled Artificial Intelligence in Teacher Education Curriculum Implementation Questionnaire (AITEQ), which achieved a Cronbach Alpha reliability coefficient of 0.81. Data analysis employed mean and standard deviation. Findings revealed that the extent of AI adoption in teacher education curriculum implementation was low, with limited integration of AI concepts, policies, and assessment tools. Similarly, the utilization of AI tools for curriculum delivery was generally low, except for the use of AI in lecture preparation, which recorded a relatively high extent. In contrast, results showed that AI enhances curriculum implementation to a high extent, particularly in improving access to innovative resources, promoting efficiency, fostering creativity, and supporting continuous assessment. The study concluded that although AI adoption and utilization remain at a low level in teacher education institutions in Imo State, its application were used significantly enhances curriculum implementation. It was recommended that institutions integrate AI concepts and practices into curricula, government provide supportive policies and infrastructure, and teacher educators and trainees undergo continuous capacity building in digital and AI competencies.

Paper 46 Title: FROM CHALKBOARDS TO CHATBOTS: RETHINKING TEACHER PREPARATION IN THE AGE OF ARTIFICIAL INTELLIGENCE IN AFRICA

Authors: Dauda Muhammada; Ibrahim Adamu Mohammedb

Affiliation: aDepartment of Science Education, Federal University of Kashere, Gombe State, Nigeria | dawudbnmuhammad@gmail.com | bDepartment of Mathematics and Computer Science Education, College of Education Billiri, Gombe State, Nigeria | ibrahimadamumohammed@coebilliri.edu.ng

Abstract: Artificial Intelligence (AI) is revolutionizing education by reshaping how teachers are trained, supported, and equipped for modern classrooms. In African educational systems, often challenged by resource constraints, unequal access, and limited teacher capacity, AI presents both promising opportunities and notable risks. This paper explores how AI integration affects teacher education across diverse African settings, emphasizing changes in pedagogy, technology use, and skill development. Based on both theoretical and empirical sources, the study advocates

for a shift in teacher training from traditional content delivery to more flexible, inquiry-based, and data-informed teaching approaches. Using the TPACK and SAMR models, the paper conceptualizes how AI can improve instructional strategies and reflective teaching practices. Key areas of focus include AI-powered assessments, customized learning experiences, ethical implications, and digital inclusion. The paper concludes with a strategic framework for embedding AI literacy, ethical understanding, and data analysis skills into teacher education, aiming to empower African educators as active contributors to the evolving educational landscape rather than passive users of AI technologies.

Paper 47 Title: GENETIC SIMILARITIES AND INTELLIGENCES IN THE ADVENT OF ARTIFICIAL INTELLIGENCE

Authors: IBRAHIM SADI ROGO; KADUNA STATE; NIGERIA; Corresponding:

Affiliation: BY | DEPARTMENT OF EDUCATIONATIONAL PSYCHOLOGY FEDERAL UNIVERSITY OF EDUCATION, ZARIA |

Abstract: This paper focus on genetic similarities and intelligences, some school of thought states that, heredity plays a significant role in determining human intelligence and character traits, personality. The paper also viewed the definitions of genetics, genetic psychology, genetics and environment, Inherited Trait, hereditarianism theory and some theories of intelligence, such as two-factor and group factor theory. In essence AI is a powerful tool for unlocking the secrets of genetic basis of human intelligence, which the knowledge gained from human genetics simultaneously informs the design and capabilities of artificial intelligence systems.

Paper 48 Title: HARNESSING COMPUTATIONAL MATHEMATICS AND ARTIFICIAL INTELLIGENCE IN STEM EDUCATION TO FOSTER ECONOMIC DIVERSIFICATION IN NIGERIA

Authors: Fadara Oludele Ojo

Affiliation: Department of Mathematics, Oyo State College of Education, Lanlate | Email: fadaraoa@gmail.com

Abstract: Since the discovery of oil in Nigeria, the main source of income has shifted from agriculture to crude oil. However, fluctuations in oil prices over time and the mismanagement of funds have hindered growth and development in key areas. Moving forward, Nigeria needs to diversify its economy from oil to non-oil sectors to

avoid future crises resulting from global oil price instability. This paper enumerates the role that integrating computational mathematics and artificial intelligence (AI) into STEM (Science, Technology, Engineering, and Mathematics) education can play in economic diversification. The researcher positions integrating computational mathematics and AI into STEM education with a view to equip the new generation with skills to navigate the emerging field of informatics and renewable energy. The paper recommends curriculum reform and professional development for teachers to support diversification.

Paper 49 Title: Indigenous Knowledge and Artificial Intelligence, Balancing Modern Intervention and Traditional Experience in Africa.

Authors: EJIKA Sambo (PhD)

Affiliation: DEPARTMENT: Business Education, COLLEGE OF EDUCATION ZING, TARABA STATE | EMAIL: samboejika@gmail.com |

Abstract: This study investigates the interplay between Indigenous Knowledge and Artificial Intelligence (AI) in teacher education in Africa. The objective is to identify pathways for integrating modern technological educational innovations without undermining traditional epistemologies. Ex-post facto research design was adopted, and relied on secondary data (documented experiences, policy documents from various teacher education institutions, journal articles etc) subjected to content validity, before analyzing qualitatively. Findings reveal that, the application of AI in teacher training tends to prioritize Western Educational frameworks, often sidelining indigenous values such as communal learning and local languages. While it concludes that a balanced approach which involve harmonizing AI with indigenous contents is important for sustainable, culturally responsive teacher education, it recommends the design of culturally sensitive AI tools, inclusive policy reforms, and integration of indigenous perspectives into digital teacher education.

Paper 50 Title: IMPACT OF ARTIFICIAL INTELLIGENCE ON CHEMISTRY EDUCATION TO TEACHING AND LEARNING EXPERIENCE FOR AFRICAN INSTITUTIONS

Authors: DR. MUNDI Sule

Affiliation: INSTITUTION: FCT COLLEGE OF EDUCATION, ZUBA – ABUJA | DEPARTMENT: Chemistry |

Abstract : This research work was an attempt to investigate the application of Artificial Intelligence tools into chemistry education, as a means of enhancing

critical analytical and creative thinking during the learning process of the subject-matter in institution of learning in Africa. This study examines the significance of AI to the teachers and students and the challenges associated with AI tools to chemistry education, with focus on Nigeria Colleges of education. This study provides recommendations for development of innovative approaches to learning chemistry education thereby enhancing students learning outcomes and preparing future chemistry teachers.

Paper Title 51 : IMPACT OF ARTIFICIAL INTELLIGENCE (AI) TOOLS ON SOCIAL STUDIES STUDENTS IN COLLEGES OF EDUCATION IN NORTH CENTRAL NIGERIA

: DR. IBRAHIM Sa'ad

Affiliation FCT COLLEGE OF EDUCATION, ZUBA – ABUJA

Abstract: This study intends to examine the impact of Artificial Intelligence tools on social studies students in colleges of education in North Central Nigeria. The research investigates the potential benefits and problems of integrating AI personalized learning, efficient information processing, and enhanced collaboration. The study explores the effects of AI tools on student learning, academic performance, and attitudes towards social studies, as well as to identify potential challenges that are related to the suing of AI to learning outcomes. This study provides valuable insights into the effectiveness of AI tools in enhancing teaching and learning processes in social studies education, including strategies for effective AI integration, enabling teachers to harness the potential of AI to improve student learning outcomes and academic achievement in Nigerian colleges of education.

Paper Title 52 : Harnessing AI Digital Tools for Teaching and Learning Clothing and Textiles Production in Colleges of Education, North Central, Nigeria.

Author : RITA Onyeizu (PhD)

Affiliation : Home economics department, FCT COLLEGE OF EDUCATION, ZUBA – ABUJA

Abstract : This study explores the use of Artificial Intelligence digital tools to enhance teaching of clothing and textiles production. Integration of AI digital tools offers innovative opportunities for enhanced learning experiences in the production of clothing and textiles. The potential of AI tools in teaching and learning clothing and Textiles production includes applications in pattern making, colour wheels, textiles design, fashion forecasting, and design trends. This research adopts survey approach design. Two specific objectives with two research questions were stated, and two null hypotheses formulated. Mean and standard deviation were used to answer the research questions, and Null hypotheses tested at 0.05 level of significance. Findings reveal that AI digital tools such as Virtual Design Assistants, personalized learning platforms, Automated grading and feedback stimulations, virtual labs, Chatbots and virtual teaching assistants, significantly improves teaching and learning of clothing and Textile production.

Paper 53 Title: INSTITUTION: COLLEGE OF EDUCATION AND LEGAL STUDIES, NAFADAGOMBE STATE

Authors:

Affiliation: INSTITUTION: COLLEGE OF EDUCATION AND LEGAL STUDIES, NAFADAGOMBE STATE | Name: Department: General Education Topic: |

This study investigated AI-driven mental health support systems in African teacher education institutions, it adopted experimental design. The population is 520 teacher trainees in colleges in Northeast, Nigeria, General Health Questionnaire (GHQ-28), Academic Stress Scale, and AI behavioral analytics were used in data collection. Chi-square tests were used in data analysis. The findings revealed that AI early detection systems attained 78% accuracy in identifying at- risk students. The treatment group experienced a 45% increase in intervention response times and a 31% decrease in dropout rates. Nonetheless, 69% of participants expressed concerns regarding data privacy, while infrastructure challenges impacted 54% of institutions. Issues related to cultural adaptation were identified in 38% of AI interactions. Thus, recommended that development of culturally sensitive AI algorithms, establishment of comprehensive data protection frameworks, training of counselors in AI tool integration, creation of multilingual support interfaces, and implementation of hybrid human-AI intervention models to optimize student outcomes. | Name: Bashir ABDULLAHI Department: Sharia and Civil Law Topic:

Paper Title 54 : Integrating AI in English Language Teacher Education: Opportunities and Challenges in Nigerian Colleges of Education

Author: Umar Ahmed Wadu

Affiliation: Department of English, Federal College of Education, Yola

Abstract : This paper explores the challenges and opportunities associated with the adoption of artificial intelligence (AI) in English language teacher education programs in Nigerian colleges of education. While AI technologies hold transformative potential for enhancing teaching methodologies and learner engagement, several obstacles impede their integration, including infrastructural limitations, inadequate training for educators, and resistance to change. Through a comprehensive analysis of existing literature and relevant case studies from Nigerian institutions, the paper aims to identify best practices and strategies for overcoming these challenges. It also emphasizes the potential for AI to foster innovative teaching approaches, improve educational outcomes, and bridge the gap between traditional pedagogical methods and modern technological advancements in English language education in Nigeria.

Keywords Artificial Intelligence, Pedagogy, Digital Literacy, Innovations, Professional Development, Learning Outcomes

Paper title 55 : Digital Mental Health Support for AI Early Detection and Intervention in Teacher Training Programs in Africa

Abstract: UMAR, Ibrahim Usman

Affiliation: Department: General Education Topic:

Abstract : This study investigated AI-driven mental health support systems in African teacher education institutions, it adopted experimental design. The population is 520 teacher trainees in colleges in Northeast, Nigeria, General Health Questionnaire (GHQ-28), Academic Stress Scale, and AI behavioral analytics were used in data collection. Chi-square tests were used in data analysis. The findings revealed that AI early detection systems attained 78% accuracy in identifying at- risk students. The treatment group experienced a 45% increase in intervention response times and a 31% decrease in dropout rates. Nonetheless, 69% of participants expressed concerns regarding data privacy, while infrastructure challenges impacted 54% of institutions. Issues related to cultural

adaptation were identified in 38% of AI interactions. Thus, recommended that development of culturally sensitive AI algorithms, establishment of comprehensive data protection frameworks, training of counselors in AI tool integration, creation of multilingual support interfaces, and implementation of hybrid human-AI intervention models to optimize student outcomes.

Paper 56 Title: NAVIGATING THE ETHICAL DILEMMA OF GENERATINVE AI IN HIGHER EDUCATIONAL INSTITUTION IN NIGERIA USING THE TOE FRAMEWORK

Author: PROF. YUSUF BENSON BAHA; T

INSTITUTION: ADAMAWA STATE COLLEGE OF EDUCATION, HONG

Abstract: Generative AI tools stand at the threshold of innovation; the erosion of the long standing values of creativity; critical thinking; authorship; research in higher education. This research crafted a novel framework from the technology; organization; environment (TOE) framework to guide higher educational institutions in Nigeria to navigate the ethical dilemma of generative AI. A questionnaire was used to collect data from twelve higher institutions among lecturers; students; researchers across the six (6) geopolitical zones of Nigeria. The structural equation modeling was used to analyze the data using the SPPS Amos version 23. The results revealed that factors such as perceived risks of generative AI; Curriculum support; institutional policy; perceived generative AI trends positively impact the need for a generative AI ethical framework in higher educational institutions in Nigeria. Furthermore; the study contributes to the adoption of theory to navigate the ethical dilemma in the use of generative AI tools in higher educational institutions in Nigeria. It also provides some practical implications that suggest the importance of inculcating ethical discussions into the curriculum as part of institutional policy to create awareness; guidance on the use of generative AI.

Keyword: Generative AI; Higher Education; Framework; Ethical;

Paper Title 57 : AI and Emerging Issues: Implications for Teacher Education Delivery

Author: KUMBA AWUMTIYA ISA

Affiliation: ADAMAWA STATE COLLEGE OF EDUCATION, HONG

Abstract: The integration of Artificial Intelligence (AI) in education is reshaping teaching and learning globally, and its implications for teacher education cannot be overemphasized. As emerging technologies increasingly influence curriculum

delivery, teacher preparation programs must be responsive to new pedagogical realities. This paper explores the intersection of AI and emerging educational challenges, assessing how teacher education institutions can adapt to maintain relevance and effectiveness. The study highlights key issues such as ethical use of AI, teacher capacity building, curriculum reform, and digital equity. It concludes with policy and institutional recommendations aimed at equipping teacher trainees for AI-enhanced classrooms.

Keywords: Artificial Intelligence, teacher education, emerging issues, digital pedagogy, curriculum reform.

Paper Title 58 : AI and Emerging Issues: Implications for Teacher Education Delivery

Author : YOHANNA PETER

Affiliation : ADAMAWA STATE COLLEGE OF EDUCATION HONG, DEPARTMENT: PHYSICAL AND HEALTH EDUCATION

Abstract : The rapid advancement of artificial intelligence technologies presents both unprecedented opportunities and significant challenges for teacher education programs worldwide. This paper examines the transformative implications of AI integration on teacher preparation, pedagogical delivery methods, and professional development frameworks. Through analysis of current trends and emerging applications, I identify key areas where AI technologies are reshaping teacher education delivery, including personalized learning pathways, intelligent tutoring systems, automated assessment tools, and virtual classroom environments. The research highlights critical considerations for curriculum redesign, faculty development, and institutional policy formation while addressing ethical concerns regarding data privacy, algorithmic bias, and the human-AI relationship in educational contexts. My findings suggest that successful AI integration in teacher education requires strategic planning, comprehensive faculty training, and careful attention to maintaining the essential human elements of teaching practice.

Keywords: artificial intelligence, teacher education, educational technology, professional development, pedagogical innovation.

Paper Title 59 : Artificial Intelligence Innovation In Education: Transforming Teaching and Learning For the Digital Age

Author : MOHAMMED Adamu

Affiliation : BIOLOGY DEPARTMENT, ADAMAWA STATE COLLEGE OF EDUCATION, HONG

Abstract : Artificial Intelligence (AI) is revolutionizing educational contexts globally by providing new avenues for improving teaching and personalizing learning. This paper presents an overview of new AI technologies for education, discusses the pedagogical implications and considers the trajectory for their adoption. Based on the recent literature and practice from research prototypes, I aim to learn how AI technologies can contribute to pedagogies and tackle challenges and concerns. The results show the AI-enabled education systems have the potential of significantly improving student outcomes, easing the administrative load, and promoting an equity of learning environment. Positive outcomes are only possible when educators receive extensive training, curricula are adapted, and digital equity is appropriately addressed.

Keywords: Artificial intelligence, Educational technology, Teaching innovation, Personalized learning, Digital transformation.

Paper Title 60 : AI-Based Professional Development Platforms for In-Service Teachers in Africa: Opportunities, Challenges, and Policy Implication

Author: ADAMU, Abubakar

Affiliation : Economics Department, ADAMAWA STATE COLLEGE OF EDUCATION, HONG

Abstract: Artificial Intelligence (AI) is transforming education globally, presenting innovative avenues for enhancing teacher development, particularly in resource-constrained regions like Africa. This paper examines the role of AI-powered professional development (PD) platforms in supporting in-service teachers by offering personalized, scalable, and context-aware learning opportunities. Using both global and African case studies, the study assesses the effectiveness, challenges, and policy considerations surrounding AI-based PD tools. The findings underscore the promise of adaptive learning technologies, real-time feedback systems, and intelligent recommendation engines in strengthening the professional capacity of African educators. Nonetheless, critical obstacles such as inadequate digital infrastructure, data protection issues, and limited AI competence must be tackled through coordinated policy action, strategic investment, and

institutional transformation. The paper concludes with practical recommendations for integrating AI into teacher development frameworks across Africa.

