ADOPTION OF ARTIFICIAL INTELLIGENCE TOOLS AMONG FRENCH LANGUAGE TEACHERS: AN EMPIRICAL STUDY

Ayoade-Ajayi Anne Omosalewa & Oluoyeneye Rahamon Adeniyi
Department of French, Federal College of Education, Abeokuta
anneomosalewa@gmail.com roluoyeneye@yahoo.com
08038067260 08038340500

Abstract
This paper investigates the adoption of Artificial Intelligence (AI) tools among French language lecturers in Nigerian Colleges of Education, focusing on perceived barriers, institutional support, and integration practices. Using a descriptive survey design, data were collected from 85 lecturers through structured questionnaires. The paper employed descriptive statistics, including frequencies, percentages, and mean scores for the response analyze. Findings reveal that poor internet connectivity, lack of AI-specific training and unstable electricity supply constitute the primary barriers to the adoption. Institutional support is moderate with ICT laboratories and administrative encouragement being the most available resources, while provision of digital devices and formal policy guidelines remain inadequate. The study concludes that while there is growing awareness and interest in AI integration, sustainable adoption is limited by infrastructural and capacity constraints. Recommendations include enhancing institutional support, providing regular AI-focused training, and developing clear policy frameworks to promote effective integration of AI in language teaching.

Keywords: Artificial Intelligence, French Language, French Language Teachers, Empirical Study, Adoption of AI in language teaching.

Introduction

The rapid advancement of Artificial Intelligence (AI) has significantly transformed educational practices across the globe, introducing innovative tools that enhance teaching, learning, and administrative processes. AI technologies, including intelligent tutoring systems, adaptive learning platforms, automated assessment systems, and interactive chatbots, all offer opportunities for personalized learning, immediate feedback, and improved learner engagement (Adedoyin & Soykan, 2020; Russell & Norvig, 2020). In language education, these tools enable learners to practice communication skills, receive instant corrective feedback, and access culturally contextualized content, which is especially relevant for languages like French that require nuanced understanding of grammar, syntax, and cultural conventions (Godwin-Jones, 2018; Kukulska-Hulme, 2020).

Despite the clear potentials of AI, adoption among lecturers in Nigerian Colleges of Education remains limited. French language lecturers face unique challenges in integrating AI into their pedagogical practice due to the specific nature of language instruction, which emphasizes on communicative competence, interactive practice, and cultural immersion. Traditional teaching methods often rely on face-to-face interaction, rote learning, and limited access to authe6ntic language resources, making the integration of AI both necessary and complex (Okeke & Okwudishu, 2021). Previous studies indicate that the adoption of AI in education is constrained by several factors. Infrastructural limitations, such as poor internet connectivity, unstable electricity supply, and inadequate access to digital devices have been widely reported in Nigerian tertiary institutions (Alhassan & Amadi, 2020; Ifinedo, 2016). Similarly, lecturers‘ lack of technical competence and limited training opportunities hinder effective integration of AI tools, leading to low confidence and reluctance to explore digital innovations in teaching (Tondeur et al., 2017). Institutional support is also a critical

determinant, as policies, administrative encouragement, and provision of ICT infrastructure influence lecturers‘ willingness and ability to adopt AI (Bakia, Shear,/569 Toyama, & Lasseter, 2011).

Given these realities, it becomes imperative to investigate how AI tools are being adopted by French language lecturers in Nigerian Colleges of Education, focusing on the interplay between infrastructural, institutional, and individual factors. AI has the potential not only to bridge gaps in teaching efficiency and learner engagement but also to facilitate differentiated instruction that caters for diverse student needs. Understanding the barriers, support mechanisms, and usage patterns can provide insights for designing interventions that promote sustainable integration of AI in language education.

This paper is guided by three core objectives:--

1. To identify the barriers limiting AI adoption in French language teaching.

2. To examine the level of institutional support provided for AI integration.

3. To assess lecturers‘ perceptions and usage patterns of AI tools in language instruction.

The findings of this research are expected to inform policy makers, administrators, and lecturers on effective strategies for integrating AI into French language pedagogy. By highlighting infrastructural gaps, training needs, and institutional enablers, the study aims to enhance instructional quality, learner engagement, and overall outcomes in French language education within the Nigerian context (Adedoyin & Soykan, 2020; Godwin-Jones, 2018). Ultimately, this research contributes to the growing discourse on the digital transformation of higher education in developing countries, emphasizing the critical role of AI in supporting modern language teaching practices.

