

Challenges Confronting History Teachers in the Integration of AI to the Teacher Education in Nigeria: A Case Study of Colleges of Education in Kwara State, Nigeria

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Abstract

This study intends to examine the challenges confronting History Lecturers in the integration of Artificial Intelligent to the Teacher Education in Nigeria particularly the state-owned colleges of Education in Kwara state. The Technological Pedagogical Content Knowledge (TPACK) model was used for the work. A descriptive methodology was adopted for this work with two conventional colleges of education as purposive samples. The research identifies challenges of integrating AI into historical classes to include generating relevant course contents especially local events, adoption of AI driven tools, natural events and language processing, and inadequate tutoring system. The study highlights the advantages of AI such as; unlimited access to literature, student centered learning approach, teachers' exposure to teaching techniques, generating relevant instructional materials among others. However, many Teachers of history in African Teacher training institutions are not verse in the usage of artificial Intelligence, a revolution that has come to stay in the education sector which every Teacher in the twenty-first century must embrace. The study therefore recommends that African Teachers' Education institutions should embark on aggressive AI education through regular workshops to the Teacher of Teachers.

Key words: AI integration, History Teachers, Teachers Education, Africa, Challenges

I. Introduction

The rapid advancement in teaching and learning across academic disciplines have witnessed rapid expansion with the evolution of Artificial Intelligence (AI). The dawn of twentieth century gave birth to the rapid technological advancement where Information and Communication Technology (ICT), no doubt has changed the world order in human affairs. Artificial Intelligence is a by-product of technological advancement whereby AI tools have been designed to perform tasks normally requiring human intelligence such as reasoning, problem solving, and learning tools to support teaching and learning process (Russel and Narvis, 2021). In Nigeria, the integration of AI into teaching and learning remained at nascent stage particularly in the teacher training institutions where prospective teachers are produced. (Adeyemi, 2021).

Teachers of history at both secondary and colleges of education due to the declining nature of the subject in terms of students' enrolment have not been receiving the desired opportunities and exposures to upgrade their pedagogical skills especially in the area of technological training that can facilitates the integration of AI to the teaching of history. It is a known fact that, the teaching and learning of history has suffered a serious setback in the Nigerian schools and colleges since mid-90s due to the deliberate policy of the military government to scrap the subject out of the curriculum. Historical studies became a casualty because of being misunderstood as a body of knowledge particularly by the western-educated non-historian Africans because of naive comparism of History with science and technology (Lasisi 2011).

The argument of these leaders is that History cannot bring the desired development for a nation because it is more of stories of kingdoms and empires as well as successions disputes and war as against science and technology that catalysed industrial growth and development. This was part of the reasons for the successive governments in Nigeria to encourage the study of Science, Technology, Engineering and Mathematics (STEM) in our schools with 60% and 40% for humanities including history. The STEM fields appear to be recognised as the most necessary for survival, development and progression for future generations. More young people are encouraged to adopt practical and useful

stem skills, urged to reject the impractical skills found in humanity fields such as arts and literature that are dismissed as impediments on the road to progress (Falola 2018).

History as one of the humanity fields necessary for developmental studies is not just a mere story of the past but one of essential education. Essential education is concerned with the inculcation in the student not just knowledge but skills that they need to survive and bring about changes in society (Jekayinfa, 2014). Apart from the primordial challenges which are not unconnected with obsolete curriculum, poor funding, relevancy, and marketability faced by the History lecturers, there are new ones posed with the integration of AI to the teaching of History. The identified challenges include inadequate Technological infrastructures, limited digital literacy, insufficient training on AI applications, stereotypic attitudes among the Lecturers and difficulties in aligning AI tools with historical content and pedagogical approaches. These challenges have further made History more difficult for the young learners whom their generation has a strong attachment to Information Communication Technology (ICT). It has also affected the level of students' enrolment in History because with the primordial and AI challenges combined, it did not attract many learners. Hence, the subject is near extinction.