Keywords: Artificial Intelligence, Professional Development, In-Service Teachers, Teacher Education, Educational Technology

Paper Title61 : Harnessing Digital Skills and Artificial Intelligence for Sustainable Goat Production in Rural Nigeria

Author: Dr. Ahmed Bazza Lawan

Affiliation: Department of Agricultural Education, Federal Capital Territory, College of Education, Zuba Abuja, Nigeria

Abstract: Nigeria, with an estimated goat population of 88 million, leads Africa in small ruminant ownership, primarily managed by smallholder farmers in rural areas. Despite this potential, productivity remains sub-optimal due to entrenched traditional practices, high disease prevalence, poor feeding strategies, and limited market access. This paper posits that then integration of digital skills and Artificial Intelligence (AI) presents a transformative pathway for sustainable goat production in rural Nigeria. It explores the current challenges of goat farming, defines the scope of relevant digital and AI tools from mobile record-keeping to predictive health analytics and assesses the digital literacy and infrastructural realities in rural communities. The paper recommends a multi-stakeholder implementation strategy involving community training, cost-effective USSD-based technologies, and robust policy support to bridge the digital divide. By leveraging these innovations, rural farmers can achieve enhanced productivity, improved animal health, and greater market integration, thereby secure their livelihoods and contribute to national food security.

Paper Title 62: Artificial Intelligence and Entrepreneurship Education: A Strategic Framework for Sustainable Economic Development in the African Context":

Authors: Luqman Afolabi, Ruth Odengo & Thomas Tarus

Affiliation: Graduate school, University of kigali , Rwanda.

Abstract : Africa stands at a critical juncture, with its youthful demographic and structural challenges shaping the trajectory of economic development. This paper proposes a strategic framework for integrating Artificial Intelligence (AI) into entrepreneurship education as a lever for climate resilience and sustainable growth. Against the backdrop of the Fourth Industrial Revolution, Africa faces persistent deficits in digital infrastructure, electricity access, and internet penetration, which constrain AI adoption. The study emphasizes Climate-Smart Agriculture (CSA) as a priority sector, where AI-driven innovations such as predictive analytics, mechanization platforms, and geospatial tools can close productivity gaps and enhance food security. Drawing on case studies from Rwanda and Nigeria, the paper contrasts policy-driven and market-driven models of AI integration, highlighting the role of innovation hubs, mission-driven curricula, and frugal technologies in bridging systemic barriers. Using a mixed-methods approach, the research synthesizes evidence on AI's transformative potential in higher education and entrepreneurship ecosystems, aligning with the African Union's Continental AI Strategy and global sustainability goals. Findings underscore the need for interdisciplinary pedagogy, localized data ecosystems, and enabling governance frameworks to foster "Afri-AI-Preneurs" capable of addressing climate and economic vulnerabilities. The paper concludes that embedding AI literacy and entrepreneurial competencies in education is not optional but imperative for Africa's inclusive digital future.

Keywords: Artificial Intelligence, Entrepreneurship Education, Climate-Smart Agriculture, Africa, Digital Transformation, Sustainable Development.

ABSTRACT 3: | DEPARTMENT: PHYSICAL AND HEALTH EDUCATION |

Abstract :The rapid advancement of artificial intelligence technologies presents both unprecedented opportunities and significant challenges for teacher education

programs worldwide. This paper examines the transformative implications of AI integration on teacher preparation, pedagogical delivery methods, and professional development frame works. Through analysis of current trends and emerging applications, I identify key areas where AI technologies are reshaping teacher education delivery, including personalized learning pathways, intelligent tutoring systems, automated assessment tools, and virtual classroom environments. The research highlights critical considerations for curriculum redesign, faculty development, and institutional policy formation while addressing ethical concerns regarding data privacy, algorithmic bias, and the human-AI relationship in educational contexts. My findings suggest that successful AI integration in teacher education requires strategic planning, comprehensive faculty training, and careful attention to maintaining the essential human elements of teaching practice. | Keywords: artificial intelligence, teacher education, educational technology, professional development, pedagogical innovation. | INSTITUTION: ADAMAWA STATE COLLEGE OF EDUCATION, HONG ABSTRACT 4: | DEPARTMENT: BIOLOGY | TOPIC: Artificial Intelligence Innovation In Education: Transforming Teaching and Learning For the Digital Age | Artificial Intelligence (AI) is revolutionizing educational contexts globally by providing new avenues for improving teaching and personalizing learning. This paper presents an overview of new AI technologies for education, discusses the pedagogical implications and considers the trajectory for their adoption. Based on the recent | literature and practice from research prototypes, I aim to learn how AI technologies can contribute to pedagogies and tackle challenges and concerns. The results show the AI-enabled education systems have the potential of significantly improving student outcomes, easing the administrative load, and promoting an equity of learning environment. Positive outcomes are only possible when educators receive extensive training, curricula are adapted, and digital equity is appropriately addressed. | Keywords: Artificial intelligence, Educational technology, Teaching innovation, Personalized learning, Digital transformation. | INSTITUTION: ADAMAWA STATE COLLEGE OF EDUCATION, HONG

ABSTRACT 5: | DEPARTMENT: Economics |

Artificial Intelligence (AI) is transforming education globally, presenting innovative avenues for enhancing teacher development, particularly in resource-constrained regions like Africa. This paper examines the role of AI-powered professional development (PD) platforms in supporting in-service teachers by offering personalized, scalable, and context-aware learning opportunities. Using both global and African case studies, the study assesses the effectiveness, challenges, and policy considerations surrounding AI-based PD tools. The findings underscore the promise

of adaptive learning technologies, real-time feedback systems, and intelligent recommendation engines in strengthening the professional capacity of African educators. Nonetheless, critical obstacles such as inadequate digital infrastructure, data protection issues, and limited AI competence must be tackled through coordinated policy action, strategic investment, and institutional transformation. The paper concludes with practical recommendations for integrating AI into teacher development frameworks across Africa. | Keywords: Artificial Intelligence, Professional Development, In-Service Teachers, Teacher Education, Educational Technology

Paper 63 Title: INSTITUTION: ADEYEMI FEDERAL UNIVERSITY OF EDUCATION, ONDO

Authors:

Affiliation: INSTITUTION: ADEYEMI FEDERAL UNIVERSITY OF EDUCATION, ONDO | DEPARTMENT: Social Studies | Nigeria is one of the countries that is yet to develop and a wholistic Artificial Intelligence (AI) Policy for inclusion into her system of education despite the fact that the influence of AI on the youth is enormous. And there is need for a national direction on this to give direction to the usage and ensure the appropriate application of AI in Nigeria. Artificial Intelligence refers to a compiled systems of computer that can perform the tasks typical of human intelligence. Such tasks include learning, teaching, problem-solving, perception, reasoning and language understanding. Artificial intelligence systems use algorithms and data to make decisions and implement the decisions. AI is making innovation and technological development easy and information easily accessible. With AI, virtually every human task is made simpler and achievable within a short time at a very low cost and with little or no physical or mental assertion. While AI has been incorporated into a lot of human endeavors on Nigeria, there is no evidence that it has been fixed into the learning content of formal education in Nigeria. This paper examined the need for the application of AI into the teaching and learning culture of schooling in Nigeria. The potential impact of inculcating the skills of AI into the educational system of the country were enunciated, which include personalized learning, intelligent tutoring, content creation, learning analytics and automated grading. AI is obviously revolutionizing the world and nations of the world are reinvesting their educational systems in the height of the new world order that AI has brought. Nigeria too needs to make her education more relevant to the needs of the changing societe as AI provides. | DEPARTMENT: Primary Education | The study examined the use of AI tools as personalised instructional strategies in reading among primary school pupils. The study used personalised learning theory as the theoretical framework and used primary school pupils and teachers as the

population. From ten primary schools, chosen at random, the study selected all the teachers in those schools as samples and purposively selected five class captains of primary 6 making a total of one hundred and twenty-seven samples. Three research instruments were used, a ten item four point Likert scale questionnaire, observation and in-depth interviews. The structured questionnaire was administered on teachers, in-depth interviews on five teachers and the class captains and the observation was carried out in the class. For quantitative data, descriptive analysis was used while thematic analysis was used for qualitative data. It was revealed that AI tools are neither available nor used in schools to personalised reading and the study recommended that AI tools awareness be crated and provided in primary schools. | DEPARTMENT: Economics

Paper Title 64: Advancing the imperatives for Artificial Intelligence in the Educational System of Nigeria

Author : AKINTUNDE, Samuel Akinrinola, Professor
Affiliation : Social Studies Department

Nigeria is one of the countries that is yet to develop and a wholistic Artificial Intelligence (AI) Policy for inclusion into her system of education despite the fact that the influence of AI on the youth is enormous. And there is need for a national direction on this to give direction to the usage and ensure the appropriate application of AI in Nigeria. Artificial Intelligence refers to a compiled systems of computer that can perform the tasks typical of human intelligence. Such tasks include learning, teaching, problem-solving, perception, reasoning and language understanding. Artificial intelligence systems use algorithms and data to make decisions and implement the decisions. AI is making innovation and technological development easy and information easily accessible. With AI, virtually every human task is made simpler and achievable within a short time at a very low cost and with little or no physical or mental assertion. While AI has been incorporated into a lot of human endeavors on Nigeria, there is no evidence that it has been fixed into the learning content of formal education in Nigeria. This paper examined the need for the application of AI into the teaching and learning culture of schooling in Nigeria. The potential impact of inculcating the skills of AI into the educational system of the country were enunciated, which include personalized learning, intelligent tutoring, content creation, learning analytics and automated grading. AI is obviously revolutionizing the world and nations of the world are reinvesting their educational systems in the height of the new world order that AI has brought. Nigeria too needs to make her education more relevant to the needs of the changing societe as AI provides.

Paper 65 Title: Exploring the Potential of Chatbots and Virtual Assistance in Language Learning in the era of Artificial Intelligence

Authors: Aliyu Mohammed Nasir, Mohammed Sani Abdullahi & Abubakar Abba

Affiliation: INSTITUTION: AMINU SALEH COLLEGE OF EDUCATION, AZARE, BAUCHI STATE | **DEPARTMENT- English |**

Paper Title 64: Advancing the imperatives for Artificial Intelligence in the Educational System of Nigeria

Author : AKINTUNDE, Samuel Akinrinola, Professor
Affiliation : Social Studies Department

3 NAME- Sagir Abdulkadir and Aminu Umar Ningi **DEPARTMENT- Physical and Health Education** TOPIC- Readiness of health education teacher for Implementing an AI-Driven Community Based Peer Health Education Programme | Abstract 4 NAME- Baraya, Kabiru Aliyu **DEPARTMENT- Chemistry Education** TOPIC- Artificial Intelligence (AI) Training in Chemistry Education for Entrepreneurship in African Institutions Artificial Intelligence (AI) is one of the emerging technologies that attempts to simulate human problem- solving method and has gained attention worldwide. This study investigates the entrepreneurial roles in chemistry education that will drive innovative skills and transformation within the educational institutions in Africa. The chemistry entrepreneurship is the art of commercializing innovations from chemistry for a broad audience outside the classroom. The article identified the benefits, challenges, essential platforms and AI tools for chemistry entrepreneurship educators. The study employed a descriptive survey design, questionnaire and professional consultations. About 400 questionnaires were distributed and only 365 were retrieved and analyzed using statistical techniques. The results revealed acquaintance with or otherwise of the 06 platforms and 12 AI tools needed for chemistry educators in effective teaching, entrepreneurship and research. Based on the research findings, a recommendation among others, the academic institutions, government and industries should be professionally trained on AI. | **DEPARTMENT: PRIMARY EDUCATION STUDIES** | TOPIC: Integrating Artificial Intelligence in Teaching Primary School Children. | This paper discusses the integration of AI in the teaching and learning in the primary schools. Primary schools are incubators for next generation thinkers, scientists, leaders,

educators and inventors. It is often said that children are leaders of tomorrow, primary education helps to produce good individuals in the society. It emphasizes on the need to pay more attention on primary education in terms of specialist teachers, improvisation of equipment and facilities to teach using the AI. Primary education also helps produce well cultured and wise individuals. Recommendations were made on how to improve education from the grassroots through AI. Way forward were also provided where primary school teachers would be trained and retrained on different methodologies of teaching and improvisation of relevant instructional materials.

Paper 65 Title: Harnessing the Potentials of Artificial Intelligence in an English as a Second Language (ESL) Teaching Situation

Authors: Prof. Asabe Sadiya Mohammed

Affiliation: INSTITUTION: AMINU SALEH COLLEGE OF EDUCATION, AZARE, BAUCHI STATE | Abstract 1. **DEPARTMENT- English |**

Abstract: The integration of Artificial Intelligence (AI) into education is reshaping teaching and learning experiences across disciplines. In English as a Second Language (ESL) contexts, particularly within Nigeria's multilingual society, AI presents a transformative opportunity to address persistent challenges such as large class sizes, lack of access to native speakers, inconsistent exposure to English, and the socio-economic constraints faced by many learners. This paper explores the potentials of AI-driven tools and technologies—such as intelligent tutoring systems, automated feedback generators, speech recognition software, and adaptive learning platforms—in enhancing ESL instruction and learner engagement in such resource-constrained environments. Drawing from current research and practical classroom applications, the study highlights how AI can support personalized learning, provide instant and context-sensitive feedback, and simulate real-world language use through conversational agents and virtual environments. Furthermore, it examines how AI can democratize access to quality learning experiences, bridging the educational divide caused by poverty and infrastructural deficits. The paper also discusses ethical implications and the importance of equipping teachers with the necessary skills to effectively integrate AI in the classroom.

Paper 55 Title: Effect Of Ai On Monitoring And Implementation Of Universal Basic Education Programme In Upper Basic Schools In Nigeria

Authors: Dr. ABRAHAM Yusuf Gana

Affiliation: INSTITUTION: FEDERAL COLLEGE OF EDUCATION JAMA'ARE BAUCHI STATE | DEPARTMENT: Curriculum and Instruction

Abstract: This study investigated the effect of AI on monitoring and implementation of Universal Basic Education programme in upper Basic Schools in Kwara North Senatorial zone of the State, two research questions and two research hypotheses guided the study. The descriptive survey design will be adopted for the study. The population of the study comprised of 8252 teachers. A sample of 413 teachers from 43 upper basic schools constituted the sample of the study. A-20 items structured questionnaire will be developed by the researcher titled effect of AI on monitoring and implementation of Universal Basic Education programme in upper basic schools questionnaire (EMIUBSQ) will be used for data collection. Descriptive statistics of means and standard deviations will be used to answer research questions while the chi-square x2 test of goodness of fit will be used to test the hypotheses at 0.05 level of significance. The findings revealed that, monitoring using AI significantly affect funding and provision of welfare packages for the implementation of Universal Basic Education Programme in the upper basic schools in the study area. Based on the findings, it was recommended among others that government through SUBEB should ensure that the supervisors for the Universal Basic Education programme maintain a link between the teachers and the government in ensuring that the UBE programme is well funded.

Paper 56 Title: Integrating artificial intelligence (AI) in secondary school mathematics

Authors: NAME: ATIKU; Ahmad Malle
Affiliation: INSTITUTION: FEDERAL COLLEGE OF EDUCATION, JAMA'ARE |DEPARTMENT: Mathematics

Abstract: Integrating artificial intelligence (AI) in secondary school mathematics can significantly enhance the learning experience by providing personalized instruction, immediate feedback, and engaging learning tools. AI-powered platforms can adapt to individual student needs, identify knowledge gaps, and offer targeted support. This approach can improve student engagement, problem-solving skills, and overall performance in mathematics. This study looked at the teachers' perceptions in terms of perception, attitude, and experience towards incorporating AI into mathematics education in senior secondary school in Jama'are, Bauchi State, Nigeria. Three research questions were raised to gather data from the respondents. A descriptive survey research design was used in this study with a sample

comprised of 40 respondents, with 20 teachers from private and public senior secondary schools each selected from 10 schools. The instrument used was the Teacher Perception Towards AI Questionnaire (TPTAQ) with a reliability coefficient of 0.77. The results revealed that the perceptive level of the teachers towards AI integration was found to be high in terms of perception, attitude, and experience, showing that teachers embrace the use of AI in mathematics education in schools.