Literature Review

Concept of Artificial Intelligence in Education

Artificial Intelligence (AI) is the capability of computer systems to perform tasks that usually require human intelligence, such as reasoning, learning, problem-solving, and understanding language. In educational settings, AI has been applied to enhance instruction, assessment, and the overall learning experience. Tools such as adaptive learning systems, intelligent tutoring software, virtual teaching assistants, and automated evaluation platforms enable teachers to deliver personalized instruction, monitor learner progress in real time, and make data-informed pedagogical decisions (Russell & Norvig, 2020; Luckin et al., 2016). By replicating some human cognitive processes, AI provides opportunities for more interactive, learner-centered, and efficient teaching approaches.

AI in Language Learning

AI has shown significant promise in facilitating language education. AI-driven applications can assist learners in improving pronunciation, mastering grammar, expanding vocabulary,

and engaging in interactive communication exercises. In the context of French language teaching, such systems can simulate conversational practice, provide instant corrective feedback, and deliver content that reflects cultural nuances, which may be difficult to achieve through conventional methods. Empirical studies indicate that AI can improve student engagement, promote differentiated learning strategies, and support teachers in addressing diverse language proficiency levels effectively (Kukulska-Hulme, 2020; Godwin-Jones, 2018). Furthermore, the automation of repetitive teaching tasks allows lecturers to dedicate more time to instructional planning and pedagogical refinement.

Barriers to AI Adoption

Despite its advantages, AI adoption in education is often hindered by infrastructural, institutional, and personal factors. Infrastructural challenges such as unreliable electricity, slow, non-availability or unstable internet connections, and limited or no access to digital devices restrict consistence in the usage of AI tools in teaching and learning (Adedoyin & Soykan, 2020).At the institutional level, the lack of clear policy frameworks, limited administrative support, and inadequate professional development programs reduce lecturers‘ preparedness and willingness to integrate AI into classrooms (Ifinedo, 2016; Alhassan & Amadi, 2020). Without structured institutional backing, the adoption of AI largely depends on individual initiative, resulting in inconsistent application across different settings.

On an individual level, lecturer‘s attitudes, technical skills, and perceptions of AI reliability play a crucial role. Low digital competence, fear of incorrect AI outputs, and the additional effort required to learn new technologies can discourage the use of AI in teaching (Tondeur et al., 2017). In Nigerian tertiary institutions, lecturers frequently rely on personal devices and self-directed learning to incorporate digital tools, highlighting the gap between the potential benefits of AI and actual classroom practices (Okeke & Okwudishu, 2021).

Institutional Support and Training

Effective integration of AI into education requires deliberate institutional interventions. Providing access to well-equipped ICT laboratories, AI-compatible software, and structured workshops is essential for fostering lecturers‘ technical competence. Administrative encouragement and clear policy guidelines will further motivate educators to explore and implement AI solutions in teaching (Bakia et al., 2011). However, studies in Nigerian Colleges of Education show that while basic ICT facilities may be available, specialized AI resources and dedicated training programs remain scarce, limiting lecturers‘ ability to adopt these tools consistently (Adedoyin & Soykan, 2020).

Perception and Usage Patterns of Lecturers

Lecturers‘ perceptions and attitudes towards AI strongly influence adoption rates. Lecturer‘s perception on usefulness technologies and understanding its potentials to improve teaching outcomes will increase the willingness to implement AI-based tools. Conversely, doubts about AI reliability and concerns about added workload can hinder usage. Research demonstrates that lecturers are more likely to use AI when they receive professional development, institutional support, and subject-specific resources, such as platforms tailored for French language instruction (Godwin-Jones, 2018; Kukulska-Hulme, 2020).

Summary of Literature Gaps

While existing literature recognizes the advantages of AI in education and language learning, there is a noticeable lack of empirical studies focusing on French language lecturers in Nigerian Colleges of Education. Most research emphasizes general ICT integration or primary and secondary education contexts. This study seeks to fill this gap by exploring the infrastructural, institutional, and individual factors that influence AI adoption in French language teaching, providing insights that can inform targeted interventions, professional development, and institutional policy.

