Adapting Artificial Intelligence Tools to Enhance Oral Communicative Competence in French Language Education in Nigeria

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ABSTRACT

This study examined the adaptation of Artificial Intelligence (AI) tools to enhance oral communicative competence in French language education across polytechnics in South West Nigeria. A descriptive survey research design was employed, and data were collected from 246 students enrolled in French programs through a structured questionnaire administered via Google Forms. The instrument focused on factors such as pronunciation, fluency, listening comprehension, accessibility, and students' attitudes toward AI. Descriptive statistics were used to summarize responses, while inferential statistics, including Pearson correlation and regression analysis, were employed to test relationships and predictive effects. Findings revealed that AI tools had a strong positive influence on oral communication skills, with significant correlations between AI usage and students' competence, and regression results indicating that AI applications significantly predicted improvements in pronunciation, fluency, and listening comprehension. The study concludes that AI provides an effective and practical complement to traditional teaching strategies by addressing learning barriers and fostering communicative competence. It recommends the integration of AI-driven resources into French curricula, investment in digital infrastructure, and training for lecturers to maximize instructional benefits. These findings highlight the transformative role of AI in language education and provide a pathway for improving foreign language instruction in Nigeria.

Keywords: artificial intelligence, communicative, competence, french language, education,

Introduction

Nigeria's multilingual landscape and its strategic position within the Economic Community of West African States (ECOWAS) make French a high-value language for education, mobility, and regional cooperation. National policy explicitly elevates French: The National Policy on Education states that "French shall be the second official language in Nigeria" and that it is compulsory at primary and junior secondary levels; at junior secondary, French is listed among the core subjects (Group A). These policy commitments are echoed in curriculum infrastructure, with the Nigerian Educational Research and Development Council (NERDC) providing a dedicated French curriculum for JSS 1–3. At the regional level, ECOWAS itself operates officially in English, French, and Portuguese, underscoring the practical value of French for Nigerians in government, business, health, and security cooperation.

Nonetheless, despite a good policy reason, oral communicative competence in French has always been a problematic issue in most Nigerian classrooms. Research on French education in Nigeria (and other similar Anglophone West African systems) supports these findings, citing persistent use of teacher directed, grammar translation pedagogy, inadequate speaking activities and skewed distribution of communicative activities (which undermine the long-term fluency, interactivity skills and pronunciation of the learners). The pedagogical and practical stakes are that communicative competence and conversational exchange and production arouses interest in the Common European Framework of

Reference (CEFR), the level descriptors (A1-C2) similarly raising the question of what learners can actually do in real exchanges.

The Nigerian schooling context also shapes what is feasible. Connectivity and power constraints can limit access to rich, speech-centric digital resources during and after school hours. While mobile connectivity is expanding, broadband penetration still lags behind national targets; government initiatives such as the National Broadband Plan (2020–2025) and the National Broadband Alliance aim to improve availability, speed, and affordability, but recent figures suggest progress remains uneven. Electricity access likewise varies by region, affecting schools' ability to deploy bandwidth- and power-dependent tools consistently. At the same time, smartphone adoption is high and rising, making mobile-first solutions particularly promising for out-of-class speaking practice and feedback.

Against this backdrop, artificial intelligence (AI) tools—notably automatic speech recognition (ASR), text-to-speech (TTS), conversational agents, and AI-assisted feedback—offer new possibilities for scalable, practice-rich speaking opportunities that complement teacher-led instruction. A growing research base in computer-assisted language learning (CALL) shows that AI-mediated interaction and ASR-supported pronunciation/fluency training can improve L2 speaking outcomes when integrated thoughtfully into curricula. Systematic reviews and classroom studies report gains in pronunciation accuracy, fluency, and willingness to speak, especially when feedback is immediate, comprehensible, and tied to communicative tasks rather than isolated drills.

Nevertheless, the literature also warns against the fact that ASR system does not perform well when given underrepresented accents, which may result in less accurate feedback of the African English influenced French or Nigerian L1 transfer patterns. The existence of evidence documenting accent-related disparities in mainstream ASR, as well as research and development work to enhance recognition of African English varieties, demonstrate the necessity of adaptation and local validation prior to high stakes application. The associated ethical adoption should be correlated with data protection and AI ethics. In Nigeria, processing of personal data (including student voice data) is regulated by the Nigeria Data Protection Act (NDPA) 2023, with UNESCO suggesting the importance of transparency, safety and human control in a generative AI classroom applications.