Paper 57 Title: INSTITUTION: Kaduna State College of Education Gidan Waya

Authors:

Affiliation: INSTITUTION: Kaduna State College of Education Gidan Waya | DEPARTMENT: Biology

Abstract: This study evaluates the need for teacher training on artificial intelligence. However, many schools struggle to implement it effectively due to the necessity for teachers to receive adequate training. A structured questionnaire was used to collect data from 150 lecturers from Kaduna State College of Education, Gidan Waya, Kaduna State, on their awareness, access to training, digital competence, and attitudes toward AI integration. Offering suggestions for implementing AI fairly and responsibly within educational settings. Central to these strategies is the creation of comprehensive training programs for teachers, aimed at enhancing digital skills, AI usage, and flexibility. Findings revealed that teachers' training on the use of AI is essential, as it improves their technological skills and promotes proper and constructive learning opportunities within educational settings.

Paper 57 Title: Teacher Education in The Age of AI: Preparing for The Future of Learning

Authors: AKU Ayuba Ambi

Affiliation: INSTITUTION: Kaduna State College of Education Gidan Waya | DEPARTMENT: Biology

Abstract: This study evaluates the need for teacher training on artificial intelligence. However, many schools struggle to implement it effectively due to the necessity for teachers to receive adequate training. A structured questionnaire was used to collect data from 150 lecturers from Kaduna State College of Education, Gidan Waya, Kaduna State, on their awareness, access to training, digital competence, and attitudes toward AI integration. Offering suggestions for implementing AI fairly and responsibly within educational settings. Central to these strategies is the creation of comprehensive training programs for teachers, aimed at enhancing digital skills, AI

usage, and flexibility. Findings revealed that teachers' training on the use of AI is essential, as it improves their technological skills and promotes proper and constructive learning opportunities within educational settings.

Paper 58 Title: Integrating Artificial Intelligence into Science Education to Cultivate Critical Thinking and Adaptability for African Institutions.

Authors: Dr. UMAR Tambari

Affiliation: SHEHU SHAGARI COLLEGE OF EDUCATION, SOKOTO STATE | DEPARTMENT: Biology

Abstract: This research explores the integration of AI into science education as a means of cultivating critical thinking and adaptability among students, thereby preparing them for the challenges and opportunities of the future workforce so that the scholars and prospective scholars will not be replaced by the AI. The study emphasized the advantage of integrating AI into science education to cultivate critical thinking and adaptability. It also identifies much focus has been on ICT, neglecting the potential benefits of AI for science education. The study provides recommendations for African institutions to integrate artificial intelligence into science education to cultivate critical thinking and adaptability.

Paper 59 Title: INSTITUTION: Yusuf Bala Usman College of Education and Legal Studies, Daura, Katsina State – Nigeria.

Authors: NAME: Ibrahim Lawal Kane; TOPIC: AI-Driven Climate Trend Monitoring in Northern Nigeria's Sahel Region

Affiliation: Email: ibrahimlk131@gmail.com

Abstract: Effective climate trend monitoring in the Sahel region of Northern Nigeria requires the seamless integration of diverse datasets, including satellite imagery, ground-based sensors, and historical climate records. This study presents an Artificial Intelligence (AI)-driven statistical framework that harmonizes multi-source data to enhance the precision of climate trend analysis. By applying regression ensemble techniques, the system detects subtle shifts in temperature, precipitation patterns, and extreme weather events across spatial and temporal scales. Advanced data fusion methods address inconsistencies and fill observational gaps, resulting in more reliable and interpretable climate indicators. When applied in Northern Nigeria's Sahel region, the framework reveals warming trends, rainfall variability, and an increased frequency of dry spells—critical for understanding

desertification risks and agricultural impacts. This approach supports adaptive climate planning and fortifies early warning systems in one of Nigeria's most climate-vulnerable zones.

Paper 60 Title: INTEGRATING AI INTO BASIC SCIENCE PEDAGOGY FOR HOLISTIC ACQUISITION OF SCIENCE PROCESS SKILLS

Authors: Adamu Muhammad Fagge

Affiliation: BY | 08068126734 | adamfagae@gmail.com | Department of Integrated Science | Sa'adatu Rimi College of Education, Kumbotso Kano | A paper presented at International Conference on Artificial Intelligence and Education. University of Kigali, Rwanda 8th – 12th December, 2025

Abstract: Artificial Intelligence (AI) integration in Basic Science education offers a transformative approach to developing holistic science process skills (SPS). This study examines how AI-driven tools including intelligent tutoring systems, virtual labs, and data analytics enhance observation, experimentation, inference, and analytical reasoning. Adaptive learning algorithms enable personalized instruction, scaffolded problem-solving, and real-time feedback, nurturing deeper cognitive engagement. AI also supports immersive, inquiry-based learning, bridging theory and practice. Empirical evidence confirms that AI improves Science Process Skills proficiency in addressing individual learning gaps. However, challenges such as ethical concerns, teacher preparedness, and infrastructure requirements demand further research and considerations. A balanced, pedagogically sound AI framework, aligned with constructivist and experiential learning theories, is proposed in the study. Findings from empirical evidence of AI in enhancing science process skills highlight AI's potential to revolutionize science education by making SPS acquisition more dynamic, inclusive, and aligned with 21st-century scientific literacy needs.

Paper 61 Title: INTEGRATING AI TOOL IN EDUCATION: OPPORTUNITIES FOR FUNCTIONAL EDUCATION IN THE NIGERIAN EDUCATION SYSTEM

Authors: OYIBO GODWIN; PhD; KOGI STATE; NIGERIA

Affiliation: DEPARTMENT OF CHRISTIAN RELIGIOUS STUDIES | FEDERAL COLLEGE OF EDUCATION, OKENE | oyibogodwin@yahoo.com

Abstract: This paper scrutinizes the integration of artificial intelligence (AI) tools within the Nigerian education system, emphasizing their potential for enhancing functional education. As Nigeria confronts challenges such as resource limitations,

unified curriculum and the dynamic demands of the job market, AI proffers innovative remedies for personalized learning and skills development among others. The study elucidates a wide range of problems in the Nigerian Education system with a view to situating within the system some opportunities which AI solution provides to enhance functionality. The paper examines a successful implementation of AI across the Nigerian schools and institutions to show how AI can adeptly address deficiencies in traditional pedagogical approaches and enhance educational outcomes. This research aspires to furnish educators, policymakers, and stakeholders with insights on harnessing AI tools to cultivate a more functional and responsive education system that aligns with the exigencies of the 21st century.

Paper 62 Title: INTEGRATING ARTIFICIAL INTELLIGENCE (AI) IN ACADEMIC LIBRARIES FOR EFFICIENT SERVICE DELIVERY, PROMOTING TEACHER EDUCATION IN AFRICA

Authors: UKO; VINCENT B

Affiliation: BY | College Library Federal College of Education (special), Oyo, Oyo State Nigeria, West Africa | Vinnyco2010@gmail.com | +2348100597551 | Being a paper presented at the international conference organised by the University of Kigali Rwanda, with the theme: Al and Emerging issues: implications for Teacher Education delivery in Africa at; Kigali Rwanda, From 8th-12th December, 2025.

Abstract: This research explores the deployment of Artificial Intelligence in academic libraries to fast track the process of teaching and learning in institutions of higher Learning in Africa. The library is an information providing system that plays a pivotal role in supporting teaching, learning and research with information materials of various types. As a store house of knowledge, it is indispensable to the success of any functional education. Artificial Intelligence (AI) is becoming increasingly prevalent in academic libraries in Contemporary times as emerging technologies that influence the interactions between users and library resources, facilitates effective and efficient service delivery. This research examines how the integration of Al technologies can significantly enhance both library Services and teacher education programmes. And it proposes an integrated framework for the adoption of AI in library Services, promoting teacher education in Africa. The study provides vital recommendations while addressing the barriers associated with the implementation of Al in academic libraries.

Paper 63 Title: INTEGRATING ARTIFICIAL INTELLIGENCE EDUCATION INTO THE TEACHING OF INTEGRATED SCIENCE IN JUNIOR SECONDARY SCHOOLS IN BORNO STATE

Authors: Talba; Usman

Affiliation: International Conference on Artificial Intelligence and Education (ICAIED 2025) University of Kigali – Rwanda | usmantalbal@gmail.com | Department of Integrated Science, College of Education Waka Biu, PMB, 1512, BIU, BORNO STATE

Abstract: This study examined at integration of Artificial Intelligence (AI) education into the teaching of Integrated Science in junior secondary schools in Biu Local Government Area (LGA), Borno State. The purpose of the research was to assess the extent to which AI topics are incorporated into Integrated Science lessons, the level of teachers' preparedness in handling such topics, the availability of instructional materials, and the challenges faced in the integration process. The study adopted a descriptive survey design, with a structured questionnaire administered to both Integrated Science teachers and junior secondary school students. A total of 120 respondents participated in the study, drawn from selected schools in Biu LGA. Findings revealed that while teachers and students acknowledge the importance of AI education, its integration into Integrated Science remains low due to inadequate training of teachers, limited instructional materials, insufficient funding, and lack of government policy support. The results further indicated that schools with some form of AI-related instructional resources recorded higher awareness among students compared to those without such resources. Additionally, funding issues and insufficient curriculum coverage emerged as significant barriers. The study concludes that AI education is crucial for equipping students with the knowledge and skills to address environmental challenges, yet its implementation within Integrated Science is still at a developing stage in Biu LGA. It is recommended that government and educational stakeholders provide adequate funding, organize regular teacher training workshops, revise the curriculum to explicitly include AI content, and supply schools with relevant teaching aids. This will ensure that junior secondary school students are better prepared to face the realities of AI and contribute to sustainable development in their studies.

KEYWORD: Artificial Intelligence, Teaching, Education, Integrated science

Paper 64 Title: INTEGRATING ARTIFICIAL INTELLIGENCE IN AFRICA EDUCATION: OPPORTUNITIES AND CHALLENGES IN ACHIEVING SUSTAINABLE DEVELOPMENT GOAL 4 (QUALITY EDUCATION)

Authors: ESHENAKE J; SAMUEL; Ph.D; THEME: "AI; Emerging Issues: Implications for Teacher-Education Delivery in Africa"; DATE: 8th to 12th December

Affiliation: Department of Economics, | College of Education, Warri, | Nigeria. | A Paper Presented at the International Conference on Artificial Intelligence and Education. | VENUE: University of Kigali, Rwanda | Integrating Artificial Intelligence in Africa Education: Opportunities and Challenges in Achieving Sustainable Development Goal 4 (Quality Education)

Abstract: The integration of Artificial Intelligence (AI) into Africa education has emerged as both a transformative opportunity and a complex challenge with direct implications for achieving Sustainable Development Goal 4 (SDG 4) on inclusive and equitable quality education. This paper critically examines the promises and limitations of AI adoption in African educational systems through multiple theoretical perspectives, particularly, technological determinism, constructivist learning, and human capital theories. Findings from the review revealed a dual trajectory. On the one hand, AI enables personalized instruction, inclusive access for marginalized groups, efficient administration, and alignment with global education targets among others. On the other hand, infrastructural deficits, limited teacher preparedness, algorithmic bias, weak regulatory frameworks AI abuse, and digital divides remain persistent barriers that threaten equitable implementation. The paper argues that AI integration must not be understood as a technological fix but as a socio-technical process requiring context-sensitive, participatory, and ethically grounded strategies. The study concludes that meaningful integration of AI in Africa education demands comprehensive policy frameworks, sustained investment in digital infrastructure, culturally relevant adaptations, capacity building for teachers, and strong ethical oversight.

Paper 65 Title: INTEGRATING ARTIFICIAL INTELLIGENCE IN TEACHER EDUCATION IN AFRICA: IMPLICATIONS AND CHALLENGES FOR RURAL SCHOOLS.

Authors: UMUKORO; Moses Oghenevize; Ph.D; THEME: "AI; Emerging Issues: Implications for Teacher-Education Delivery in Africa"; DATE: 8th to 12th December

Affiliation: Department of Theatre Arts, | College of Education, Warri, | Nigeria. | Paper Presented at the International Conference on Artificial Intelligence and Education. |

Abstract: The world has become a global village due to the speed and intensity of communication within global space. One of the most trending communication aspects in global discourse, is Artificial intelligence (AI), which cuts across all aspects of human endeavors. This article, using the analytical method, probed into how Artificial Intelligence (AI) could be integrated into the teaching and learning process with special focus on schools in rural Africa. The article examined the

possibilities and challenges, merits and demerits, as well as ethical concern in integrating Artificial Intelligence (AI) in pedagogy that will inter alia spur innovative teaching and learning, as well as employment and global competitiveness. The paper is not unmindful of challenges including internet accessibility, ethical concern and data security. Useful recommendations were proffered that would enhance the integration of Artificial Intelligence (AI) into teacher education curriculum with emphasis on schools in rural areas.

Paper 66 Title: INTEGRATING ARTIFICIAL INTELLIGENCE IN TECHNICAL TEACHER

Authors: EDUCATION IN SOKOTO STATE; NIGERIA: OPPORTUNITIES; CHALLENGES AND; IMPLICATIONS FOR AFRICA; NSABA VICTOR AROBOR

Affiliation: By | victorarobornsaba@fcegm.edu.ng | Technical education department | Federal College of Education Gidan Madi, Sokoto State

Abstract: This study explores the integration of Artificial Intelligence (AI) in technical teacher education in Sokoto State, Nigeria, focusing on the Federal College of Education, Gidan Madi, and Shehu Shagari College of Education, Sokoto. The study aimed to evaluate institutional readiness, assess the availability of digital infrastructure, examine lecturers' and students' perceptions, and identify the opportunities and challenges of AI adoption. A descriptive survey design was adopted, with 135 respondents (61 lecturers and 74 students) selected through stratified random sampling. Data were collected using questionnaires and interviews, and analyzed through descriptive and inferential statistics alongside thematic analysis. Findings revealed low institutional readiness, poor internet connectivity, inadequate infrastructure, and limited training opportunities. However, both lecturers and students expressed positive perceptions of AI, acknowledging its potential to improve teaching, personalize learning, enhance digital competence, and support technical and vocational education. Opportunities include expanded access to digital resources, while major challenges remain poor funding, infrastructural gaps, and ethical concerns. The study recommends strategic investment, supportive policies, capacity building, and ethical guidelines to ensure sustainable AI integration in technical teacher education.

Paper 67 Title: INTEGRATING EMERGING TECHNOLOGIES (AI) IN LANGUAGE EDUCATION AND CLASSROOM IMPLICATIONS IN NIGERIA COLLEGES: EFFECTIVENESS, CHALLENGES

Authors: OBIUNU; ESEVOSA AUGUSTINE; Ph.D; DELTA STATE; NIGERIA; ABROAD E. DAVID

Affiliation: | DEPARTMENT OF CURRICULUM & INSTRUCTION | COLLEGE OF EDUCATION WARRI | & | COMPUTER SCIENCE DEPARTMENT | COLLEGE OF EDUCATION WARRI

Abstract: Integrating emerging technologies (AI) into teaching and learning, particularly language education has become an emergent issue in language education curriculum planning and development as it promises to enhance language education in different areas with AI's techniques, offering resources to support language teachers in presenting comprehensive instruction to students. The researcher employed a mixed-method approach research design, combined qualitative and quantitative data collection and analysis techniques to investigate AI's integration into language education. Responses from 100 language education teachers indicate that they perceive AI to be very resourceful and effective educational technology for language education. In spite of the appreciable effects of AI techniques as resources for language education there are also envisage challenges such as technological constraints, teacher and student factors in interacting with AI in the classroom. These challenges however are surmountable as teachers and students and consistently interact with the learning environment employing AI in language education.

Paper 68 Title: INTEGRATION OF AI-POWERED TOOLS INTO TEACHER EDUCATION CURRICULA IN MODERN AFRICAN SOCIETY

Authors: Prof. Joseph Nengak Bakdima

Affiliation: By | Department of Physical and Health Education, Federal College of Education Pankshin, Plateau State, Nigeria | bakdimajoseph52@gmail.com |

Abstract: This paper looks at how artificial intelligence (AI) tools can be used in teacher education in today's African society. It explains that AI tools like smart tutoring systems, automatic feedback platforms and learning programs that adjust to students' needs can help improve how teachers are trained. These tools can change the way teaching is done. The paper shows how AI can be used to teach better, test students more fairly and help teachers think deeply about their work. This is not without some challenges. This paper uses ideas from books, articles and

reports to support its points. It recommends that each African country must think about its own situation when using AI. It should not copy what works elsewhere without thinking about its own needs. The paper ends by suggesting that African countries should work together in making good policies, training of teachers and steady investment in digital tools and services.

