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An Appraisal of Artificial Intelligence Tools Utilization in Teaching and Learning of French Language in Nigerian Tertiary Institutions

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ABSTRACT

This study examines the utilization of Artificial Intelligence (AI) tools in French language teaching across Nigerian tertiary institutions, focusing on their impact on students' speaking skills and identifying key constraints to effective implementation. Using a mixed-methods approach, data were collected from 200 French language students and 10 lecturers across five institutions in Southwest Nigeria through structured questionnaires. Results revealed moderate to high engagement with AI tools, with 43% of students using them weekly and 22% daily. Popular tools included Duolingo (42%), Google Translate (34%), and Babbel (28%). While students reported significant improvements in vocabulary acquisition (73%), listening comprehension (67%), and pronunciation (61%), gains in speaking fluency (40%) and writing skills (29%) were limited. Correlation analysis showed no significant relationship between AI tool usage and oral proficiency (Pearson's r = 0.07, p = 0.24), supporting the hypothesis that current AI tools do not substantially enhance speaking skills. Key challenges included inadequate feedback (42%), limited advanced content (35%), technical issues (31%), and lack of human interaction (20%). Despite these limitations, 74% of students perceived AI tools as effective for learning French, citing benefits such as personalized learning (58%) and improved efficiency (61%). The study highlights a critical gap in AI's ability to replicate authentic conversational practice and nuanced feedback, which are essential for advanced language acquisition. Recommendations include better curricular integration of AI tools, development of advanced interactive platforms (e.g., virtual tutors), and infrastructure improvements to address technical barriers. These findings underscore the need for a hybrid pedagogical model that combines AI's scalability with human instruction to optimize French language learning outcomes in resource-constrained contexts.

Keywords: Artificial Intelligence, French language teaching, speaking skills, Nigerian tertiary institutions, educational technology, language acquisition.

Introduction

The teaching and learning of French in Nigerian tertiary education face numerous challenges that have constrained the effective acquisition of this critical foreign language. French, as a major language in West Africa and a key diplomatic and economic tool for Nigeria, is increasingly important for academic, professional, and intercultural engagement (Iwelu & Ezeani, 2023). However, traditional pedagogical approaches in Nigerian universities often suffer from inadequate instructional resources, limited teacher training, large class sizes, and infrastructural deficiencies such as poor internet connectivity and lack of modern educational technologies (Fajemisin, 2022). These challenges limit students' opportunities for authentic language practice and personalized learning, resulting in suboptimal proficiency levels, especially in oral communication and cultural competence (Akinyemi, 2019). In this context, Artificial Intelligence (AI) offers promising solutions to revolutionize French language teaching and learning by addressing many of these systemic limitations. AI technologies encompass natural language processing, machine learning, intelligent tutoring systems, speech recognition, and conversational agents that simulate human-like interactions and provide adaptive, personalized learning experiences (Shukla and Vijay, 2013; Osawaru & Unachukwu, 2024). These tools enable learners to receive immediate feedback, practice pronunciation, engage in immersive cultural simulations, and progress at individualized paces, which traditional classroom settings often cannot facilitate due to resource constraints (Eze, 2014: Pan, 2016). The integration of AI aligns with contemporary language pedagogy that emphasizes learner autonomy, communicative competence, and intercultural literacy, all essential for preparing Nigerian students for global citizenship and regional cooperation. Globally, AI-powered language learning platforms such as Duolingo, Babbel, and AI chatbots have demonstrated effectiveness in enhancing vocabulary acquisition, listening comprehension, pronunciation, and learner motivation through gamification and adaptive content delivery (Blaz, 2022; Xiao, Zhang, & He, 2024). These platforms leverage algorithms to tailor content to individual proficiency levels, providing dynamic and engaging learning environments. Speech recognition technologies facilitate real-time pronunciation correction, while conversational AI offers low-pressure environments for practicing oral skills. Additionally, AI can automate assessment and feedback, enabling educators to identify learner strengths and weaknesses efficiently and design targeted interventions (Ahmad et al., 2021). Such innovations are particularly valuable in Nigeria, where access to native French speakers and authentic language environments is limited. Despite these advantages, the adoption and utilization of AI tools in Nigerian tertiary institutions remain limited due to infrastructural constraints, lack of locally adapted AI applications, and insufficient teacher training (Osawaru & Unachukwu, 2024; Madonna University, 2025). Poor internet connectivity, limited access to AI-compatible devices, and inadequate institutional investment hinder widespread implementation. Moreover, many AI tools are designed without consideration of Nigerian learners' linguistic and cultural contexts, reducing their relevance and effectiveness (Fajemisin,

2022). Educators often lack the skills and confidence to integrate AI into their teaching, resulting in underutilization or ineffective use of available technologies (Osawaru & Unachukwu, 2024). These barriers highlight the need for a comprehensive appraisal of AI utilization to identify gaps, challenges, and opportunities for optimizing its role in French language education. This research sets out to identify the level of AI utilization in French language learning in the Nigerian tertiary education system highlighting the problems and prospects with a view to suggesting areas of improvement for effective French language learning.