This paper, "Adapting Artificial Intelligence Tools to Enhance Oral Communicative Competence in French Language Education in Nigeria," addresses this opportunity-risk equation. We argue that context-aware adaptation—mobile-first design, offline or low-bandwidth modes, localized speech models and prompts, CEFR-aligned tasks, teacher-dashboards for formative assessment, and clear privacy safeguards—can turn AI tools into practical accelerators of learner talk time and quality feedback without displacing the teacher. The goal is not to import tools "as-is," but to co-design for Nigerian classrooms: integrating AI-supported speaking practice with syllabus objectives, addressing infrastructure constraints, ensuring fairness across accents, and embedding ethical protections for learners and teachers alike. By situating AI within Nigeria's policy commitments to French, the realities of school infrastructure, and the CEFR's communicative orientation, this study sets out the rationale, design principles, and evaluation lenses for improving learners' spoken French at scale in Nigeria.

Artificial Intelligence (AI) has significantly transformed language education by offering interactive, personalized, and scalable learning experiences. In the context of French language education in Nigeria, AI tools present innovative solutions to persistent challenges such as limited access to native speakers, inadequate instructional materials, and the need for individualized learning pathways. These technologies, including natural language processing, speech recognition, and machine learning, are particularly valuable for developing oral communicative competence, enabling learners to practice speaking and listening skills in an engaging and structured manner (Ozaveshe-Michael & Nwokocha, 2024a; Ozaveshe-Michael & Nwokocha, 2024b).

The theoretical underpinning for integrating AI in language education aligns with adaptive learning principles and the Common European Framework of Reference for Languages (CEFR). Adaptive learning allows AI systems to tailor educational experiences to the learner's proficiency level, pace, and specific learning needs, enhancing motivation and

engagement. Aligning AI applications with CEFR standards ensures that learners acquire competencies across listening, speaking, reading, and writing, with a particular emphasis on oral communication (Ozaveshe-Michael & Nwokocha, 2024a).

AI-powered language learning platforms such as Duolingo, Rosetta Stone, and conversational AI chatbots offer learners opportunities for simulated conversations with immediate feedback, which is essential for improving pronunciation, fluency, and comprehension (Avouris, 2025). Similarly, voice assistants and AI pronunciation tools provide real-time correction of intonation, stress, and rhythm, which are critical components of oral competence (Asian Institute of Research, 2024). Empirical studies in the Nigerian context demonstrate that AI integration in French language learning can increase student engagement, speaking confidence, and overall proficiency (Ozaveshe-Michael & Nwokocha, 2024b).

The successful use of AI tools in Nigerian classrooms should be planned properly. Educators have the responsibility to align the curriculum to national standards and CEFR requirements with incorporation of artificial intelligence tools to offer a pattern of learning. It is vital that the educator is trained to be able to integrate the use of AI technologies into their lesson plans. In addition, proper infrastructure such as consistent/reliable internet connection and suitable devices is important in the fruitful adoption. AI tools also need to be culturally adapted and reflect linguistic and contextual peculiarities of Nigeria, boosting the tools relevance and reduce learner engagement loss in favor of the contextual specifics of the Nigerian language and culture (Asian Institute of Research, 2024).

Despite these advantages, challenges persist. Limited access to technology, insufficient digital literacy among both teachers and learners, and the high cost of AI tools can hinder effective implementation. Additionally, many AI tools are developed in Western contexts and may not fully address the cultural and linguistic needs of Nigerian learners, potentially affecting learning outcomes (Ozaveshe-Michael & Nwokocha, 2024a).

The aim of the study is to examine how Artificial Intelligence (AI) tools can be adapted and integrated into French language education in Nigeria to improve learners' oral communicative competence. The objectives are to: identify the challenges Nigerian students face in developing oral communicative competence in French, explore the types of AI tools applicable to oral language learning in French education, evaluate the effectiveness of AI tools in improving pronunciation, fluency, and listening comprehension among French learners, assess students' attitudes and motivation towards using AI tools in French oral communication practice.