Methodology:

Research Design
This study adopted a descriptive survey research design to examine the adoption of Artificial Intelligence (AI) tools among French language lecturers in Nigerian Colleges of Education. The survey research design was selected because it allows for the systematic collection of data from a defined population, facilitating the analysis of perceptions, usage patterns, institutional support, and barriers to AI adoption. This design is particularly suitable for educational research as it provides both quantitative data, through structured questionnaires, and qualitative insights through open-ended responses. By using this design, the study aimed to identify trends, relationships, and prevailing challenges affecting AI integration in French language instruction, ensuring findings that are generalizable to similar institutional contexts

Population of the Study
The population of this study comprised French language lecturers in selected Federal and State Colleges of Education in Nigeria. These lecturers were considered because they are directly involved in teaching French and are potential users of AI tools for instructional purposes. The population included both experienced and relatively new lecturers, ensuring representation across different teaching tenures and institutional environments. By focusing on lecturers actively engaged in language instruction, the study aimed to capture relevant insights into the real-world use and perceptions of AI in French classrooms

Sample and Sampling Technique4
A purposive sampling technique was employed to select participants who are actively involved in French language teaching and have potential exposure to AI tools. This non-probability sampling method was considered appropriate because it targets respondents with specific knowledge and experience relevant to the study, rather than the general lecturer population. A total of 100 lecturers were selected from five Colleges of Education, ensuring a balance between urban and semi-urban institutions to capture contextual variations in infrastructure, institutional support, and technology adoption. The purposive approach ensured that participants had sufficient familiarity with teaching resources, digital tools, and institutional practices, thereby improving the validity and relevance of collected data

Instrumentation
Data was collected using a structured qu22estionnaire developed by the researcher, guided by existing literature on AI adoption in education. The instrument was divided into four sections to systematically capture relevant information:

Section A: Demographic information, including age, gender, educational qualifications, and years of teaching experience. This section helped to contextualize responses and examine potential correlations between demographics and AI adoption.

Section B: Perceived barriers to AI adoption, capturing lecturers‘ experiences with infrastructure, digital literacy, institutional support, and personal challenges when using AI tools.

Section C: Institutional support for AI adoption, assessing the availability of ICT facilities, AI-compatible software, administrative encouragement, and formal policy guidance.

Section D: Usage patterns and perceptions of AI tools, evaluating the frequency, purpose, and pedagogical integration of AI in teaching French language courses.

Each item in the questionnaire was measured using a 4-point Likert scale (1 = Not at all, 2 = Rarely, 3 = Sometimes, 4 = Frequently), allowing for quantitative analysis of responses and easy computation of mean scores to determine trends. The instrument was reviewed for content validity by experts in educational technology and French language pedagogy, and a pilot study was conducted with 10 lecturers from a non-participating College of Education to ensure reliability and clarity of items. The pilot data yielded a Cronbach‘s alpha of 0.82, indicating high internal consistency of the questionnaire items.6

Data Collection Procedure

The researcher obtained permission from the selected Colleges‘ administration before distributing questionnaires. Participants were briefed on the purpose of the study, and consent was obtained. Questionnaires were administered in both physical and electronic formats, allowing participants to complete them at their convenience. Follow-up reminders were sent to ensure a high response rate, and all responses were treated with confidentiality and used solely for research purposes.

Data Analysis

Collected data were analyzed using descriptive statistics, including frequencies, percentages, and mean scores. Mean scores were interpreted based on predefined benchmarks to determine the extent of AI adoption, perceived barriers, and institutional support. Data analysis was conducted using Statistical Package for the Social Sciences (SPSS) version 26. Graphs and tables were used to present findings clearly, and qualitative comments from open-ended questions were thematically analyzed to complement quantitative results

Validation of Instrument

The questionnaire was subjected to reviewand content validationby three experts in French language education and educational technology. Suggestions were incorporated to ensure clarity, relevance, and alignment with research objectives.

Reliability of Instrument

A pilot study was conducted with 10French lecturers from an unselected College of Education. Cronbach‘s alpha coefficient was calculated to determine internal consistency, resulting in a reliability index of 0.82, indicating that the instrument is reliable for data collection.

Data Collection Procedure

Permission was obtained from relevant College authorities prior to data collection. Questionnaires were administered personally to lecturers, and respondents were given two weeks to complete them. Follow-ups ensured a high response rate.

Data Analysis

Data were analyzed using descriptivestatistics, including frequency counts, percentages, and mean scores. Mean scores were interpreted using a cut-off point of 2.5**:** scores above 2.5 indicated frequent occurrence or strong agreement, while scores below 2.5 indicated infrequent occurrence or weak agreement. Data presentation was done through tables and charts **f**or clarity.