Objective of The Study

1. To determine the extent of artificial intelligence utilization in French language teaching in Nigerian tertiary institutions

2. To determine the effect of artificial intelligence tools utilization on speaking skills of French language students

3. To identify the constraints to effective utilization of AI tools for French language learning in Nigerian tertiary institutions.

4. To identify ways of improving the quality of teaching French language in Nigeria tertiary institutions using AI tools.

Research Hypothesis

There is no significant relationship between artificial intelligence tools utilization and speaking skills of French language students

Methodology

This research utilized a purposive sampling technique to randomly select 50 postgraduate students, 100 undergraduates and 50 NCE students as well as 10 lecturers from 5 tertiary institutions within southwest Nigeria. This gave a total sample of 200 French language students and 10 teachers/lecturers used for this study.

The instrument used for data collection is a well structured questionnaire. The first part (Section A) of the questionnaire contains questions about gender, academic level and course combination. Section B focus on to the types of AI instructional tools used by both students and lecturers of French language in their schools and also frequency of use where available. This has five response levels as follows: Never; less than one per month; at least once per month; at least once per week, and daily. Section C of the questionnaire contains items to establish the correlation between the consistent use of AI tools and improvement in speaking skill by French language students. The section also contains factors/variables that influence the use of these AI tools technology by French language students.

Data analysis

Data obtained from the respondents was analyzed using frequency count and simple percentages. Correlation analysis was used to determine the relationships between speaking skills and utilization of AI tools.

Results and Discussion

Table 1: Frequency of AI Tool Usage for Learning French

Frequency of Use	Percentage of Students Reporting Usage
Daily	22%
Weekly	43%
Occasionally (1-2 times/month)	20%
Never	15%

As shown in Table 1, most students use AI tools for learning French either weekly (43%) or daily (22%), indicating a moderate to high level of engagement. However, 15% never use these tools, highlighting a segment of the student population that may lack access, awareness, or motivation to use AI for language learning. The occasional users (20%) suggest that while AI tools are accessible, consistent integration into daily study routines is lacking. This pattern points to the need for better curricular integration and awareness campaigns to increase regular AI tool usage among all students.

Table 2: Types of AI Tools Used by Students for Learning French

AI Tool	Percentage of Students Using It
Duolingo	42%
Babbel	28%
Google Translate	34%
AI-based chatbots for practice	21%
Speech recognition software	10%

Table 2 presents the types of AI tools used by students for learning French. Duolingo stands out as the most popular AI tool (42%), likely due to its gamified and user-friendly approach. Google Translate (34%) is also widely used, primarily for translation rather than structured learning. Babbel (28%), chatbots (21%), and speech recognition software (10%) have lower adoption rates, possibly due to limited awareness, technical barriers, or less curricular emphasis. This distribution suggests that while students gravitate towards familiar and easy-to-use platforms, more advanced or interactive AI tools are underutilized, reflecting a need for better promotion and integration of these resources.

Table 3: Areas of Improvement in French Language Due to AI Usage

Language Skill	Percentage of Students Reporting Improvement
Vocabulary acquisition	73%
Listening comprehension	67%
Pronunciation	61%
Grammar understanding	50%
Speaking fluency	40%
Writing skills	29%

As displayed in Table 3, students report the greatest gains in vocabulary acquisition (73%), listening comprehension (67%), and pronunciation (61%), which aligns with the strengths of AI tools in providing repetitive, personalized practice in these areas. Improvements in grammar (50%), speaking fluency (40%), and writing (29%) are less pronounced, indicating that current AI tools may be less effective for higher-order language skills that require nuanced feedback and real-time interaction. This highlights the limitations of AI in replicating the depth of human instruction, particularly for productive skills like speaking and writing.

Table 4: Student Perception of AI's Effectiveness in Learning French

Perception	Percentage of Students Reporting Positive Experience
AI tools are effective for learning French	74%
AI tools help improve learning speed/efficiency	61%
AI tools provide personalized learning	58%
AI tools not useful for speaking practice	30%
AI tools are too impersonal	22%

Responses displayed in Table 4 reveals that a strong majority (74%) perceive AI tools as effective, with 61% noting improvements in learning speed and 58% appreciating personalization. However, 30% find AI tools lacking for speaking practice, and 22% feel the tools are too impersonal. These findings reinforce the idea that while AI excels at scalable, individualized instruction, it struggles to provide the authentic, interactive experiences critical for language mastery, particularly in speaking and cultural nuance.

Table 5: Challenges Students Face with AI Tools in Learning French

Challenge	Percentage of Students Reporting Difficulty
Inadequate feedback from AI systems	42%
Limited content for advanced learners	35%
Technical issues (internet, software)	31%
Difficulty using AI tools effectively	24%
Lack of human interaction with native speakers	20%

Table 5 above presents the challenges students face with ai tools in learning French. The most significant challenge is inadequate feedback (42%), highlighting a key limitation of current AI systems in providing detailed, personalized responses. A substantial number of students (33%) also report insufficient content for advanced learners, suggesting that AI platforms may cater more to beginners. Technical issues (31%), usability challenges (24%), and lack of human interaction (20%) further compound the barriers to effective AI-assisted language learning. These challenges point to the need for more robust AI platforms, improved infrastructure, and hybrid models that combine AI with human-led instruction.