However, with the re- introduction of History back to the basic education level recently which has been made a compulsory subject from basic 1- JSS3, it is a matter of necessity for colleges of education in Nigeria to produce teachers that will be equipped with the knowledge of not only the history as a subject matter but with the proficiency in ICT and application of AI which could project them as global teachers. Hence, there is the need to integrate Artificial Intelligence into the teaching and learning of history in Nigeria teacher training institutions.

A. Statement of the Problem

History as a subject has faced a significant decline in enrolment over the past thirty years, largely due to government policies that downgraded it to an elective subject in Nigerian secondary schools. This decline nearly led to its disappearance until its reintroduction as a distinct subject separate from social studies in 2016. However, the federal Ministry of Education has now mandated History as a compulsory subject for all primary and junior secondary schools, supported by the training of 3,700 social studies and civic teachers to teach history at the basic level. This reinstatement and compulsory status have imposed increased pressure on lecturers in teacher training institutions to produce qualified history teachers equipped to educate a new generation of students who live in the computer and digital communication era.

To address the urgent demand for world-class history teachers in Nigerian schools, lecturers must adapt to global educational standards by integrating Artificial Intelligence into their teaching activities in order to meet up with the global standard. However, History Lecturers in teacher training institutions face significant challenges in adopting AI due to infrastructural inadequacies, limited AI knowledge, and cultural and ethical concerns among others. In view of the foregoing, the paper examined these challenges and proffered appropriate solutions to them.

B. Research Objectives

The main objective of this study is to investigate the main challenges faced by History Lecturers in the integration of artificial intelligence tools into teaching History in colleges of education in Kwara State. Specific Objectives include:

1. to identify the specific technological, pedagogical and infrastructural barriers hindering AI integration in history education;
2. to examine the level of knowledge and training possessed by the History Lecturers on the application of AI in teaching and
3. to proffer solutions to the identified challenges.

C. Research Questions

This Study addresses three research questions:

1. What is the perception of Lecturers as regards instructional, pedagogical and technological barriers in AI integration to the History Teaching?
2. to what extent is Lecturers' knowledge and training in the use of AI?
3. what are the solutions to the identified challenges?

D. Significance of the Study

This research is important because it draws attention to a largely overlooked group (history Lecturers) within the broader debate on artificial intelligence (AI) in Nigerian teacher education. By identifying the specific technical, pedagogical and ethical barriers they face, the study provides evidence that can shape targeted professional development programmes and curriculum reforms, ensuring that AI tools enhance rather than undermine the teaching of history. The result of this study will help colleges of education administration, history lecturers, policymakers, academic and non-academic staff, National Commission for Colleges of Education (NCCE), National Universities Commission (NUC), as a body to gain insight into the use of AI integration to teacher and make it a reference point for Proprietors of colleges of education and future researchers.