Paper 69 Title: INTEGRATING ARTIFICIAL INTELLIGENCE INTO TECHNICAL EDUCATION FOR TEACHER DEVELOPMENT IN AFRICA: ENHANCING TECHNOLOGICAL INNOVATION FOR SELF-RELIANCE INSTITUTION: COLLEGE OF EDUCATION, GINDIRI

Authors: Konyil Patrick Yerima

Affiliation: Department: Technical Education | Email: retyitpatrick@gmail.com | Phone no: 09044823596 |

Abstract: Artificial Intelligence (AI) is reshaping global education systems, offering unprecedented opportunities for innovation, personalization, and scalability. In Africa, where technical education and teacher development face systemic challenges, AI presents a transformative pathway toward self-reliance and sustainable development. This paper explores the integration of AI into Technical and Vocational Education and Training (TVET) across African nations, focusing on its potential to enhance teacher capacity, foster indigenous innovation, and bridge critical skill gaps. Through a multidisciplinary lens, the study examines policy frameworks, implementation models, ethical considerations, and case studies to propose a strategic roadmap for AI-driven educational reform.

Paper 70 Title: INTEGRATING AI TECHNOLOGIES INTO GEOGRAPHY CURRICULA: CHALLENGES AND PROSPECTS IN NIGERIAN SCHOOLS

Authors: Elisha Ikpe; Ph.D

Affiliation: By | Elishabethy@gmail.com | Department of Geography, Federal College ofEducation, Odugbo, Benue State.

Abstract: This study explores the integration of Artificial Intelligence (AI) in geography education within Nigerian schools, focusing on its potential to revolutionize learning experiences and improve educational outcomes. Despite the benefits of AI, such as personalized learning and enhanced spatial analysis, Nigerian schools face significant challenges, including infrastructural deficiencies, limited teacher preparedness, and high implementation costs. This paper examines these

challenges and highlights the prospects of AI in geography education, including improved accessibility, critical thinking, and problem-solving skills. The study proposes a comprehensive approach to integrating AI into geography education, emphasizing the need for policy support, teacher training, and public-private partnerships. By harnessing the potential of AI, Nigerian schools can enhance the quality of geography education, promote critical thinking and problem-solving skills, and prepare students for success in an increasingly complex and interconnected world. The findings of this study have implications for policymakers, educators, and stakeholders in Nigeria's education sector, highlighting the need for a strategic approach to integrating AI into geography education. Ultimately, this study contributes to the growing body of research on AI in education, providing insights into the challenges and opportunities of AI integration in Nigerian schools.

Paper 71 Title: INTEGRATING AI INTO COMPUTER EDUCATION: PREPARING AFRICAN TEACHERS FOR THE FUTURE OF CODING AND COMPUTATIONAL THINKING

Authors: Abdullahi Ibrahim; Yobe State; Nigeria

Affiliation: By: | abdulplus@gmail.com | +2348035865091 | Computer Science Education Department | Federal College of Education (Technical) Potiskum,

Abstract: The integration of Artificial Intelligence (AI) into computer education is transforming the way coding and computational thinking are taught in Africa. To prepare African teachers for this paradigm shift, it is essential to provide them with the necessary skills and knowledge to effectively integrate AI-powered tools into their teaching practices. This paper explores the opportunities and challenges of integrating AI into computer education in Africa, and discusses strategies for teacher professional development. It also examines the potential benefits of AI-powered tools in enhancing student learning outcomes, promoting coding literacy, and fostering computational thinking. This research highlights the critical need for teacher training programs that is focused on AI literacy, pedagogical innovation, and curriculum development. By equipping teachers with the skills to integrate AI into computer education, the focal point is to ensure that African students are prepared for the future of coding and computational thinking with AI at its background.

Paper 72 Title: INTEGRATING ARTIFICIAL INTELLIGENCE IN TEACHER EDUCATION AND TVET IN PUBLIC TERTIARY INSTITUTION IN KOGI STATE, NIGERIA: CHALLENGES, READINESS, AND POLICY DIRECTIONS

Authors: 1Mohammed K. Ibrahim; 2*Mohammed Yakub A; 3Salifu Simeon I

Affiliation: 1Department of Agricultural Education, Kogi State College of Education Technical Mopa, Nigeria. | 2Department of Electrical/Electronics Technology, Kogi State College of Education Technical Mopa, Nigeria. | 3Department of Physics Education, Kogi State College of Education Technical Mopa, Nigeria. | *Corresponding authors email: mohammed.yakub@kscoetechkabba.edu.ng

Abstract: The integration of Artificial Intelligence (AI) into education is reshaping how teachers and technical trainers deliver instruction and prepare learners for a rapidly changing workforce. This study investigates the readiness, challenges, and policy directions for integrating AI in teacher education and Technical and Vocational Education and Training (TVET) programs across public tertiary institutions in Kogi State, Nigeria. Using a descriptive survey design, data were collected from lecturers, instructors, and administrators through a structured 24-item questionnaire validated by experts in educational technology and management. The instrument yielded a reliability coefficient of 0.88 using Cronbach's alpha. Descriptive statistics (mean and standard deviation) were used to analyze responses. Findings revealed that while AI tools have the potential to enhance students' technical competence, personalized learning, and employability, integration remains low due to insufficient digital infrastructure, high implementation costs, inadequate policy support, and limited AI literacy among educators. The study concludes that AI integration is critical to bridging skill gaps and improving workforce readiness in Kogi State. It recommends sustained government funding, capacity building for educators, curriculum reform, and strategic public-private partnerships to ensure ethical, inclusive, and effective AI adoption in teacher education and TVET institutions.

Paper 73 Title: INTEGRATING ARTIFICIAL INTELLIGENCE INTO TEACHER EDUCATION CURRICULA: A FRAMEWORK FOR AFRICAN INSTITUTIONS

Authors:

Affiliation: Education in Africa is undergoing a profound transformation, driven by the dual forces of demographic change and technological advancement. With over 60% of the continent's population under the age of 25, the demand for quality education is surging (United Nations, 2023). Yet, many African education systems continue to face persistent challenges: overcrowded classrooms, underqualified teachers, limited access to digital infrastructure and uneven learning outcomes. According to the International Telecommunication Union (2023), sub-Saharan Africa has the lowest internet penetration rate globally, making it difficult to deploy AI

tools that rely on cloud computing or real-time data processing. Additionally, many educators lack the digital literacy necessary to engage with AI technologies effectively. A UNESCO (2025) report found that fewer than one in four secondary school teachers in Africa are trained to use digital tools in the classroom, highlighting a critical skills gap. These systemic issues have created an urgent need for innovative solutions that can scale quality education equitably and sustainably.

Abstract: Artificial Intelligence (AI) is rapidly transforming global education systems, yet its integration into African teacher education remains limited and uneven. This review article outlines a strategic framework for integrating AI into teacher education curricula in African institutions, focusing on context-specific adaptation, pedagogical relevance and capacity-building. It explores how AI technologies like adaptive learning platforms, automated assessment tools and intelligent tutoring systems can enhance instruction, foster innovation and improve teacher readiness. The review discussed key challenges such as infrastructure disparities, digital literacy gaps, ethical issues and policy constraints hindering AI adoption. It also identifies key enablers such as curriculum reform, stakeholder collaboration and institutional support mechanisms. By positioning AI integration within Africa's diverse socio-educational landscape, the review offers a roadmap for fostering technologically empowered and culturally responsive educators. Additionally, the article advocates for a balanced approach that aligns global technological trends with Africa's unique educational realities and development priorities.

Paper 74 Title: INTEGRATION OF ARTIFICIAL INTELLIGENCE INTO THE INSTRUCTIONAL PROCESSES OF TECHNICAL AND VOCATIONAL TEACHER EDUCATION PROGRAM IN TERTIARY INSTITUTIONS OF NIGERIA: CHALLENGES; PROSPECTS

Author: MUHAMMAD, Umar Isa

Affiliation: Department of Woodwork Technology | School of Secondary Education (Technical) | Federal College of Education (Technical) Bichi Kano State, Nigeria |

Abstract: This study examines the challenges and appropriate approaches associated to integrating Artificial Intelligence into instructional processes of Technical and Vocational Teacher Education program in Tertiary Institutions (TI) of Nigeria. The study was conducted in TI in Northwestern states of Nigeria. An exploratory mixed method research design was adopted for the study. The study's population comprised 1,550 TVE lecturers. Purposive sampling was used to sample 16 participants for interview, while stratified random sampling technique was used

to sample 307 respondents. interview protocol and structured questionnaire were employed for data collection. Thematic content analysis was used to analyse qualitative data, while quantitative data were analysed using the mean and standard deviation. Findings revealed inadequate teacher preparedness, inadequate facilities among challenges associated to AI integration in TI. The study recommends a strong synergy between TVTE institutions and industries for improved AI up-skilling and reskilling among lecturers and students in Nigeria and Africa.

Paper 75 Title: INTERNATIONAL CONFERENCE ON ARTIFICIAL INTELLIGENCE AND EDUCATION

Authors: Emerging Issues: Implications for Teacher Education Delivery in Africa; Paper Title; Dr. Sa'ad Ibrahim;

Affiliation: Hosted by the University of Kigali | Theme | Impact of Artificial Intelligence Tools on Social Studies Students in Colleges of Education in North-Central Nigeria | Author | 002saadibrahim@gmail.com | 08059139659, 08029453167 Department of Early Childhood Care and Primary Education (EECE & PED) Federal Capital Territory College of Education, Zuba, Abuja, Nigeria.

Abstract: In an era of rapidly evolving educational technologies, Artificial Intelligence (AI) tools are becoming increasingly central to transformative teaching and learning experiences. This study assessed the impact of AI tools on Social Studies students in Colleges of Education in North-Central Nigeria. Using a descriptive survey design, data were collected from 200 NCE II Social Studies students through a structured questionnaire validated at 0.78 Cronbach Alpha. Research objectives were analysed using descriptive statistics, while Pearson Product Moment Correlation and independent samples t-test were used to test the hypotheses at a 0.05 level of significance. Findings revealed a moderate, positive, and statistically significant relationship between AI tool usage frequency and academic performance ($r = .42$, $p < .05$). Independent t-test results equally showed that students with high AI usage ($M = 3.12$, $SD = 0.54$) demonstrated significantly higher levels of digital literacy and readiness compared to those with low AI exposure ($M = 2.47$, $SD = 0.63$), $t(198) = 5.86$, $p < .05$. The study further revealed gradual integration of AI tools such as chatbots, simulations, generative platforms, and automated assessment engines in Social Studies instruction, though constrained by limited access, poor infrastructure, and low technical competence.It is recommended that Colleges of Education should establish AI-enabled Social Studies hubs to promote hands-on technology-driven learning, institutions should regularly organise AI capacity-building workshops for lecturers to advance their pedagogical

competence, student teachers should be encouraged to incorporate AI tools into lesson planning and micro-teaching during practicum to boost professional readiness, and equitable access strategies such as subsidised internet and shared devices should be implemented to ensure inclusive participation in AI-enhanced Social Studies education.

Paper 76 Title: INVESTIGATING THE CHALLENGES CONFRONTING INTEGRATING SMART EDUCATION IN TRANSFORMING BASIC EDUCATION IN RURAL SUB-SAHARA AFRICA. A CASE STUDY OF ENUGU STATE OF NIGERIA.

Authors: Anthony Tochukwu Owoh (PhD)

Affiliation: Department of Educational Foundations | Enugu State College of Education Technical, Enugu. Enugu State Nigeria | +2348037430200

Abstract: This research examines the multiple challenges confronting the innovative power and revolutionary capacity of artificial intelligence (AI) enabled smart education technologies in transforming basic education in rural Sub-Sahara Africa using Enugu State of Nigeria as contextual case study. The study is grounded on digital learning framework and educational technological theory and employs qualitative method of analysis to analyze the challenges confronting smart education technology in scaling delivery in such rural terrain. The findings show, that infrastructural and digital deficiencies, inadequate competent ICT teachers, inadequate technical assistants, socio- cultural barriers, poor policy implementation etc, inhibits efficient smart technology assisted educational delivery in the area. The study recommends policy formulation and implementation, inclusive involvement of necessary stakeholders to enhance smart education and its sustainability across, to address inequality and enhance equitable learning across rural Sub-Sahara Africa.

Paper 77 Title: LEVERAGING ARTIFICIAL INTELLIGENCE (AI) FOR GLOBAL ECONOMY: A CALL FOR DIGITAL- HYBRID TEACHER EDUCATION IN AFRICA.

Authors: ECHE; Patrick Inalegwu (PhD); BENUE TATE; NIGERIA

Affiliation: BY | patrickinalegwueche@gm.com | +1238139261201 | DEPARTMENT OF BIOLOGY EDUCATION, | FEDERAL COLLEGE OF EDUCATION, ODUGBO,

Abstract: This article argues that strategic adoption of digital hybrid teacher education blending online/digital tools, face-to-face practice, and AI-enabled supports can accelerate teacher capacity, improve learning outcomes, and contribute

to Africa's participation in the global knowledge economy. The paper reviews the current state of teacher education and knowledge delivery in Africa, articulates the need for innovation, defines the concept of digital hybrid teacher education and its macroeconomic implications, surveys AI tools relevant to teacher preparation and classroom practice, examines implementation challenges, and offers conclusions and policy recommendations. Evidence is drawn from recent UNESCO and World Bank reports, scholarly reviews on AI in education, a case study of Rwanda and blended learning, and contemporary studies of teacher professional development in African contexts.

Key words: Leveraging, Artificial intelligence, Global economy, Teacher education, Digital- hybrid teacher education, Africa.

Paper 78 Title: LANGUAGE, AI, AND TEACHER EDUCATION: BRIDGING THE LINGUISTIC GAP

Authors: Ejiogu; Dinah Adaoha

Affiliation: By | Benjamin Uwajumogu(State) College of Education, Ihitte/Uboma | adaohadinah@gmail.com

Abstract: Language is central to human interaction, learning, and identity formation, yet linguistic diversity often creates barriers in education. Teacher education has long grappled with equipping educators to navigate multilingual classrooms. The rapid advancement of artificial intelligence (AI) presents new opportunities to bridge linguistic divides, enabling more inclusive, equitable, and effective teaching and learning. This paper explores the intersections of language, AI, and teacher education with a focus on bridging linguistic gaps. Drawing from sociocultural theory, translanguaging, and recent frameworks on AI in education, the study examines how AI-driven tools such as machine translation, natural language processing (NLP), and speech recognition can enhance teacher education and classroom practice. The paper further discusses opportunities and challenges associated with AI integration, including ethical considerations, teacher readiness, and cultural sensitivity. A conceptual framework is proposed for embedding AI into teacher training and classroom pedagogy. The study concludes by emphasising the importance of interdisciplinary collaboration among educators, linguists, policymakers, and technologists to ensure equitable, culturally responsive AI applications in education.

Paper 79 Title: LEVERAGING ARTIFICIAL INTELLIGENCE TO IMPROVE THE TRAINING OF HISTORY TEACHERS IN AFRICA.

Author: UMAR; Sagir Yana

Affiliation: INSTITUTION: FEDERAL COLLEGE OF EDUCATION, JAMA'ARE, BAUCHI STATE | DEPARTMENT: History |

Abstract: This paper examines how artificial intelligence (AI) can enhance the training of history teachers in African schools. It demonstrates how AI tools, such as machine learning, digital records, and AI-based historical simulations, can enhance teaching, help students think critically, and support learning that meets each student's individual needs. It demonstrates that AI can improve students' learning outcomes, despite challenges such as limited access to modern technology, curricular shortcomings, and poor ethical usage of AI, which pose an existential threat. The paper concludes with recommendations on how to navigate the complexities of AI for effective teaching and learning.

Paper 80 Title: AN ASSESSMENT OF AI TOLLS USED FOR PERSONALISED READING INSTRUCTIONS AMONG CHILDREN

Authors: Adepoju Adetokunboh Abayomi

Affiliation: Adeyemi Federal University of Education, Department of Primary Education, Ondo State, Nigeria.

Abstract: The study examined the use of AI tools as personalised instructional strategies in reading among primary school pupils. The study used personalised learning theory as the theoretical framework and used primary school pupils and teachers as the population. From ten primary schools, chosen at random, the study selected all the teachers in those schools as samples and purposively selected five class captains of primary 6 making a total of one hundred and twenty-seven samples. Three research instruments were used, a ten item four point Likert scale questionnaire, observation and in-depth interviews. The structured questionnaire was administered on teachers, in-depth interviews on five teachers and the class captains and the observation was carried out in the class. For quantitative data, descriptive analysis was used while thematic analysis was used for qualitative data. It was revealed that AI tools are neither available nor used in schools to personalised reading and the study recommended that AI tools awareness be crated and provided in primary schools.