Table 6: Pearson Correlation Analysis to Test the Hypothesis: AI Utilization vs. Speaking Skills

Relationship	Pearson's r	p-value
Frequency of AI tool use vs Oral proficiency	0.07	0.24
AI speech practice hours vs Pronunciation accuracy	0.12	0.08

The correlations between AI tool usage and students' oral proficiency or pronunciation accuracy are weak and statistically insignificant ($p > 0.05$). This means that, in this sample, increased AI usage does not translate into measurable improvements in speaking skills

Discussion of findings

The study found that AI adoption in French language teaching is at a nascent stage across Nigerian tertiary institutions. The significant improvements in vocabulary, listening, and pronunciation are indicative of the strengths of AI in providing immediate, repeated exposure to language patterns and practice through exercises. The lower improvements in writing skills and speaking fluency suggest that AI tools, while helpful, may not fully replicate the benefits of human interaction and feedback, especially in more complex aspects of language learning such as fluency and advanced grammar. The challenge remains in how AI can bridge these gaps and create more dynamic, interactive environments for practicing speaking and writing. In terms of usage patterns my findings proved that most students engage with AI tools at least weekly, but a notable minority remain unengaged, underscoring the need for broader access and curricular integration. Furthermore, students prefer familiar, gamified platforms (Duolingo), while more advanced tools like speech recognition software see limited use.

Conclusion

It was also observed that AI tools are most effective for receptive skills (vocabulary, listening, pronunciation), but less so for productive skills (speaking, writing). However, no significant correlations was observed between AI tool usage and students' oral proficiency or pronunciation accuracy. Though most students view AI positively, significant concerns remain about the lack of personalized feedback and authentic interaction. Feedback quality, content depth, technical barriers, and the absence of human interaction are the main obstacles to maximizing AI's impact on language learning. To fully realize the benefits of AI in French language education, institutions need to address the following:

1. Improve the integration of AI tools into the curriculum, ensuring that both students and educators are fully trained and equipped to use them.

2. Focus on expanding the range of content available on AI platforms to cater to advanced learners.

3. Address technical challenges and infrastructure deficit especially in institutions with unreliable internet and equipment.

4. Develop more advanced AI tools that foster greater interaction, such as virtual language tutors, to better support speaking fluency and writing skills.

References

Ahmad, S. F., Rahmat, M. K., Mubarik, M. S., Alam, M. M., & Hyder, S. I. (2021). Artificial intelligence and its role in education. *Sustainability*, *13*(22), 12902.

Eze, P. I. (2014). Using Instructional Media For Effective Teaching Practice In Nigerian Schools. *Journal of Teacher Perspective*, *8*(2).

Pan, Y. (2016). Heading toward artificial intelligence 2.0. *Engineering*, *2*(4), 409-413.

Shukla Shubhendu, S., & Vijay, J. (2013). Applicability of artificial intelligence in different fields of life. *International Journal of Scientific Engineering and Research*, *1*(1), 28-35.

Yahya, R., & Wood, E. A. (2017). Play as third space between home and school: Bridging cultural discourses. *Journal of Early Childhood Research*, *15*(3), 305-322.

Nwachukwu, C., & Uzokife, G. C. (2022). Effective Classroom Management Practices among Public Senior Secondary School Teachers in Anambra State.

Akinyemi, T. (2019). Challenges in French language learning in Nigeria. *International Journal of Language Studies*, 13(2), 45-60.

Blaz, J. (2022). The role of AI in language learning: Adaptive technologies and learner engagement. *Journal of Educational Technology*, 18(4), 112-130.

Fajemisin, O. (2022). French language teaching in the 21st century: Challenges and prospects in Nigeria. *Federal University Journal of Education Management*, 7(1), 20-35.

Iwelu, C. H. F., & Ezeani, E. O. (2023). Enhancing the teaching of French language in primary schools. *Journal of Language and Literature Education*, 9(1), 75-89.

Madonna University. (2025). Leveraging Artificial Intelligence (AI) for advancing the learning of French language in Nigeria. *Madonna Journal of English Language Studies*. Retrieved from https://madonnauniversity.edu.ng/journals/index.php/MAJELS/article/view/251

Osawaru, O. O., & Unachukwu, C. C. (2024). Leveraging technology and artificial intelligence to revolutionize French language proficiency: A comprehensive framework for modern curriculum design. *International Journal of Applied Research in Social Sciences*, 6(12), 2903-2915. https://fepbl.com/index.php/ijarss/article/view/1767/2023

Xiao, Y., Zhang, L., & He, W. (2024). Virtual reality and AI in immersive language learning: A systematic review. *Language Learning & Technology*, 28(1), 45-62.