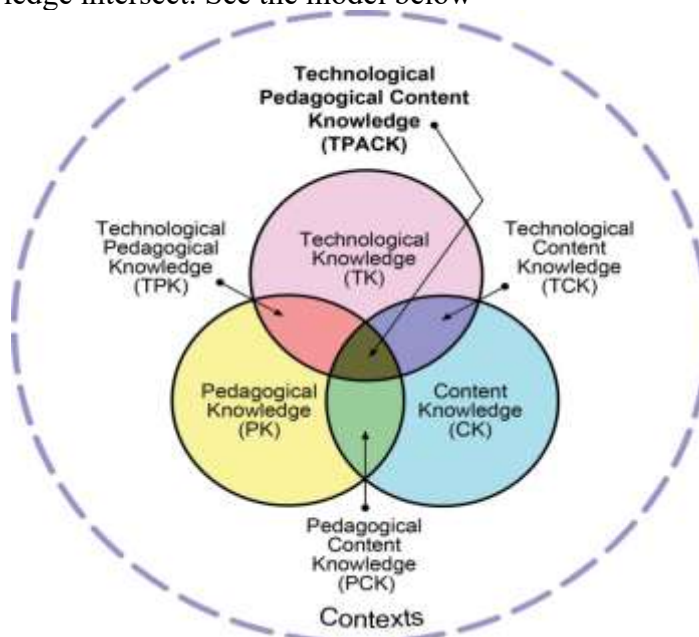
E. Scope of the Study

This study examined the challenges that History Lecturers faced when attempting to integrate Artificial Intelligence into the teaching of History within the two conventional Colleges of Education in Kwara state located in Ilorin and Oro and Lafiagi. However, Lafiagi is a technical Colleges of Education where History as a course is not offered, hence, this study is confined to Ilorin and Oro. The participants in this research are History and Social studies lecturers.

F. Theoretical Framework: Technological pedagogical content knowledge (TPACK) model

This is a theory that has been widely used in studies on the integration of technology in educational processes. It was developed to explain how teachers can effectively integrate technology into their classroom activities. TPACK was introduced in 2006 by Runya Mishra and Mathew J. Koehler. The Model Identifies three types of knowledge required of a teacher when planning to integrate technology into lessons. They are: Technological knowledge, pedagogical knowledge and content knowledge. In essence, TPACK model provides teachers with an approach to intentionally combine subject matter, instructional best practices and educational technology in planning lessons in order to maximize student learning.

The model is depicted as a Venn diagram which also represents the relationships that exist when these forms of knowledge intersect. See the model below



The relevance of TPACK model in this study is that the Artificial intelligence and knowledge of ICT are forms of technological knowledge introduced in succession to aid learning because as a trained teacher who has been equipped with the knowledge of subject matter and approaches to teaching and striving to attain maximum knowledge transfer, the integration of AI is a matter of necessity. Hence, this paper considers the adoption of TPACK theoretical framework.

II. Literature Review

The author is not unaware that studies have been carved out in artificial intelligence as a new revolution in human activities and its integration into pedagogy. Some of these studies highlight generic barriers such as poor infrastructure, low AI literacy, and vague educational policies but has not focus on how these generic barriers affect the teaching of History in Kwara state colleges of education. For instance, the work of Thomas et.al 2005 examined the current stage of AI adoption, and its potential to bridge the educational gaps, enhance accessibility and improve learning outcomes. It also identifies the challenges of its adoption to improve ethical concerns, digital inequality, job displacement and over-reliance on AI driven system.

The findings were not limited to the education sector but cover other areas of human endeavor. Another related study conducted by Murimo B.M, Yikash J. and kuburat O.A., 2024 focused on the lecturers' perception on the integration of Artificial Intelligence tools into teaching practice. The study revealed that the advent of AI was met with mixed feelings among lecturers. Some lecturers embraced AI and developed its usage while others resisted the change. The work is relevant to teaching professions, especially in the teacher training institutions because it is centered on teaching practice. However, it is restricted to the application of AI to teaching practice within the lens of lecturer's attitude and is unable to look at the challenges faced by the history teachers in the integration of AI to teaching history.

The work of Cecilia O. N., et al. is found to be related to this study. It examined the adoption of artificial intelligence in science teaching from vintage position of the African science teachers. It investigates the acceptability of science teachers in utilization of Technical Acceptance Model (TAM). The findings revealed that the percentage of teachers that approved its utilization was high and that teacher's residential location did not influence the behaviour of science teachers' intention of the utilization of AI. However, the findings may not be applicable in the humanities and that the study does not cover the theme of this study. The work on the relationship between the teacher's readiness and intentions to teach artificial intelligence in schools done by Kunle A., et.al (2022) shows that identifying teacher's lack of knowledge as a barrier to AI instructional facilitations is a step towards ensuring wide adoption in schools. Also, importantly is the understanding of teachers' readiness and their intentions towards AI curriculum which could be an essential factor in teaching AI. Despite the relevance of the work to this study, it was narrowed down to the teaching of AI as a subject not the integration of it to the teaching of history and the challenges it poses to the history teachers.