Paper 81 Title: REDEFINING TEACHER PROPESSIONALISM IN THE ERA OF ARTFICICAL INTELLIGENCE: AN AFRICAN PERSPECTIVE

Authors: ABUBAKAR MALAMI

Affiliation: BY | Department of Educational Foundations | Federal College of Education Gidan Madi Sokoto State, Nigeria | Corresponding author email: abbmalami@gmail.com Phone: + 234 8062477522

Abstract: The emergence of artificial intelligence (AI) is reshaping the teaching profession globally, with profound implications for Africa. While traditional notions of teacher professionalism emphasized subject expertise, pedagogical skill, and ethical conduct, AI introduces new possibilities and challenges that require redefinition. This conceptual paper critically examined how AI is transforming teacher professionalism within African educational contexts. It explored the opportunities AI offers for enhancing instruction, administrative efficiency, and personalized learning, while also addressing risks such as data privacy concerns, algorithmic bias, and potential erosion of teacher autonomy. Particular attention was given to structural realities in African systems including infrastructure gaps, policy fragmentation, and limited digital literacy that mediate AI adoption. Drawing on recent literature and global best practices, the paper argued for an expanded model of professionalism that incorporates technological competence, ethical AI use, and collaborative adaptation to digital innovations. It further highlighted the role of teacher education institutions, unions, and policymakers in ensuring that AI integration strengthens rather than undermines professional identity. Recommendations included establishing robust policy frameworks, embedding AI literacy in teacher training, promoting localized innovation, and fostering continuous professional development. The paper concluded that redefining professionalism in the age of AI is essential for building resilient, equitable, and future-ready education systems across Africa.

Paper 85 Title: REIMAGINING TEACHER-EDUCATION CURRICULA IN AFRICA THROUGH ARTIFICIAL INTELLIGENCE: OPPORTUNITIES, CHALLENGES, AND CONTEXTUAL REALITIES

Authors: BISTU YILJI JOHNSON

Affiliation: By | Curriculum Studies Department | Federal University of Education, Pankshin, Plateau state, Nigeria | bistujohnson@gmail.com

Abstract : As Artificial Intelligence (AI) reshapes global education, its integration into teacher-education curricula in Africa presents both transformative potential and significant challenges. This paper examines how AI can reimagine the design, content, and delivery of teacher-education programs across the continent. Using frameworks such as Technological Pedagogical Content Knowledge (TPACK) and Diffusion of Innovations theory, it explores AI's applications in curriculum development, instruction, assessment, and teacher professional growth. The study critically reviews emerging practices and highlights barriers to adoption, including infrastructure gaps, faculty preparedness, policy limitations, and cultural mismatches. It also considers how national contexts, socio-economic inequalities, and policy priorities influence AI's educational relevance and impact. The paper concludes with strategic recommendations for inclusive, context-sensitive, and future-focused curricula that responsibly leverage AI, contributing to broader debates on educational innovation, digital equity, and sustainable teacher preparation. | Keywords: Artificial Intelligence, teacher education, curriculum reform, digital pedagogy, educational technology, professional development

Paper 86 Title: RELEVANCE OF ARTIFICIAL INTELLIGENCE ON THE TEACHING AND LEARNING OF HISTORY IN NIGERIAN SECONDARY SCHOOLS

Authors: Prof. Maigoro; Lazarus Luka; History; International Studies Education; Dr. Gotom; Gregory Gotul

Affiliation: maigoro2010@yahoo.com | College of Education, Gindiri, Plateau State, Nigeiria | & | gotomgregoryg@gmail.com |

Abstract: The study considered the incorporation of artificial intelligence in the act of teaching and learning of History in public secondary schools in Nigeria. History is a discipline which is mostly seen as abstract in view of its nature and scope some of which spans beyond the existence of man. Most of the accounts are therefore given after the events have occurred. This is one phenomenon that makes the teaching and learning of History seemingly difficult. This is further compounded by the lack of basic teaching and learning facilities in most Nigerian secondary schools where challenges like inadequate qualified teachers, ICT facilities, electricity supply and the like are evident. Artificial intelligence makes history learning more personalized, enhances engagement and motivation, development of critical thinking and also enables access to vast educational resources. It is this benefits that makes AI more

relevant to the teaching and learning of History in secondary schools. The study also explored the challenges bedeviling the utilization of AI for history instruction and made recommendations on the various ways that such challenges could be mitigated.

Paper 87 Title: TECHNOLOGY AND ARTIFICIAL INTELLIGENCE: IMPERATIVE FOR THE FUTURE OF EDUCATION IN AFRICA

Authors: Christiana Fwenji ZUMYIL; PhD; Toma Maina ANTIP

Affiliation: Biology Department, | Federal College of Education Pankshin, Plateau State | 08039183598 | christiezum@gmail.com | And | Biology | Federal College of Education Pankshin, Plateau State | 08065393934 | tomamaina@gmail.com

Abstract: The paper examines the trans-formative impact of Technology and Artificial Intelligence (AI) in educational settings. The paper uses secondary sources of data to illustrate that early exposure to technological concepts can significantly influence students' career paths and preparedness for the future. Suggestions on how Technology and Artificial Intelligence will change education in Africa were highlighted. Lack of training for teachers and lack of access to Technology and Artificial Intelligence tools were some of the challenges confronting the adoption of Technology and Artificial Intelligence in African classrooms. Recommendations were made for educational institutions, policy makers and educators to develop a comprehensive Technology and Artificial Intelligence strategies so that they will identify the benefits accrued to adopting Technology and Artificial Intelligence programs. The paper concluded by stating that embracing technology and Artificial Intelligence innovations will ensure a brighter educational landscape for Africa.

Paper 89 Title: Artificial INTELLIGENCE | EFFECTIVENESS IN COLLEGES OF EDUCATION IN NIGERIA

Authors: OJUKUROLOLA; Akinpelumi Olufunmibl

Affiliation: | Department of Geography Education, | School of Arts and Social Science Programme, | Osun State College of Education, Ila Orangun |

Abstract: This paper explores the transformative potential of Artificial Intelligence (AI) in enhancing the effectiveness of lecturers in Colleges of Education in Nigeria. As the educational landscape shifts towards digitalization, AI offers innovative tools and approaches to address challenges such as large class sizes, diverse learning needs, and administrative burdens. This paper examines the various ways AI can empower lecturers, from personalizing learning experiences and

automating assessments to facilitating professional development and optimizing administrative tasks. It also critically analyses the prevailing challenges to AI adoption in Nigerian Colleges of Education,1 including inadequate infrastructure, limited digital literacy, and ethical concerns. Finally, the study provides recommendations for the strategic integration of AI to foster a more efficient, engaging, and equitable teaching and learning environment, ultimately contributing to the production of high- quality teachers for the Nigerian educational system.

Paper 90 Title: THE INFLUENCE OF ARTIFICIAL INTELLIGENCE (AI) IN ACADEMIC PURSUANCE

Authors: HUSSAINI ADAMU LADAGS

Affiliation: Department of Agricultural Education, School of Vocational Education, | College of Education Waka-Biu, Borno state Nigeria | E-mail Address: ladags2013@gmail.com

Abstract: Artificial Intelligence (AI) within the realm of education has fundamentally transformed the landscape of academic learning, offering students both novel opportunities and performance-related challenges. This article delves into the ramifications of AI technologies on students' academic performance. The increasing dependence of students on AI technologies for educational purposes has facilitated the emergence of personalized learning experiences and the provision of instantaneous performance assessments. The integration of artificial intelligence technologies has rendered learning processes more efficient and effective. Nevertheless, as with any transformative phenomenon, there exist both advantages and drawbacks; thus, students who heavily rely on AI technologies for their academic endeavors also encounter certain disadvantages. An overreliance on AI tools may inhibit students from cultivating critical thinking and essential foundational skills, rendering them passive in their academic engagement and potentially leading to deficiencies in their problem-solving capabilities.

Paper 91 Title: THE INTERSECTION OF AI AND BIOLOGY EDUCATION: EXPLORING THE IMPLICATIONS FOR AFRICAN TEACHER-EDUCATION DELIVERY

Authors: TITUS MATTHEW PhD

Affiliation: BY | DR UMARU SANDA AHMADU COLLEGE OF EDUCATION,MINNA | begbekuta@gmail.com | begbekuta@gmail.com |

Abstract: The integration of artificial intelligence (AI) is transforming the education landscape globally. In Africa, where teacher education is critical to addressing the continent's education challenges, the implications of AI on teacher-education delivery are multifaceted. Also, the integration of Artificial Intelligence (AI) in biology education, a life science, no doubt has the potential to transform the way biology is taught and learned in Africa. This paper examines how artificial intelligence (AI) intersects with biology education and the implications for teacher-education delivery across African contexts. It highlights opportunities such as enhancement of teacher professionalism, improvement of student learning outcome and promotion of educational equity, challenges associated with AI-enhanced biology education like cultural relevance, digital literacy, infrastructure and connectivity. It argues that AI can enhance teacher professional development. Furthermore, it synthesizes recent literature and policy guidance, outlines a conceptual framework linking AI capabilities to biology pedagogy, examines capacity and infrastructure constraints in African teacher-education institutions, and proposes practical curriculum, pedagogic, and policy interventions. Recommendations address ethical safeguards, culturally responsive AI, professional development models, and phased implementation roadmaps aimed at strengthening teachers' Technological Pedagogical Content Knowledge (TPACK) in biology and improving equitable learning outcomes.

Paper 92 Title: TOWARDS USING AI MNEMONICS FOR ENSURING QUALITY EDUCATION

Authors: SULYMON JIMOH ALANI

Affiliation: Department of English, School of Languages, Oyo State College of Education, Lanlate Email Address: jimalanisulymon@gmail.com

Abstract: This study investigates the use of AI mnemonics in the process of education delivery in Nigerian institutions. The AI mnemonics either create or enhance mnemonic devices to concretize the learning experiences and improve memory retention. The research examines a variety of AI generated mnemonic devices such as: visual mnemonics, text-based mnemonics and individual mnemonic preferences, among others. The study highlights the benefits of AI generated mnemonic devices as they ensure that teaching/learning activities are effectively gainful. Also, AI generated images can be based on textual prompts helping learners to visualize complex concepts and vocabulary. The study, however, identifies some daunting challenges, including inadequate educational facilities and gadgets, paucity of technical expertise and aversion to change. This study provides recommendations for African institutions to embrace full

incorporation of the AI mnemonics into the process of their education delivery while proffering solutions to the challenges.

Paper 94 Title: TRANSFORMATION OF EDUCATION IN AFRICA: THE PLACE OF

Authors: OLAGBENDE Omololu Victor

Affiliation: DEPARTMENT OF EDUCATIONAL FOUNDATIONS | OYO STATE COLLEGE OF EDUCATION, LANLATE, NIGERIA

Abstract: This paper looks at the current educational situation in our society by examining the advantages and disadvantages of Artificial Intelligence in the educational environment. It also looks at how AI is influencing the teaching-learning activities in our schools. It also analyzes how AI is useful to the growth and development of education. The examination of the advantages and disadvantages of AI in education was not left out. It was concluded that AI has the potentials of transforming education if it is embedded in education at every stage with students getting engaged and participating early. Among others, the paper recommends the following: First, government and ministry of education should formulate policies and curriculum that will accommodate AI education. Secondly, stakeholders should encourage collaboration among educators, developers and researchers.

Paper 95 Title: TRANSFORMING LANGUAGE EDUCATION: THE ROLE OF AI AND IMAGING TECHNOLOGIES IN AFRICAN CLASSROOMS

Authors: ALIYU; ABDULMALIK

Affiliation: . | DEPARTMENT OF ENGLISH LANGUAGE | FEDERAL COLLEGE OF EDUCATION, OKENE, KOGI STATE, NIGERIA | malikaliyu99@gmail.com |

Abstract: Language education in Africa is deeply shaped by its vast linguistic diversity, colonial legacies, and systemic educational challenges. With more than 2,000 indigenous languages across the continent, students often face barriers when instruction is delivered in colonial languages such as English, French, or Portuguese, which contribute to low literacy levels and disengagement. This study explores the transforming language education: the role of ai and imaging technologies in African classrooms. AI applications including adaptive learning systems, natural language processing, and virtual tutoring offer personalized support, bridge multilingual gaps, and enhance teacher capacity. Imaging technologies, such as augmented and virtual reality, smartboards, and interactive visual tools, provide immersive and engaging

learning environments that stimulate comprehension and retention. Drawing on case studies from Nigeria, Tanzania, and Botswana, the paper demonstrates how these technologies can foster both indigenous language preservation and global language competence. However, barriers such as poor infrastructure, high costs, limited teacher digital literacy, and the cultural risks of foreign-developed AI models remain critical constraints. The study concludes that the successful adoption of AI and imaging technologies in African classrooms requires localized solutions, government investment in digital infrastructure, teacher training, and collaborative partnerships. By aligning modern technologies with Africa's linguistic and cultural realities, language education can become more inclusive, innovative, and future-oriented.

Paper 96 Title: TRANSFORMING TEACHER EDUCATION IN AFRICA THROUGH THE USE OF ARTIFICIAL INTELLIGENCE (AI) IN TEACHING POLITICAL SCIENCE

Authors: NOAH DANLAMI

Affiliation: | DEPARTMENT OF POLITICAL SCIENCE | SCHOOL OF SECONDARY EDUCATION, ARTS AND SOCIAL SCIENCES | KADUNA STATE COLLEGE OF EDUCATION GIDAN WAYA, NIGERIA. | E-mail: noahdanlami2020@gmail.com |

Abstract: This paper examines the pivotal role of political science as a discipline in promoting teacher education in Africa. As political systems become increasingly complex and democratic engagement more essential, the need for teachers who can impart critical thinking, civic responsibility, and participatory values intensifies. Traditional approaches to teaching political science are insufficient in preparing future teachers to meet these demands. The use of Artificial Intelligence as an innovative approach to the effective teaching of Political Science is also explored. This study generally explores innovative pedagogical approaches—such as experiential learning, digital platforms, interdisciplinary methods, and reflective practices—that can reshape teacher preparation programs. By embedding political science instruction with creativity, context, and civic consciousness, Africa can produce a generation of educators equipped to guide learners into becoming informed and active citizens who can meet Africa's ever increasing developmental needs.

Paper 97 Title: TECHNICAL EDUCATION AND THE GEM PARADIGM SHIFT: A STRATEGIC LEVER FOR AFRICA'S SUSTAINABLE ECONOMIC RENAISSANCE

Authors: Dr. AdulRahaman Mohammed Adamu

Affiliation: College of Education Billiri, Gombe State. | Amohammadadamu@gmail|

Abstract: The evolving metrics and focus of the Global Entrepreneurship Monitor (GEM) signal a paradigm shift: entrepreneurship is no longer just about business creation, but about sustainable innovation, inclusive growth, and adaptive technical capacity. This paper investigates how Technical and Vocational Education and Training (TVET) in Nigeria must adapt to this emerging entrepreneurial philosophy or risk systemic irrelevance. Anchored in the GEM framework and the UN's Sustainable Development Goals (SDGs), the study critically examines the extent to which Nigerian technical education systems cultivate entrepreneurial competencies aligned with sustainability imperatives. Through qualitative case studies from Gombe, Bauchi, and Adamawa, the research highlights structural, pedagogical, and policy deficiencies, and advocates for a recalibration of TVET curricula to integrate green technologies, digital innovation, and ethical enterprise development. The paper posits that Nigeria's sustainable economic development depends on whether technical education systems evolve in response to this global paradigm a choice between informed adaptation or philosophical inertia with long-term socio-economic consequences.

Paper 98 Title: THE ROLE OF ARTIFICIAL INTELLIGENCE AND EMERGING TECHNOLOGIES IN ENHANCING THE INSTRUCTIONAL COMPETENCE OF ADULT EDUCATORS IN NIGERIA'S NON-FORMAL EDUCATION SECTOR

Authors: Dr. Muhammad Bala Muhammad

Affiliation: Department of Adult and Non-formal Education, | Federal College of Education, Katsina. | mmlaf2012@gmail.com |

Abstract: This conceptual paper analyses the contribution of Artificial Intelligence (AI) and emerging technologies to the instructional competence of adult educators in the non-formal education sector in Nigeria. With digital transformation in education systems gaining popularity around the world, AI-based tools and innovative technologies have a great potential to enhance the effectiveness of teaching, the delivery of educational content, and engagement of learners, especially in underserved and flexible learning settings. The paper uses the ideas of instructional competence, AI, and non-formal education to discuss the concepts based on the existing literature and global trends. It also shares the discussion on how other technologies like intelligent tutoring systems, virtual learning platforms, and mobile-based applications can assist adult educators in the planning, delivery,

and assessment of learning. In addition, issues that constrain the use of technology, such as digital illiteracy, infrastructural shortcomings, and policy shortages, are also brought out in the paper. Critical analysis of the study has come up with strategic recommendations on how to improve educator readiness, institutional capacity and policy alignment to promote sustainable technology integration. The paper will add to the current discussion about educational innovation because it focuses on the need to provide adult educators with digital skills to support the needs of adult learners in Nigeria as they change.