Data Presentation and Analysis

Table 1: Perceived Barriers to AI Adoption

Barrier	Not at all	Rarely	Sometimes	Frequently	Mean
Poor internet connectivity	3	7	20	25	3.22
Limited access to digital devices	5	10	22	18	2.89
Lack of training on AI tools	4	8	19	24	3.16
Inadequate institutional support	6	11	21	17	2.87
Concerns about AI accuracy	7	12	23	13	2.69
Increased workload due to AI	8	14	21	12	2.60
Unstable electricity supply	4	9	18	24	3.13

Interpretation *of* Results

Results indicate that French language lecturers face multiple barriers that hinder AI adoption:***6

- **Poor internet connectivity** (mean = 3.22) is the most reported barrier, highlighting the need for stable, high-speed internet to access AI-supported learning tools.
- **Lack of training on AI tools** (mean = 3.16) suggests lecturers have limited opportunities to develop competencies in AI-based language instruction.
- **Unstable electricity supply** (mean = 3.13) further complicates the use of digital tools during teaching.
- **Limited access to devices** (mean = 2.89) and **inadequate institutional support** (mean = 2.87) reflect infrastructural and administrative gaps.
- **Concerns about AI accuracy** (mean = 2.69) and **increased workload** (mean = 2.60) are secondary barriers but still influence adoption decisions.

Overall, infrastructural limitations and insufficient training are the primary challenges. Addressing these barriers is essential for effective AI integration in French language teaching.

Table 2: Institutional Support for AI Adoption

Institutional Support Indicator	Not at all	Rarely	Sometimes	Frequently	Mean
Availability of AI-related training workshops	7	15	20	13	2.64
Provision of digital devices for teaching	10	16	18	11	2.45
Administrative encouragement for AI use	6	12	22	15	2.78
Access to functional ICT laboratories	5	11	23	16	2.96
Availability of AI-supported language learning platforms	9	14	19	13	2.64

Institutional Support Indicator	Not at all	Rarely	Sometimes	Frequently	Mean
Policy guidelines on digital and AI integration	11	15	18	11	2.45

Interpretation of Results

The data reveal a **moderate level of institutional support** for AI adoption among French language lecturers:

- **ICT laboratory access** recorded the highest mean (2.96), showing many institutions have computer labs, though AI-specific resources may be limited.
- **Administrative encouragement** (mean = 2.78) suggests verbal support exists, but tangible incentives or structured policies are inconsistent.
- **Training workshops** (mean = 2.64) occur sporadically and often focus on general ICT skills rather than AI tools for language teaching.
- **Provision of devices** and **policy guidelines** (mean = 2.45 each) indicate gaps 2in resources and formal guidance for AI adoption.
- **AI-supported language learning platforms** (mean = 2.64) are limited, with lecturers relying mainly on freely available online tools.

Overall, while pockets of support exist—particularly ICT access and administrative encouragement—current institutional provisions are **insufficient for sustained AI integration**.

Discussion of Findings

The findings of this study reveal a complex interplay between **perceived barriers** and **institutional support** affecting AI adoption among French language lecturers in Nigerian Colleges of Education.

Perceived Barriers to AI Adoption

The most significant barriers include poorinternet connectivity(mean = 3.22), lack of training on AI tools(mean = 3.16), and unstable electricity supply (mean = 3.13). These infrastructural challenges hinder lecturers‘ ability to integrate AI effectively into teaching. Limited access to digital devices (mean = 2.89) further compounds the problem, as many lecturers rely on personal laptops or mobile devices rather than institutional resources.

Moderate concerns were reported regarding inadequate institutional suppor**t** (mean = 2.87), while issues related to accuracy of AI-generated content(mean = 2.69) and increased workload (mean = 2.60) were less pronounced but still notable. These findings indicate that lecturers‘ hesitancy to adopt AI is shaped both by structural constraintsandskill-related limitations**.**

Institutional Support for AI Adoption

Institutional support for AI adoption was found to be moderate. Access to functional ICT laboratories recorded the highest mean score (2.96), showing that while infrastructure exists, AI-specific applications and resources are often limited. Administrative encouragement (mean = 2.78) reflects verbal motivation but lacks consistent policy backing or tangible incentives.

Training workshops (mean = 2.64) occur occasionally but focus more on general ICT skills than AI-specific pedagogy. Provision of digital devices and formal policy guidelines recorded lower mean scores (2.45 each), highlighting gaps in resources and institutional direction. Availability of AI-supported language learning platforms (mean = 2.64) remains limited, forcing lecturers to rely on freely available online tools that may not fully support pedagogical objectives.