Esamesu E. E, et.al examined the intersection between Artificial Intelligence, interdisciplinary collaboration and Africa history. It has been established in the study the relevance of AI in the African historical research, thereby establishing that AI is emerging as a revolutionary trend in the field of historical writing and re-construction. In another vein, Sabo A. U, et.al carried out related research on the use of Artificial Intelligence in Nigeria. It is qualitative research that examined the challenges and way forward of using AI in teaching history in Nigeria across all levels of education in Nigeria. Also, the work found to be most related to this study was done by Edem U. It is centered on the challenges associated with the use if AI in history teaching in Bayelsa state. The work identifies the challenges by the teacher of secondary schools in using AI to include; infrastructural deficits, such as poor internet connectivity and in adequate power supply, limited access to digital learning tools, insufficient trainings for the history teachers, cultural challenges, historical misrepresentation, marginalization of indigenous historical narratives among others.

In view of this research cited above and others known to the author and with the concentration of this study in a single state out of 36 states of the federation as well as on the history as a subject, the study addresses gap existing in literature that focused on all teachers and STEM.

III. Methodology

The present study adopted descriptive research design. The population consisted of all the History and Social Studies Lecturers in the Kwara state colleges of educations in Ilorin and Oro. The population consisted of thirty-four (34) Lecturers which simple random sampling was used to select thirteen respondents in each college, totaling twenty-six (26) respondents.

A. Data Collection Technique

The instrument used for data collection was the questionnaire which contained 30 structured statement items relating to the research objectives and questions. The respondents were asked to tick any response represents their views about each statement item.

Sample selected from colleges of education in Kwara state.

S/N	Name of the College	Total No. of Respondents	No. of Respondents Sampled
1.	College of Education, Ilorin	18	13
2.	College of Education, Oro	16	13
	Total:	34	26

The research instrument was given to two experts in History department in other colleges of education outside Kwara State to peruse for content validity and other suggestions were considered. The test-retest reliability co-efficient was 0.83. The completed questionnaire forms were collected coded and subsequently, analysed using descriptive statistics of frequency counts and percentages.

IV. FINDINGS

Table 1: Presents the perception of Lecturers as regards instructional, pedagogical and technological barriers in AI integration to History teaching

Item	Description	SA	A	D	SD	Total
1	My institution lacks adequate digital infrastructural facilities	8(30.8%)	13(50.0%)	4(15.4%)	1(3.8%)	26
2	Internet connectivity on campus is unstable	5(19.2%)	12(46.2%)	9(34.6%)	0(0.0%)	26
3	I do not have access to sufficient computer systems	5(19.2%)	13(50.0%)	8(30.8%)	0(0.0%)	26
4	The cost of procuring AI-assisted teaching tools is too costly	6(23.1%)	10(38.5%)	9(34.6%)	1(3.8%)	26
5	The available AI tools are not compatible	5(19.2%)	9(34.6%)	11(42.3%)	1(3.8%)	26
6	I experience frequent technical glitches in the process of using AI tools	2(7.7%)	19(73.1%)	4(15.4%)	1(3.8%)	26
7	There is inadequate technical support for staff	6(23.1%)	16(61.5%)	4(15.4%)	0(0.0%)	26
8	My institution does not provide regular maintenance to the little available tools	6(23.1%)	11(42.3%)	8(30.8%)	1(3.8%)	26
9	Power supply challenges hinder my ability to use AI tools	11(42.3%)	10(38.5%)	5(19.2%)	0(0.0%)	26
10	Individual lack institutional access to licensed AI software	7(26.9%)	15(57.7%)	4(15.4%)	0(0.0%)	26