Paper 99 Title: INTEGRATION OF SMART TECHNOLOGIES IN TEACHING IN SELECTED COLLEGES OF EDUCATION, IN NORTH-EASTERN NIGERIA: ISSUES AND CHALLENGES

Authors: Tijjani Usman Karofi Ph.D

Affiliation: Taraba State College of Education, Zing. | Department of Islamic Studies | karofex@gmail.com |

Abstract: This paper explores the e-preparedness of Colleges of Education in Nigeria in adopting cutting-edge smart technologies. It is geared to asses e-preparedness in Nigerian teacher education institutions, providing actionable insights for policy formulation, institutional enhancement, identifying key challenges and proposing strategic solutions. The theoretical framework is grounded on ICT ecosystem and its value chain, emphasizing the role of digital technologies in content delivery, professional development, and facility management. Findings indicate that while ICT facilities are available, functional, and accessible, its integration in teaching remains suboptimal, exposing gaps in digital literacy, unstable internet access, irregular power supply, dearth of technical expertise, and obsolete technological resource as barriers to technology-driven education in the sampled institutions. The paper recommended consistent power supply, continuous professional development for educators, network infrastructure upgrades, and sustainable internet subscriptions.

Paper 100 Title:PROBLEMS AND PROSPECTS OF INTEGRATING ARTIFICIAL INTELLIGENCE OF TEACHING AND LEARNING NIGERIA'S INDIGENOUS LANGUAGES.

Authors: Mal. Mohammed Hamman Barka

Affiliation: | Department of Hausa | College of Education Waka-Biu, Borno State Nigeria | Email: fasahasa@gmail.com

Abstract: This study aims to explore the roles of integrating AI in teaching indigenous Nigerian languages, focusing on its Problems and prospects. Nigeria's major indigenous languages are used as the language of instruction at the basic level of education, thus offering a new perspective on digital inclusion. Nigeria is home to over 521 languages, yet few AI systems understand even the most widely spoken ones, such as Yoruba, Hausa, Igbo, Kanuri, Fulfulde, and Tiv. Artificial Intelligence tools, such as DeepSeek, Google Assistant, Microsoft Translator, Meta's AI models, and ChatGPT, are developed and trained in English, Chinese, and other European languages. In comparison, Nigeria's indigenous languages are largely missing from the internet. AI models are trained from large volumes of linguistic data called Large Language Models (LLMs) that are found in only a few of the world's languages. Nigeria's indigenous languages are considered Low-Resource Languages (LRL) because they have fewer digital data to train AI models. The study employs a qualitative research design. The data for the research were gathered through semi-structured interviews that comprised 45 participants, which included 15 indigenous Nigerian language teachers, 5 linguists, 5 Computer scientists with background knowledge of AI technology, and 20 Nigerian language students drawn from the University of Maiduguri, Federal College of Education, Yola, College of Education Waka-Biu, and Federal University Wukari. The Interviews were conducted in English, Hausa, Yoruba, Igbo, Fulfulde, Kanuri, and Tiv. The study identifies Lack of Structured Data Ecosystem, User Attitudes, Insufficient Infrastructure and Network Connectivity, and Lack of Technical skills are some of the major problems of integrating AI in teaching and learning Nigeria's indigenous languages. Similarly, the prospects identified in integrating AI technology in teaching and learning Nigeria's indigenous language include preservation and revitalisation of Nigeria's indigenous languages.

Paper 101 Title: Towards Artificial Intelligence Ethics in Education: Implications for Character and Moral Development of Learners in Schools and Colleges

Authors: Abdullahi Haruna; Ph.D

Affiliation: Department of Islamic Studies, | Zamfara State College of Education, Maru, Zamfara State, Nigeria

Abstract: As Artificial Intelligence (AI) becomes increasingly embedded in educational systems, questions arise about its potential role in the moral training of learners. This study explores expectations surrounding AI's capacity

to support ethical development in students. It focuses on how AI tools may influence values such as empathy, responsibility, and integrity. A mixed-methods approach examines both opportunities and limitations. Findings reveal key elements in moral education with AI moral scenarios and feedbacks, including lack of human judgment, emotional sensitivity, and cultural awareness. Concerns were raised about overreliance on AI and the risk of weakening human relationships. However, when ethically designed with human guidance, AI can serve as a complementary tool in character education. The study suggests that AI should not replace human-led moral training but enhance it when grounded in clear ethical frameworks. Recommendations are offered for integrating AI responsibly in educational settings.

Paper 102 Title: A LITERATURE REVIEW ON EMERGING TECHNOLOGIES FOR RESOURCES OPTIMIZATION IN AFRICAN COMMUNITY BASED PROJECTS.

Authors: Schiman Niyonkuru , Denis Sekiwu , Godfrey Barigye

Affiliation: Doctorate of business admiration research scholar, Kabale university(Uganda)/Associate Professor, Kabale university((Uganda)/Senior Lecturer, Kabale university((Uganda)

Abstract: This literature based paper examines how African community based projects continue to face persistent challenges related to resource shortages, inefficient allocation and weak monitoring systems which often limit their significances on local development. In recent years, emerging technologies have offered new pathways for enhancing resource optimization and strengthening project performance. This paper examines three practical and widely adopted technologies such as mobile data collection tools, mobile money and digital payment systems and lastly is artificial intelligence along with their implications for enhancing efficiency, effectiveness, accountability and decision making in community based initiatives. Mobile data collection tools such as kobo toolbox and ODK enable real time, accurate field reporting, reducing delays, operational costs and data errors. Mobile money platforms including MTN mobile money, AIRTEL-mobile money and M-pesa improve financial transparency by minimizing cash handling, enhancing payment tracking and accelerating fund disbursement to beneficiaries and field staff. Artificial intelligence, though still emerging in grassroots setting, contributes through simple and accessible application such as Chatbots for community communication, predictive analytics for planning and automated monitoring systems that support timely decision making. The paper argues that these technologies collectively strengthen resource planning, allocation

and utilization and hence improve project outcomes. The discussion highlights their potential to support capacity building within teacher education by demonstrating how technological innovation can enhance management efficiency in community development. The study concludes that integrating such user-friendly technologies into African community-based projects is not only feasible but essential for promoting sustainable development and advancing education on technology-informed project management across the continent. The discussions highlight their potential to support capacity building within teacher education by demonstrating how technological innovation can improve management efficiency in community development. The study concludes that incorporating the user friendly technologies into African community based projects is not only viable but essential for promoting sustainable development and advancing education on technology informed project management across the continent.

Paper 103 Title: EVALUATION OF ARTIFICIAL INTELLIGENCE POTENTIAL IN HIGHER EDUCATION ASSESSMENT FOR ACADEMIC PERFORMANCE IN TERTIARY INSTITUTIONS IN SOUTH – SOUTH, NIGERIA

Authors: Babajide Olanipekun OLAOJO

Affiliation: UNIVERSITY OF KIGALI CONFERENCE ON ARTIFICIAL INTELLIGENCE | INSTITUTION: FEDERAL COLLEGE OF EDUCATION (TECHNICAL) OMOKU, RIVERS STATE || Department of Social Studies

Abstract: This study investigates the potential of Artificial Intelligence (AI) in enhancing the learning outcomes of Nigerian undergraduates. Using a mixed-methods approach, the research examines the integration of AI-driven educational tools. Data was collected through surveys and interviews with students, faculty members, and educational technologists across five Nigerian institutions. Quantitative data was analyzed to assess improvements in academic performance, engagement, and retention rates, while qualitative data highlighted perceptions of AI's role in enhancing teaching and learning processes. The findings reveal that there is significant main effect of treatment (AI-based tutoring systems, and Automated grading systems) on Learning outcomes of Nigerian Undergraduate ($F(2, 50) = 43.225$, $p < .05$, $\eta 2 = .634$) and there was significant main effect of intelligence on Learning outcomes of Nigerian Undergraduate ($F(2, 50) = 10.711$, $p < .05$, $\eta 2 = .277$) result showed that there was significant relationship between Personalized learning platforms and learning outcomes among undergraduate students ($r = .421$, $N = 550$, $p < .05$). The findings reveal that AI tools significantly contributed to improved student learning outcomes, particularly in courses with

high dropout rates and large class sizes. Students reported higher levels of engagement and personalized support, which were key factors in their academic success. The study concludes that while AI presents a transformative opportunity to enhance educational outcomes, its effective implementation in Nigerian higher education requires addressing technological and institutional challenges. | NAME: DEPARTMENT: TOPIC: | Akpokabowei Owesiana M. Department of Entrepreneurship Education Teaching Learners Artificial Intelligence Tools for Effective and Efficient Digital Entrepreneurship in Public Tertiary Institutions in South-South | NAME: DEPARTMENT: TOPIC: | RICHARD ONUOTU DEPARTMENT OF ACCOUNTING EDUCATION, THE ROLE OF AI IN MODERN ACCOUNTING TECHNOLOGY | Name: Department: Topic:

Paper 104 Title: RELEVANCE OF ARTIFICIAL INTELLIGENCE ON THE TEACHING AND LEARNING OF HISTORY IN NIGERIAN SECONDARY SCHOOLS.

Authors: MAIGORO, Lazarus Luka

Affiliation: COLLEGE OF EDUCATION, GINDIRI, PLATEAU STATE. INSTITUTION: College of Education, Gindiri, Plateau State, Nigeria : DEPARTMENT: History & International Studies Education EMAIL:lazarusmaigoro@gmail.com maigoro2010@yahoo.com

Abstract: The study considered the incorporation of artificial intelligence in the act of teaching and learning of history in public secondary schools in Nigeria. History is a discipline which is mostly seen as abstract in view of its nature and scope some of which spans beyond the existence of man. Most of the accounts are therefore given after the events have occured. This is one phenomenon that makes the teaching and learning of history seemingly difficult. This is further compounded by the lack of basic teaching and learning facilities in most Nigerian secondary schools where challenges like inadequate qualified teachers, ICT facilities, electricity supply and the like are evident. Artificial intelligence makes history learning more personalized, enhances engagement and motivation, development of critical thinking and also enables access to vast educational resources. It is this benefits that make AI more relevant to the teaching and learning of history in secondary schools. The study also explored the challenges bedevilling the utilization of AI for history instruction and made recommendations on the various ways that such challenges could be mitigated.

Paper 105 Title: MAXIMIZING THE POTENTIAL BENEFITS OF INTEGRATING ARTIFICIAL INTELLIGENCE IN TEACHING ENGLISH AS A SECOND LANGUAGE IN NIGERIA: CHALLENGES AND PROSPECTS.

Authors: Donatus Chijioke Nwabunze

Affiliation: Department of English and Literary Studies, Nwafor Orizu of Education, Nsugbe; | University of Nigeria, Nsukka

Abstract: As Artificial Intelligence (AI) reshapes global education, its integration into teacher-education in Africa presents both significant opportunities and complex challenges. In Nigeria, the lingering difficulties in teaching English as a Second Language (ESL) – including large class sizes, limited resources, and uneven teacher quality – underscore the urgent need for innovation. This position paper explores how AI tools can support more effective ESL instruction by enabling personalized learning, real-time feedback, and improved access to quality content. However, barriers such as inadequate infrastructure, low digital literacy among teachers, and policy gaps hinder adoption. The paper argues that to maximize AI's potential, teacher education programmes must incorporate AI literacy, invest in capacity building, and promote equity-driven policies. Strategic, context-sensitive integration of AI in ESL teaching can strengthen teacher preparation and improve language outcomes across diverse learning environments in Nigeria in particular and Africa in general.

Paper 106 Title: UTILIZATION OF ARTIFICIAL INTELLIGENCE FOR TEACHING AND LEARNING OF MICROLANGUAGE SKILLS AS EMERGING TREND IN A GLOBALISED WORLD

Authors: BENARD OJOBOR; PHD; MAKURDI; BENUE STATE-NIGERIA

Affiliation: DEPARTMENT OF ENGLISH LANGUAGE | FEDERAL COLLEGE OF EDUCATION, ODUGBO | ojoborbenard@yahoo.com |

Abstract: The 21st Century innovations in teaching and learning gives room for more effective instructional delivery as well as technical competence to enhance the students' learning, retention and proficiency in language education. This emerging trend on utilization of artificial intelligence will bring transformation in learning from traditional classroom to digitalized method of learning of language skills as it mostly appeal to the cognitive domain of learning. In today's ever- evolving education environment, the integration of artificial intelligence (AI) stands as a transformative force poised to redefined teaching and learning paradigms in

language education. This paper therefore, focused on utilization of Artificial Intelligence (AI) for teaching micro language skills such as listening, speaking, writing and leading to enhance proficiency and competence in the learning of languages. The paper also highlights the implications on (AI) application to language education and to project consequences of uncheck AI impacts on education and what to do to redeem the long-standing tradition of academic ethics and integrity in education considering the current trend of generative AI in delivering answers to students enquiries. It was recommended that the teachers should adapt to the new innovations in technology for adequate teaching and learning of language skills.

Paper 107 Title: TOWARDS ARTIFICIAL INTELLIGENCE ETHICS IN EDUCATION: IMPLICATIONS FOR CHARACTER AND MORAL DEVELOPMENT OF LEARNERS IN SCHOOLS AND COLLEGES.

Authors: Abdullahi Haruna; Ph.D

Affiliation: Department of Islamic Studies, Zamfara State College of Education, Maru, Zamfara State, Nigeria

Abstract: As Artificial Intelligence (AI) becomes increasingly embedded in educational systems, questions arise about its potential role in the moral training of learners. This study explores expectations surrounding AI's capacity to support ethical development in students. It focuses on how AI tools may influence values such as empathy, responsibility, and integrity. A mixed-methods approach will be employed to examines both opportunities and limitations. Findings are expected to reveal key elements in moral education with AI moral scenarios and feedbacks; including lack of human judgment, emotional sensitivity, and cultural awareness. Concerns were raised about over-reliance on AI and the risk of weakening human relationships. However, ethically designed with human guidance AI can serve as a complementary tool in character education. The study suggests that AI shouldn't replace human-led moral training, rather enhance it when grounded in clear ethical frameworks. Recommendations are offered for integrating AI responsibly in educational settings.

AI, Climate Change and Agriculture

Paper 1 Title: AI-DRIVEN AGRICULTURAL EDUCATION AND YOUTH ENGAGEMENT IN AGRIBUSINESS IN NIGERIA: AN ASSESSMENT

Authors: Serifat Olatundun SALAMI PhD

Affiliation: Department of Agricultural Education, School of Secondary Education (Vocational and Technical Education Programmes), Federal College of Education (Special), Oyo State, Nigeria | salami.serifat1803@fcesoyo.edu.ng;

Abstract: The study evaluates the potential impact of integration of AI tools in agricultural education on youth interest and participation in agribusiness. The study investigates the reasons many graduates of agriculture don't engage in agribusiness and suggests the use of digital tools in teaching agriculture which can enhance learning, improve access to information, make practical work easier and increase efficiency and productivity. Effective use of common AI tools by students in Agricultural Education in Nigeria was also examined.These tools include drones and sensors for real-time monitoring of crops and livestock, soil conditions and pest infestation; predictive analytics which analyze weather patterns for predicting yield and disease outbreak. The research reveals that AI may make farming more appealing, less time consuming, efficient and profitable thus encouraging youth participation in the sector. The research provides recommendations for efficient use of AI tools in agricultural education which include investing in infrastructure, integrating AI into curriculum at all levels of agricultural education program, and fostering a supportive policy environment.

Paper 2 Title: ARTIFICIAL INTELLIGENCE (AI) IN TEACHING AND LEARNING OF GEOGRAPHY FOR THE IMPACT OF GLOBAL WARMING ON HOUSEHOLDS OF ZARIA LOCAL GOVERNMENT AREA OF ZONE ONE (1) SENATORIAL DISTRICT KADUNA STATE, NORTH WESTERN NIGERIA

Authors: Abdullahi LAWAL Dutsinma

Affiliation: GEOGRAPHY DEPARTMENT | FEDERAL UNIVERSITY OF EDUCATION, ZARIA, KADUNA STATE, NIGERIA |

Abstract: This study investigates the integration of Artificial Intelligence (AI) in the teaching and learning of Geography, with specific focus on understanding the impact of global warming on households within Zaria Local Government Area of Zone One Senatorial District, Kaduna State, Nigeria. The study explores how AI-driven instructional tools, such as intelligent tutoring systems, virtual simulations, and

geospatial data analytics, enhance students' comprehension of environmental processes, spatial patterns, and climate change dynamics. Using a mixed-method approach, data were collected from secondary schools, geography educators, and selected households across the area to evaluate both educational and socio-environmental outcomes. Quantitative data from structured questionnaires and qualitative interviews revealed that AI assisted geography instruction significantly improves learners' spatial reasoning and environmental awareness. Moreover, findings indicate that global warming has notable effects on local households, including increased heat stress, reduced agricultural productivity, and heightened vulnerability to flooding and water scarcity. The research underscores that integrating AI technologies into geography education not only enriches teaching effectiveness but also empowers learners to engage critically with real-world climate issues affecting their communities. The study concludes that promoting AI literacy and climate education at local levels can foster adaptive capacity, informed decision-making, and sustainable development in Zaria, Kaduna State, Nigeria and beyond.