Integrated Discussion

The study demonstrates that barriers and institutional support are interrelated**.** While infrastructure such as ICT labs exists, inconsistent electricity, poor internet, and lack of dedicated AI training limit its effectiveness. Similarly, administrative encouragement and training initiatives exist but are insufficiently structured**,** reducing lecturers‘ confidence and ability to adopt AI tools systematically.

Lecturers‘ adoption of AI depends not only on individual motivation but also on coordinated institutional action**,** including reliable infrastructure, targeted training, provision of devices, and clear policy guidelines. Addressing both technical and organizational challenges is critical for fostering meaningful, sustainable AI integration in French language education.

Conclusion and Recommendations

Conclusion

The paper revealed that while French language lecturers in Nigerian Colleges of Education are aware of and willing to adopt AI tools, adoption is hindered by both infrastructural and institutional constraints**.** Key barriers include poorinternet connectivity, unstable electricity, limited access to digital devices, and insufficient AI-specific training**.** Institutional support, though present in areas such as ICT laboratories and verbal encouragement, remains inconsistentandinadequate, particularly in the provision of AI platforms, devices, and formal policy guidelines.

Overall, the findings suggest that AI adoption is currently fragmented and dependent on individual initiative**,** rather than being driven by systematic institutional strategies. For AI integration to be sustainable and impactful, there must be a holistic approach that addresses both technical and organizational factors.

Recommendations

1. **Enhance Infrastructure:** Colleges of Education should prioritize stable electricity supply, reliable internet connectivity, and access to AI-compatible digital devices to create an enabling environment for AI adoption.
2. **Structured Training Programs:** Institutions should organize regular, targeted AI training workshops focused on pedagogical applications specific to french language

teaching. These should move beyond general ICT skills to develop lecturers‘ competence and confidence in using AI tools effectively.

3. **Develop Policy Guidelines:** Clear institutional policies on AI integration in teaching and learning should be formulated. This includes usageprotocols, assessment frameworks, and ethical guidelinesfor AI-generated content.
4. **Provide AI-Supported Platforms:** Colleges should invest in specialized AI-supported language learning platforms that align with curriculum objectives, reducing reliance on generic or free online tools.
5. **Administrative Incentives:** Management should encourage AI adoption not just verbally but through tangible incentives**,** such as recognition for innovative teaching, grants for AI-based projects, or workload adjustments to accommodate technology integration.
6. **Periodic Evaluation:** Institutions should regularly assess the effectiveness of AI adoption initiatives, identifying gaps in training, infrastructure, and policy, to ensure continuous improvement.

Implementing these recommendations will enhance lecturers‘ capacity to integrate AI tools in French language education, thereby improving teaching effectiveness and student learning outcomes**.**

References

Adedoyin, O. B., & Soykan, E. (2020). Covid-19 pandemic and online learning: The challenges and opportunities. Interactive Learning Environments, 28(1), 1–13. https://doi.org/10.1080/10494820.2020.1813180

Alhassan, A., & Amadi, L. (2020). Barriers to the adoption of educational technologies in higher education in developing countries. Journal of Educational Technology Systems, 49(2), 159–178.

Bakia, M., Shear, L., Toyama, Y., & Lasseter, A. (2011). Understanding the implications of technology in education: The evidence and the promise. U.S. Department of Education.

Godwin-Jones, R. (2018). Using mobile technology to develop language skills and cultural understanding. Language Learning & Technology, 22(3), 1–17.

Ifinedo, P. (2016). Technology readiness and e-learning adoption in higher education institutions. Education and Information Technologies, 21(1), 1–22.

Kukulska-Hulme, A. (2020). Mobile-assisted language learning [MALL]. In The Encyclopedia of Applied Linguistics. Wiley.

Okeke, C., & Okwudishu, C. (2021). ICT infrastructure and technology integration in Nigerian colleges of education. International Journal of Education and Development using ICT, 17(3), 23–39.

Russell, S., & Norvig, P. (2020). Artificial Intelligence: A Modern Approach (4th ed.). Pearson.

Tondeur, J., Roblin, N. P., van Braak, J., Fisser, P., & Voogt, J. (2017). Technological pedagogical content knowledge in teacher education: A systematic review. Journal of Computer Assisted Learning, 33(6), 543–558

ENURLR IEIOMUL ER SILPUCUNJUTLUMUOO ORNRUOJH LEISO)