The table above shows that majority of the respondents agreed that pervasive infrastructural and technological barriers impede AI integration in History teaching. A substantial majority of respondents (8 SA/30.8%, 13 A/50.0%) agree that institutions lack adequate digital infrastructural facilities, compounded by unstable internet connectivity (5 SA/19.2%, 12 A/46.2%) and insufficient computer access (5 SA/19.2%, 13 A/50.0%). High procurement costs (6 SA/23.1%, 10 A/38.5%),

software-hardware incompatibility (5 SA/19.2%, 9 A/34.6%), frequent technical glitches (2 SA/7.7%, 19 A/73.1%), inadequate technical support (6 SA/23.1%, 16 A/61.5%), poor maintenance practices (6 SA/23.1%, 11 A/42.3%), power supply disruptions (11 SA/42.3%, 10 A/38.5%), and restricted access to premium AI software (7 SA/26.9%, 15 A/57.7%) collectively reveal fundamental institutional deficiencies requiring strategic investments in digital infrastructure and technical support.

Table 2: showed the extent of the Lecturer's Knowledge and Training

Item	Description	SA	A	D	SD	Total
11	I do not feel adequately trained to use AI tools...	5(19.2%)	18(69.2%)	2(7.7%)	1(3.8%)	26
12	AI-generated historical content often lacks contextual depth	6(23.1%)	11(42.3%)	8(30.8%)	1(3.8%)	26
13	Integrating AI into my lesson plans increases my workload	1(3.8%)	12(46.2%)	11(42.3%)	2(7.7%)	26
14	I find it difficult to align AI tools with learning objectives	2(7.7%)	6(23.1%)	17(65.4%)	1(3.8%)	26
15	AI tools do not adequately support critical thinking skills	7(26.9%)	12(46.2%)	7(26.9%)	0(0.0%)	26
16	Assessment methods are not designed for AI-assisted learning	4(15.4%)	15(57.7%)	7(26.9%)	0(0.0%)	26
17	Concerned about students becoming overly reliant on AI	12(46.2%)	11(42.3%)	3(11.5%)	0(0.0%)	26
18	Challenging to verify accuracy of AI-generated information	4(15.4%)	18(69.2%)	4(15.4%)	0(0.0%)	26
19	Lack confidence in designing AI-incorporated assignments	12(46.2%)	12(46.2%)	2(7.7%)	0(0.0%)	26
20	Absence of curriculum guidelines limits AI use	2(7.7%)	17(65.4%)	7(26.9%)	0(0.0%)	26
21	AI tools do not address historiographical debates	9(34.6%)	9(34.6%)	8(30.8%)	0(0.0%)	26
22	Unsure how to evaluate students' originality with AI	4(15.4%)	14(53.8%)	8(30.8%)	0(0.0%)	26

Table 2 above revealed that Lecturer's preparedness emerges as a critical bottleneck, with overwhelming agreement (5 SA/19.2%, 18 A/69.2%) that lecturers lack adequate training for effective AI use in History teaching. AI-generated content is frequently criticized for insufficient contextual depth (6 SA/23.1%, 11 A/42.3%) and increased workload demands (1 SA/3.8%, 12 A/46.2%), while alignment challenges with History learning objectives show majority disagreement (2 SA/7.7%, 6 A/23.1%, 17 D/65.4%). Significant concerns persist regarding critical thinking support (7 SA/26.9%, 12 A/46.2%), assessment adaptation (4 SA/15.4%, 15 A/57.7%), student overreliance (12 SA/46.2%, 11 A/42.3%), content verification difficulties (4 SA/15.4%, 18 A/69.2%), low assignment design confidence (12 SA/46.2%, 12 A/46.2%), absent curriculum guidelines (2 SA/7.7%, 17 A/65.4%), historiographical limitations (9 SA/34.6%, 9 A/34.6%), and originality evaluation uncertainty (4 SA/15.4%, 14 A/53.8%). Comprehensive professional development programs, discipline-specific pedagogical frameworks, and clear integration guidelines are essential to build teacher competence and confidence.