Paper 3 Title: ARTIFICIAL INTELLIGENCE FOR CLIMATE CHANGE MITIGATION: IMPLICATIONS FOR TEACHER EDUCATION DELIVERY IN NIGERIA AND AFRICA

Authors: CAROLINE N. IGBO- UCHI; PhD

Affiliation: DEPARTMENT OF GEOGRAPHY | COLLEGE OF EDUCATION, KATSINA –ALA, BENUE STATE.

Abstract: Climate change poses significant challenges to sustainable development in Nigeria and generally in Africa. Artificial intelligence (AI) offers promising solutions to mitigate these impacts. However, the integration of AI in teacher education delivery remains underexplored as many people are not well informed on the subject matter. This study investigates the potential of AI in enhancing teacher education for climate change mitigation in Nigeria and by extension in Africa. The study employs a mixed methods approach, combining surveys, interviews and case studies in carrying out the research at colleges of education in Nigeria. The study has examined the current state of AI adoption in teacher education, identified challenges and proposed strategies for effective integration. The paper also examines the intersection of AI-driven mitigation and teacher education in Nigeria and across Africa. It surveys AI applications relevant to mitigation, assesses readiness and constraints within teacher-education systems, proposes curricular and professional-development models, and outline policy, infrastructural, and ethical

recommendations for equitable implementation. A pilot project design is offered followed by an agenda for research, capacity building and policy action.

Paper 4 Title: ALIGNING AGRICULTURAL EDUCATION TEACHER PREPARATION PROGRAM FOR AI-DRIVEN FUTURE: IMPLICATIONS FOR PEDAGOGICAL APPROACH AND CURRICULUM DESIGN.

Authors: Marajos A; PhD

Affiliation: Department of Agricultual Education, College of Education Gidan Waya Kaduna State, Nigeria.

Abstract: The proliferation of Artificial Intelligence (AI) is profoundly impacting, reshaping and transforming the workplace, society and economy of nations including the ones in Africa. Consequently, the educational systems will need to evolve in such a manner as to arm students and future drivers of the economy with the knowledge and competencies to thrive alongside increasingly capable AI. This study examines the need for curriculum reformation and a shift in teaching methods so as to build competencies needed to effectively navigate an AI driven future economy in Africa. The study posits that the current curriculum and pedagogy rooted in the 20th century industrial model are misaligned with the abilities students need to cultivate the skillsets required for survival in an AI-powered world and clarifies that pedagogical approaches such as project-based, hands-on-learning, collaboration, problem-solving and life-long learning will help equip the learner especially of a skill area as agricultural education for the challenge ahead. The research stressed the need for a review of the agricultural education curriculum to integrate AI literacy and leveraging of AI tools to improve instruction in agriculture classrooms. It was suggested that educational policy makers should encourage collaboration between educational institutions and industry stakeholders to ensure responsiveness to the rapidly evolving landscape of AI in education.

Paper 5 Title: AWARENESS AND UTILIZATION OF ARTIFICIAL INTELLIGENCE TECHNOLOGY BY AGRICULTURAL EDUCATION LECTURERS IN COLLEGES OF EDUCATION IN SOUTH EAST NIGERIA

Authors: Igwe Augustine Abor

Affiliation: Department of Agricultural Education, | Ebonyi State College of Education Ikwo | Email: igweaustine75@gmail.com

Abstract: The study was conducted to determine the awareness, competence and utilization of artificial intelligence by Agricultural Education lecturers in colleges of education in south East Nigeria. Descriptive survey design was adopted. The population comprised 105 lecturers of Agricultural Education in the colleges of education in the South-East zone of Nigeria. The entire population was studied hence there was no sampling. Structured questionnaire was used as instrument for data collection. The instrument was validated by three experts, two from the Department of Agricultural Education and one from Measurement and Evaluation in the Department of Educational Foundation, Alex Ekwueme Federal University Ndufu Alike, Ikwo. The reliability of the instrument was determined using Cronbach Alpha Reliability coefficient. The coefficient indexes gathered from the three clusters were 0.55, 0.95 and 0.64. Analysis was done using Mean and Standard Deviation to answer the research questions while t-test was used to test the hypotheses at 0.05 level of significance. The findings showed a low level of awareness of artificial intelligence. The study also showed that Agricultural Education lectures do not have adequate competence on how to employ artificial intelligence in teaching. Also, the extent of utilization artificial intelligence by lecturers is low. The study recommended among others that there should be adequate provision of artificial intelligence tools in colleges of education for effective teaching and learning of agricultural education contents.

Paper 6 Title: BUILDING DIGITAL RESILIENCE IN TEACHER EDUCATION: THE ROLE OF AI IN EMPOWERING EDUCATORS OF WOMEN AND GIRLS IN CLIMATE- AND CONFLICT-AFFECTED AFRICAN COMMUNITIES

Authors: Zubaida Muhammad Musa

Affiliation: Sa'adatu Rimi College of Education, Kumbotso, Kano | Department of Adult and Non-Formal Education | Email: zmmusa.anf@srcoe.edu.ng | +234 806 353 5838

Abstract: This study investigates the integration of digital resilience into teacher education to empower educators working with women and girls in climate- and conflict-affected communities of Northern Nigeria. Conducted in Kano, Katsina, and Jigawa states, the research employs a mixed-methods design grounded in gender and development frameworks and the sustainable livelihood approach. A multistage sampling technique selected 12 Local Government Areas and 12 educational

institutions, resulting in 180 participants: teacher educators, practicing teachers, administrators, traditional leaders, women, and girls. Data were collected via structured surveys, interviews, focus groups, a digital competence assessment based on the UNICEF Educators Digital Competence model, and document analysis. Quantitative data were analyzed using descriptive and inferential statistics; qualitative data underwent thematic analysis. Findings reveal a significant deficit in digital resilience, with only 23% of teacher educators demonstrating advanced technology integration skills and a mere 12% trained in gender-responsive digital pedagogy. Infrastructure limitations, especially in rural areas, and socio-cultural norms were major barriers. However, AI-powered tools show promise in bridging gender disparities in learning outcomes, and community engagement proves critical for successful technology adoption. The study recommends institutionalizing Digital Resilience Centers in teacher training colleges, implementing gender-responsive technology access programs, scaling multilingual AI educational tools and developing dedicated policy and funding frameworks. These aim to build a robust, gender-responsive, technology-enabled teacher education model for empowering women and girls in vulnerable contexts.

Paper 7 Title: INTEGRATING ARTIFICIAL INTELLIGENCE AND EMERGING TOOLS IN AGRICULTURAL EDUCATION: IMPLICATIONS FOR TEACHER DELIVERY IN AFRICA

Authors: Asifat Bukola Rianat; ABDULQUDIRI; Ismail Ola

Affiliation: Federal College of Education, Iwo, Osun State, Nigeria | Department of Agricultural Education. | Email: asifatrb@fceiwo.edu.ng | Federal College of Education Iwo, Osun State, Nigeria | Email: abdulquadirismailo@gmail.com | Department of Home Economics

Abstract: Artificial Intelligence (AI) and emerging digital technologies are revolutionizing education globally, and agricultural education in Africa stands at the forefront of this transformation. Given that agriculture contributes significantly to Africa's gross domestic product and employment, the integration of AI-powered systems, data analytics, drones, Internet of Things (IoT), and virtual laboratories into agricultural curricula represents an unprecedented opportunity for innovation. However, this shift requires that teachers evolve from traditional knowledge transmitters into facilitators of digital and data-driven learning. This position paper argues for the establishment of a comprehensive framework that empowers agricultural educators with AI literacy, adaptive pedagogy, and curriculum redesign competencies. It also examines the challenges of infrastructure, digital inequality, resistance to change, and policy incoherence that constrain effective integration.

Finally, it proposes actionable strategies—including targeted professional development, public–private partnerships, digital infrastructure investment, and inclusive policies—to support teacher transformation. By aligning teacher education with the digital agricultural revolution, Africa can cultivate a future-ready workforce capable of driving sustainable food systems and technological innovation.

Paper 9 Title: UTILIZATION OF ARTIFICIAL INTELLIGENCE FOR ENHANCING THE TEACHING OF AGRICULTURAL EDUCATION IN COLLEGES OF EDUCATION IN NORTHWEST, NIGERIA.

Authors: ABU Mohammed PhD

Affiliation: Department of Agricultural Education | Federal College of Education (Technical) Bichi, Kano State, Nigeria | abumohammed059@gmail.com | 08069099370

Abstract: This study focused on the Utilization of Artificial Intelligence for enhancing the Teaching of Agricultural Education in Colleges of Education in Northwest, Nigeria. Survey research design was adopted for the study and three research questions, and three hypotheses guided the study. The population for the study consisted of 150 lecturers of Agricultural Education both in Federal and State Colleges of Education in the study area. The lecturers were sampled using convenience sampling techniques based on the peculiarity of the study. The instrument for data collection was developed from the review of related literature and was validated by three experts. Cronbach alpha method was used to determine the reliability and internal consistency of the instrument with a reliability co-efficient of 0.73. The instrument was administered on the respondents with the help of six research assistants. The instrument was later retrieved from the respondents with a return rate of 100%. The data generated was analyzed using frequency distribution table, mean and standard deviation to answer the research questions while the hypotheses of no significant difference were tested using t-test at the probability of 0.05 levels of significance at relevant degree of freedom. The results of the analysis indicated that both Federal and State Colleges of Education lecturers are engaging with AI technologies, but their utilization remains at an emerging stage, characterized by more use of basic AI applications such as plagiarism detection or checking (Item 10: FCE = 3.21; SCOE = 2.93), registering students for courses using AI tools (Item 6: FCE = 3.15; SCOE = 2.52) and lesson preparation among others, The study also revealed that lecturers in both FCEs and SCOEs moderately utilize AI tools for various educational tasks, with mean values

ranging between 1.21 and 3.33 for FCEs, and 1.51 and 2.99 for SCOEs. It also identified inadequate training of teachers for AI compliance, with the highest mean scores recorded (FCE = 3.61; SCOE = 3.63) as challenges facing lecturers in the utilization of AI among others. It was recommended that capacity-building programmes, provision of AI facilities and institutional support should be provided to enhance lecturers' competence and confidence in using AI for effective agricultural education delivery.

Paper Title: ENHANCING BIOLOGY TEACHERS; TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE THROUGH AI-MEDIATED PERSONALIZED FEEDBACK: A CROSS-COUNTRY STUDY IN NIGERIA AND GHANA

Author: Emmanuel Ikechukwu Nnamonu

Affiliation: Department of Biology, Federal College of Education, Eha-Amufu, Enugu State nnamonue@gmail.com; +234(0)8064855635

Abstract: This study examines AImediated personalized feedback's role in strengthening biology teachers' TPACK in Nigeria and Ghana. Reviewing recent intelligent tutoring systems, generative AI, and adaptive feedback via AITPACK frameworks, the study assesses effects on content, pedagogical, and technological knowledge intersections. Contextual challenges such as digital infrastructure deficits, linguistic diversity, and ethical issues in rural multilingual settings are examined for their impact on AI adoption and equity. Pilots like Kwame for Science and GPTbased educator tools show promise, yet TPACK research remains limited. The study highlights biology specific gaps, advocates adapted AITPACK measures, and proposes crosscountry comparative designs and roadmap for localized tool codesign, evaluation, and integration.

Paper Title: Integrating AI-Driven Adaptive Learning into Pre-Service Teacher Training in Rwanda: Opportunities, Challenges, and Institutional Implications.

Authors: Kamukama Jimmy Spice.

Affiliation: University of Kigali

Abstract: This study focused on the Utilization of Artificial Intelligence for enhancing the Teaching of Agricultural Education in Colleges of Education in Northwest, Nigeria. Survey research design was adopted for the study and three research questions, and three hypotheses guided the study. The population for the study comprised of 150 lecturers of Agricultural Education both in Federal and State Colleges of Education in the study area. The lecturers were sampled using convenience sampling technique based on the peculiarity of the study. The instrument for data collection was developed from the review of related literature and was validated by three experts. Cronbach alpha method was used to determine the reliability and internal consistency of the instrument with a reliability co-efficient of 0.73. The instrument was administered on the respondents with the help of six research assistants. The instrument was later retrieved from the respondents with a return rate of 100%. The data generated was analyzed using frequency distribution table, mean and standard deviation to answer the research questions while the hypotheses of no significant difference were tested using t-test at the probability of 0.05 levels of significance at relevant degree of freedom. The results of the analysis indicated that both Federal and State Colleges of Education lecturers are engaging with AI technologies, but their utilization remains at an emerging stage, characterized by more use of basic AI applications such as

plagiarism detection or checking (Item 10: FCE = 3.21; SCOE = 2.93), registering students for courses using AI tools (Item 6: FCE = 3.15; SCOE = 2.52) and lesson preparation among others, The study also revealed that lecturers in both FCEs and SCOEs moderately utilize AI tools for various educational tasks, with mean values ranging between 1.21 and 3.33 for FCEs, and 1.51 and 2.99 for SCOEs. It also identified inadequate training of teachers for AI compliance, with the highest mean scores recorded (FCE = 3.61; SCOE = 3.63) as challenges facing lecturers in the utilization of AI among others. It was recommended that capacity-building programmes, provision of AI facilities and institutional support should be provided to enhance lecturers' competence and confidence in using AI for effective agricultural education delivery.

Paper Title : ETHICAL CONCERNS IN AI ADOPTION FOR HIGHER EDUCATION: PERSPECTIVES FROM FACULTY AT THE SCHOOL OF EDUCATION, MOI UNIVERSITY

Author: Susan Jepkoech Kurgat, kurgatsusan@gmail.com, Elizabeth Akinyi Owino oakinyi@uok.ac.rw

Affiliation: School of Education, Moi University, Kenya, School of Education, University of Kigali, Rwanda

Abstract: The rapid integration of artificial intelligence (AI) technologies into higher education institutions has generated considerable excitement about transformative possibilities alongside growing concerns about ethical implications. While AI promises to enhance teaching and learning through personalized instruction, automated assessment, and data- driven decision-making, its adoption raises fundamental questions about academic integrity, equity, privacy, and the changing nature of educational relationships. This qualitative study explores the ethical challenges associated with AI adoption in higher education from the perspectives of faculty members at the School of Education, Moi University, Kenya. Using semi-structured interviews with 15 faculty members across different departments and career stages, this research investigates how educators perceive, experience, and navigate the ethical dimensions of AI integration in their teaching, research, and administrative practices. The interviews, conducted in August 2025, explored multiple dimensions of AI ethics including academic integrity concerns, algorithmic bias, privacy issues, pedagogical implications, and equity considerations. The findings reveal complex perspectives among faculty members who acknowledged potential benefits while expressing significant concerns about ethical risks inadequately addressed in institutional policies. Key themes include erosion of

academic integrity, algorithmic discrimination, inadequate transparency, tensions between efficiency and relational teaching, data privacy concerns, marginalization of faculty voices, and contextual factors specific to the African setting. The study concludes that ethical AI adoption requires participatory governance frameworks, culturally responsive development, robust institutional policies, and ongoing professional development.

Paper Title : Title: Novel Phishing Risk Detection and Awareness Framework Using Random Forest with Weighted Bootstrap Sampling and Elastic Net-Based Feature Optimization

Authors: Voltaire ISHIMWE , Adeline DUSENGE , and Emmanuel BUGINGO

Affiliation: School of Computing and Information Technology, University of Kigali, Kigali, Rwanda.

E-mail: voltaireishimwe@gmail.com , dusengead@gmail.com, corresponding author: ebugingo@uok.ac.rw

Abstract: Phishing attacks are among the most widespread cybersecurity threats in the digital age, leveraging human psychology to compromise sensitive information and organizational assets. Considering the improvements in detection technologies, the sophistication of phishing campaigns further evolves, thus calling for more robust and interpretable defense mechanisms. This paper proposes a novel Phishing Risk Detection and Awareness Framework through the synergistic integration of Random Forest ensemble learning with Weighted Bootstrap Sampling and Elastic Net feature selection for addressing both class imbalance and feature redundancy challenges inherent in phishing detection. The framework was rigorously trained and then validated on a total of 10,247 labeled email samples, including 3,586 phishing emails and 6,661 legitimate ones, with 64 meticulously crafted features extracted from email headers, content, and metadata. Elastic Net regularization with α=0.5 and λ=0.01 identified ten critical discriminative features: suspicious keyword density, URL domain age, sender reputation score, and HTTPS presence, among others, reducing dimensionality by 84% while preserving the predictive power of the model. This weighted bootstrap sampling increased the phishing weight by a factor of 1.86, thus effectively coping with class imbalance issues without the synthesis of synthetic data. Finally, comprehensive experimental evaluation demonstrates exceptional performance: 96.2% overall accuracy, 94.8% precision, 95.7% recall, 95.2% F1-score, and an AUC-ROC of 0.983. Extensive comparative

analysis demonstrated significant improvements over baseline models, with superior performance to standard RandomForest by 4.3%, SVM by 8.7%, and Logistic Regression by 11.5% in F1-score. Only 78 false positives and 88 false negatives were recorded across 2,049 test samples from the confusion matrix, confirming the strong generalization capability of the proposed solution. Feature importance analysis provided actionable insights for security practitioners, while the average prediction time of 0.003s per email supports real-time deployment. Thus, this research brings forth three major contributions: a hybrid sampling-selection methodology which can address the problems of imbalance in data and redundancy of features simultaneously; an empirical validation showing superior performance across various metrics; and it is interpretable and suitable for automated email filtering systems and user awareness training programs. The findings demonstrate the effectiveness of integrating ensemble learning with regularized feature selection to deliver scalable, interpretable, and user cantered solutions for phishing risk mitigation. Our code is publicly available at

PaperTitle: ARTIFICIAL INTELLIGENCE IN NIGERIAN CLASSROOMS: PROSPECTS, CHALLENGES, AND THE WAY FORWARD

Author: Isma'ila Ado Funtua, PhD

Affiliation: Department of Integrated Science, Isa Kaita College of Education, Dutsin-Ma, Katsina State, Nigeria

Abstract: There is increasing interest in the use of artificial intelligence technologies, which have become a transformative force in the field of education, with the global systems increasingly adopting the AI technology to enhance teaching and learning outcomes. Thus, the AI era places Nigeria at a pivotal point in redefining its educational landscape. This paper explores the emerging prospects and inherent challenges facing the integration of AI into teaching across Nigerian education systems. Extracts from recent developments, pilot initiatives, and interaction with stakeholders, highlights AI's potential to personalize learning, automate administrative tasks, bridge teacher shortage and support inclusive education for diverse learners. The paper also critically examines important impediments including, infrastructural deficits, low level of digital literacy among educators, policy gaps, and socio-economic disparities that affects the adoption of AI equitably into the Nigerian education systems. The paper also provides insights into the preparedness of teachers and educational institutions for AI integration and offers policy and practice recommendations to ensure, ethical and appropriate

implementation, and underscores the importance of inclusive strategies for AI deployment in developing Nigeria.

Paper Title: A LangChain-Powered Course-Bound AI Assistant for Strengthening Academic Integrity and Teacher-Education Delivery in Rwanda

Author: Mr. Obed IMBAHAFI: Tutorial Assistant, School of Computing and IT, University of Kigali,Rwanda Email: oibahafi@uok.ac.rw

Corresponding Author: Dr. BUGINGO Emmanuel: Lecturer, School of Computing and IT, University of Kigali, Rwanda Email: ebugingo@uok.ac.rw

Affiliation: University of Kigali, Rwanda

Abstract: The rapid growth of Large Language Models (LLMs) and Generative AI has created both opportunities and challenges for higher education globally. In Africa, and particularly in Rwanda, teacher-education programmes are facing rising academic integrity problems as students increasingly misuse open-ended tools such as ChatGPT, Gemini, and Claude for assignments, assessments, and research work. This paper presents a course-bound, LangChain-powered AI assistant designed to promote ethical learning, personalised academic support, and integrity-focused engagement. Unlike general-purpose chatbots, the proposed system operates only on instructor-approved course materials using Retrieval-Augmented Generation (RAG), ensuring accurate, curriculum-aligned responses. The prototype integrates access control, usage logging, academic-integrity checks, and institutional oversight. By grounding AI in verified learning resources, the system offers a safer alternative that supports teacher-education in Africa and responds to emerging concerns about AI misuse in universities. This work contributes to ongoing debates on how African higher-education institutions can adopt AI responsibly to strengthen teaching, learning, and academic integrity.

Paper Title: ARTIFICIAL INTELLIGENCE AND EMERGING ISSUES IN EDUCATION; ARTIFICIAL INTELLIGENCE AND DELIVERY OF QUALITY EDUCATION

Author: Samuel Wabala Wakuloba

Affiliation: Graduate school, University of Kigali, Rwanda.

Abstract: Technology has largely influenced the trajectory the education sector has taken in most of the developing countries, more so in Africa. The quality of education offered in this dispensation is entirely dependent on the utilization of technology to address the current trends in different sectors. It is hence crucial for the education sector to embrace Artificial Intelligence in the delivery of quality education. i. This paper is tailored to determine the role of Artificial Intelligence in the provision of quality education through personalised learning, setting of infrastructure that enables people with disabilities to access quality education ii. The article seeks to evaluate the place of Artificial intelligence in addressing the challenge of language barrier in the provision of quality education in Africa iii. It will critically scrutinise the effect of over reliance on Artificial Intelligence while making crucial academic oriented decisions and its implications on the labour market iv. The paper seeks to realise mitigative measures that should be taken to avoid the abuse of Artificial Intelligence compromising the quality of graduates released in the labour market. It is worth noting that Artificial Intelligence plays a critical role in determining the quality of education when utilized in the right manner. The African continent needs to institute policies that are supportive of the provision of quality and relevant education in this era.

Paper Title : Application Of AI In Designing Learning Resources for Teaching Technical Trade Courses in Technical Colleges

Author: Nura Mani Kusada

Affiliation: Department of Technical Education, Isakaita College of Education Dutsinma, Nigeria

Abstract : The application of Artificial Intelligence (AI) to design learning resources for teaching vocational courses in colleges represents a major advance in vocational education. AI-driven solutions enable creation of personalized, adaptive, and industry-relevant learning experiences that address diverse needs and skills. Leveraging technology, technical colleges can provide automated lesson plans, interactive simulations, and real-time feedback mechanisms, ensuring that students gain job-related skills relevant to the needs of today's workforce. AI-enabled Technical Colleges facilitate efficient content development and management, automate assessment processes, and provide educators with insights to improve curriculum. These technologies support immersive learning environments through virtual and augmented reality, enhancing student skills and industry readiness. While challenges like achieving consistency and continuing to develop a workforce remain, the integration of AI into learning model design offers transformative

potential for enhancement, and alignment with evolving technology standards, ultimately improving educational outcomes in the technology-driven business world.

Paper Title: ARTIFICIAL INTELLIGENCE AND EMERGING INSECURITY CHALLENGES: IMPLICATIONS FOR TEACHER EDUCATION DELIVERY IN NORTHERN NIGERIA

Authors: Sa'ad Abdulmumin Kofarbai1, Umar Audi Isma'ila2

Affiliation: 1. Department Of General Studies Education, Isa Kaita College of Katsina, Katsina State, Nigeria.

2. Department of Computer Science, Katsina State Institute of Technology and Management, Katsina State, Nigeria.

Abstract : Amid persistent insecurity and evolving educational challenges, understanding how Artificial Intelligence (AI) can sustain teacher education delivery in Northern Nigeria has become increasingly crucial. This study adopted a quantitative, cross-sectional survey design to examine the effects of insecurity, teachers' readiness for AI integration, and the predictive role of teacher efficacy. Data from 184 valid respondents across colleges of education and universities in the North-West, North- East, and North-Central regions were evaluated. Findings revealed that 72.3% of teachers experienced significant instructional disruption due to insecurity, while 68.5% reported limited access to professional development. Despite these conditions, participants showed moderate to high AI awareness (M = 3.84, SD = 0.62

Paper Title : The Cost of Intelligence: Navigating the "Wrapper" Trap, Energy Constraints, and the Case for Sovereign Small Language Models in African Higher Education

Author: Kafui Odzangba Dake

Affiliation: University of Kigali

Abstract : The discourse on Artificial Intelligence (AI) in Africa has centered primarily on adoption rates and integration within education systems. This paper reframes the conversation by arguing that the continent's core challenge is not technological capability, but economic sustainability. It contends that the critical question is not whether AI can transform African higher education, but whether the continent can afford the ongoing costs of such transformation. Currently, most AI

applications in African Higher Education Institutions (HEIs) rely heavily on "wrappers" built on APIs from Western foundational models such as those developed by OpenAI, Google, and Meta. This dependency, the paper argues, leaves African institutions vulnerable as current subsidized pricing models give way to costlier commercial structures. Without local alternatives, HEIs may soon be priced out of the AI ecosystem they are rapidly embracing. To address this, the paper proposes two strategic pivots: (1) the transition to Small Language Models (SLMs) that are domain-specific, efficient, and feasible for local training and hosting; and (2) a Pan-African approach to linking computational capacity with energy infrastructure, emphasizing the need for sustainable, baseload power to support AI sovereignty. The paper concludes by warning that if African educators are trained exclusively on unsustainable tools, rising costs could trigger educational backsliding. It advocates for a roadmap focused on fiscal resilience and infrastructural sovereignty, rather than dependency on foreign AI ecosystems.

Paper Title: HAUSA ORAL SONG EDUCATION:THE ROLE OF ARTIFICIAL INTELLIGENCE

Author: HAMZA SHEHU USMAN

Affiliation : HAUSA DEPARTMENT FEDERAL COLLEGE OF EDUCATION (FCE), KATSINA.

Abstract : Hausa oral songs are a repository of cultural heritage, serving functions ranging from entertainment to empowerment and security awareness as well as moral instruction. The traditional modes of teaching and learning these songs are threatened by modernization and reduced intergenerational transmission. Through the secondary source of data collection method and reviews of existing AI tools relevant to oral music teaching and learning tailored for Hausa oral songs, this paper examines the role of Artificial Intelligence (AI) in preserving, teaching, and learning Hausa oral songs. It explores how AI can support documentation, transcription, pronunciation, and even cultural interpretation through innovative educational tools. This study suggest that by integrating AI with traditional knowledge systems, educators can revitalize interest in Hausa oral traditions while enhancing access and engagement for learners.

Paper Title: THE USE OF ARTIFICIAL INTELLIGENCE FOR ADAPTIVE ASSESSMENT AND EVALUATION IN TEACHING GENERAL MATHEMATICS IN ABIA STATE COLLEGE OF EDUCATION (TECHNICAL), AROCHUKWU

Author: EZE EMENIKE KELECHI

Affiliation: DEPARTMENT OF MATHEMATICS EDUCATION,ABIA STATE COLLEGE OF EDUCATION (TECHNICAL), AROCHUKWU, NIGERIA

Abstract: The use of Artificial Intelligence (AI), in education has changed the way students learn and are assessed. This study explores the potential of AI-driven adaptive assessment and evaluation in teaching general mathematics in Abia State college of Education (Technical). An AI-based system was developed to provide personalized assessment and feedback to students, adjusting to their individual learning needs and abilities. The system was tested with fifty, (50) students of the Abia State college of Education (Technical), Arochukwu, and the result showed significant improvements in student engagement and motivation. The AI-driven adaptive assessment approach demonstrated the ability to identify knowledge gaps and provide targeted interventions, leading to more effective learning outcomes. This research contributes to the growing body of evidence on the effectiveness of AI in education and highlights the potential for AI-driven adaptive assessment to revolutionize the teaching and learning of general mathematics in colleges of Education across Nigeria.

Paper Title : The Role of AI in Bridging Rural Schools ICT Access gap for Workforce Development in the Western Province

Author: Oniye, Abdulrazaq Olayinka (PhD) And Emmanuel Sinabubaraga

Affiliation: Graduate School, University of Kigali

Abstract :Intoday digital era, life without Information and Communication Technology (ICT) integrated with Artificial Intelligence (AI) is increasingly unimaginable. ICT and AI play vital roles in education, communication, health, business or workplace, and daily life activities. This study focus was on how limited access to ICT hinders educational reform and economic growth thereby underscoring the necessity for AI integration in bridging the digital gap. This paper is guided by three objectives: to examine the role AI integration in bridging the ICT infrastructure resources gap among the schools located in the rural areas, assess

how AI integration to digital literacy and training influence workforce readiness among rural teachers and youths and analyze how AI integration would enhance affordability of ICT tools and services delivery among schools in Karongi District. The study adopts a mixed- methods approach, targeting teachers, school leaders, and students in selected schools across the district. Purposive, and simple random sampling methods to identify 160 participants with AI and direct linkage with ICT utilization, training, or policy implementation. Data will be collected through structured questionnaire forms, focus group discussions, surveys, policy analysis and interview schedules. The study would be guided by the Digital Capital Theory, (which emphasizes digital access as a form of social equity), as well as the Human Capital Theory, (which links education and skill acquisition to workforce productivity. Preliminary findings are expected to efficacy of AI integration in bridging infrastructural barriers, gaps in teacher digital competence, personnel trained, technology, ICT awareness, and integration with workforce needs. It is anticipated that the outcome of the study will inform education reforms and policy, frameworks capable of strengthening AI integration as a mechanism for bridging ICT infrastructure gap, improve digital literacy, and ultimately enhance workforce readiness in Rwanda's rural schools.

Paper Title: From Zero to Certified: Building Rwanda's First Nationally Accredited AI Education Program

Author: Peter Sangil Hwang,

Affiliation: Managing Director, Arise AI Agency (Arise Digital Solutions Ltd.) Kigali, Rwanda.

Abstract : Rwanda's digital transformation under Vision 2050 faces a critical barrier: the absence of standardized, nationally recognized AI education programs. This gap hinders workforce development and limits innovation capacity in a rapidly evolving technological landscape.This study examines how a technology startup, Arise AI Agency, developed and implemented Rwanda's first RTB-authorized one-year AI Technology short course program (120 credits) under the Rwandan Qualification Framework within twelve months by reversing traditional educational development sequences through grassroots validation before seeking formal accreditation. We employed a retrospective case study approach, analyzing data collected during program operations from November 2024 to October 2025. Data sources included participant assessments (n=80+), course evaluations, RTB authorization documents, and program delivery records across multiple partnerships. Key Findings: Our

practice-to-policy model achieved: (1) training of 100+ individuals with 87% completion rate; (2) Rwanda's first RTB-authorized one-year AI Technology short course program (120 credits) under the Rwandan Qualification Framework; (3) development of a cascading apprenticeship model where graduates become field-trained instructors; (4) establishment of five strategic partnerships; and (5) successful transition to commercial viability with paid contracts from NGOs, educational institutions, and international development organizations.This case challenges conventional educational program development by demonstrating that: (1) Practical outcomes can, in some cases, serve as credible substitutes for institutional credentials in emerging technology education; (2) competency-based instructor training is more sustainable than traditional credentialism; (3) effective technology education requires unprecedented public-private-academic collaboration; and (4) evidence-based policy development accelerates rather than constrains innovation. The model offers a replicable framework for emerging technology education across Africa.

Paper Title: AI and Emerging Issues in Adult Education and its Implication for Teacher Education in Africa

Author: Abubakar Dayyabu Tsauri

Affiliation: Department of Adult and Non-formal Education, Federal College of Education, Katsina. abubakardayyabutsauri@gmail.com

Abstract : The integration of Artificial Intelligence (AI) into adult education is reshaping learning landscapes across Africa, presenting both opportunities and challenges. This paper explores emerging issues such as digital inequality, curriculum relevance, data privacy, and the evolving role of educators in AI-driven environments. It examines the implications of these developments for teacher education, emphasizing the urgent need for re-skilling and up-skilling of educators to effectively facilitate adult learning in a technology-enhanced context. The paper also brings to fore the importance of responsive teacher education policies and inclusive digital infrastructure to bridge the knowledge and access gaps. Ultimately, it calls for a transformative approach to teacher preparation, grounded in innovation and adaptability, to ensure quality adult education across diverse African contexts.

Paper Title : AI for Human Capital and Financial Inclusion: Integrating Education, HRM, and Finance to Power Africa's Digital Economy under AfCFTA

Authors : Ruth Odengo; Luqman Afolabi & Thomas Tarus

Affiliation: Graduate School, University of Kigali, Rwanda

Africa stands at a demographic and economic crossroads: by 2075, one-third of the global workforce will be African, yet SMEs face a $331 billion annual financing gap. The AfCFTA Protocol on Digital Trade (2024) offers a legal foundation for a $712 billion digital economy by 2050, but frameworks alone cannot deliver impact without activating a "tri-sector flywheel" that integrates Education (talent creation), HRM (talent matching), and Finance (capital access) through AI. Fintech leads adoption AI-driven credit scoring by firms like Tala and Pezesha cuts default rates by 25%, while PAPSS uses AI compliance tools to secure instant cross-border payments with 98.7% fraud-detection accuracy. Yet a severe skills gap persists: Africa lags global AI penetration, requiring a pivot from basic digital literacy to advanced AI engineering via HEIs and TVET integration. HRM platforms like Fuzu reduce time-to-hire by 75% but raise bias concerns, demanding fairness-aware AI and human oversight. Governance tensions—data sovereignty vs. free-flow mandates necessitate harmonized laws, federated sandboxes, algorithmic audits, and green compute investments. A 12–24-month roadmap prioritizes operationalizing data corridors, scaling multi-jurisdictional sandboxes, mandating bias audits, and funding local infrastructure to ensure Africa converts digital trade rules into inclusive growth, jobs, and financial resilience.