Table 3: Showing the level of solutions to identified challenges

Item	Description	SA	A	D	SD	Total
23	Regular AI training workshops should be organized for History lecturers	14 (53.8%)	9 (34.6%)	2 (7.7%)	1 (3.8%)	26
24	Government should provide adequate digital infrastructure (computers, devices) for AI integration	15 (57.7%)	8 (30.8%)	2 (7.7%)	1 (3.8%)	26
25	Stable internet connectivity should be provided to facilitate effective AI use in teaching	16 (61.5%)	7 (26.9%)	2 (7.7%)	1 (3.8%)	26

26	Regular electricity supply should be ensured to support AI technologies in institutions	17 (65.4%)	6 (23.1%)	2 (7.7%)	1 (3.8%)	26
27	Colleges should provide institutional access to licensed AI software for lecturers	15 (57.7%)	8 (30.8%)	2 (7.7%)	1 (3.8%)	26
28	Continuous professional development (CPD) on AI should be mandatory for lecturers	15 (57.7%)	8 (30.8%)	2 (7.7%)	1 (3.8%)	26
29	Technical support units should be established to assist lecturers in using AI tools	13 (50.0%)	10 (38.5%)	2 (7.7%)	1 (3.8%)	26
30	AI tools should be customized to reflect Nigerian and African historical perspectives	14 (53.8%)	9 (34.6%)	2 (7.7%)	1 (3.8%)	26

Table 3 above revealed overwhelming support for a range of solutions to the challenges confronting the effective integration of Artificial Intelligence in History teaching. A substantial majority of respondents agreed that regular AI training workshops should be organized for History lecturers (14 SA/53.8%, 9 A/34.6%), while continuous professional development programmes on AI were also strongly agreed (15 SA/57.7%, 8 A/30.8%), indicating that capacity building is perceived as a fundamental requirement for successful AI adoption. Respondents further emphasized the need for adequate digital infrastructure provision (15 SA/57.7%, 8 A/30.8%), stable internet connectivity (16 SA/61.5%, 7 A/26.9%), and reliable electricity supply (17 SA/65.4%, 6 A/23.1%), reflecting the critical importance of a supportive technological environment for AI-enabled teaching and learning. Strong support was also recorded for institutional access to licensed AI software (15 SA/57.7%, 8 A/30.8%) and the establishment of technical support units (13 SA/50.0%, 10 A/38.5%) to assist lecturers in overcoming operational and technical challenges associated with AI use. Furthermore, respondents advocated for the customization of AI tools to reflect Nigerian and African historical perspectives (14 SA/53.8%, 9 A/34.6%), highlighting the importance of contextual relevance, cultural sensitivity, and the preservation of indigenous historical knowledge. These findings suggest that effective AI integration in History education requires coordinated investments in infrastructure, professional training, technical support services, and the development of culturally responsive AI systems capable of addressing the unique needs of History teaching in Nigerian Colleges of Education.

V. Conclusion

The result revealed that integration of Artificial Intelligence into history teaching within Kwara State Colleges of Education suffered profound technological, pedagogical, infrastructural, and socio-cultural barriers which hinder its effective adoption. Survey findings indicate overwhelming agreement among history teachers on inadequate digital infrastructure (80.8% SA/A), unstable internet (65.4% SA/A), power disruptions (80.8% SA/A), and limited training (88.4% SA/A), compounded by concerns over AI's contextual limitations in historiography and ethical risks like narrative distortion (76.9% SA/A). Grounded in the TPACK framework, these challenges underscore the necessity for history educators to develop intersecting competencies in instructional, technological and pedagogy to teach History as a compulsory basic education subject amid Nigeria's recent curriculum reforms. Addressing these gaps promises enhanced student-centered learning, global teacher proficiency, and culturally attuned historical instruction that preserves indigenous narratives while leveraging AI's potential for content generation and critical inquiry.

VI. Recommendations

Institutions should prioritize investments in reliable power, internet, and licensed AI tools alongside regular workshops on TPACK aligned AI applications for history. Policymakers must develop curriculum guidelines and ethical frameworks to mitigate bias and overreliance, fostering teacher confidence through discipline-specific training. Future research could expand to other Nigerian states and humanities subjects for broader applicability.

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