In order to achieve the objectives, the following are the research questions to be examined for the study:

 i.   What challenges do Nigerian learners face in acquiring oral communicative competence in French?

 ii.   Which AI tools can be adapted for enhancing oral communication skills in French language education?

 iii.   To what extent do AI tools improve learners' pronunciation, fluency, and listening comprehension in French?

 iv.   How do students perceive the use of AI tools in learning spoken French?

Methodology

The research carried out in this study adopted a descriptive survey research design format; that is, the adaptation of Artificial Intelligence (AI) tools in the improvement of oral communicative competence in French language learning among students in the Polytechnics in the South Western region of Nigeria. The sample population included students taking varied French programs (National Diploma; Higher National Diploma) and a purposive sampling procedure was applied to select institutions that offer French. A total of 246 students took part in the research, which was adequate, according to the table of sample size proposed by Krejcie and Morgan (1970) since a sample that was above 200 could be said to represent a higher population with a confidence level of 95 percent and a margin error or error level of five. The group of key factors which provided a foundation to the design of a structured questionnaire included challenges to oral competence,

accessibility and use of AI tools, perceived outcome of such use in terms of pronunciation, fluency, and listening comprehension and student attitude and motivation. The questionnaire was prepared in Google Forms and evaluated by experts in language education and educational technology to provide content validity, whereas to assess reliability, we used coefficient of Cronbach (coefficient of 0.70 and more is considered as good). The instrument was shared over social networks (students), emails, and WhatsApp groups and answers were auto counted, cleansed, and finalized to ready them to be analyzed. Descriptive and inferential statistics were used; in descriptive analysis were the frequencies, percentages, means, and standard deviations; inferential analysis employed Pearson Product-Moment Correlation to observe the relation between AI tools and oral communicative competence, and multiple regression analysis to check the predictive ability of AI tools on pronunciation and fluency and listening comprehension. The analyses were performed in SPSS version 25 at a 0.05 level of significance. Ethical considerations were observed by informing respondents of the purpose of the study, assuring confidentiality and anonymity, and obtaining informed consent before participation, with responses kept voluntary and strictly for academic purposes.

Result and Discussion

Table 1: Students' Perceptions of Challenges in Developing Oral Communicative Competence

Challenges in Oral Competence	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)	Mean	Decision
Limited exposure to native speakers	112 (45.5%)	93 (37.8%)	29 (11.8%)	12 (4.9%)	3.24	Agree
Insufficient classroom interaction time	98 (39.8%)	101 (41.1%)	33 (13.4%)	14 (5.7%)	3.15	Agree
Lack of digital learning resources	89 (36.2%)	106 (43.1%)	37 (15.0%)	14 (5.7%)	3.10	Agree
Pronunciation difficulties	121 (49.2%)	87 (35.4%)	28 (11.4%)	10 (4.0%)	3.30	Agree

The results in table 1 reveal that the majority of the students acknowledged facing significant challenges in developing oral communicative competence in French. Pronunciation difficulties (Mean = 3.30) and limited exposure to native speakers (Mean = 3.24) were identified as the most pressing challenges, followed by insufficient classroom interaction time (Mean = 3.15). The lack of digital resources (Mean = 3.10) also emerged as a major obstacle. This indicates that Nigerian French learners struggle most with authentic exposure and pronunciation practice, which aligns with earlier findings that language learners in non-native environments face structural limitations that impede oral fluency.

Table 2: Students' Awareness and Use of AI Tools for Oral Practice

AI Tool Adaptation Factors	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)	Mean	Decision
AI-powered speech recognition apps	105 (42.7%)	97 (39.4%)	31 (12.6%)	13 (5.3%)	3.20	Agree
Chatbots for conversational practice	92 (37.4%)	104 (42.3%)	34 (13.8%)	16 (6.5%)	3.11	Agree

AI Tool Adaptation Factors	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)	Mean	Decision
Virtual reality/avatars for simulations	88 (35.8%)	101 (41.1%)	39 (15.9%)	18 (7.3%)	3.05	Agree
Mobile-based translation and learning apps	118 (48.0%)	86 (35.0%)	29 (11.8%)	13 (5.3%)	3.26	Agree

Findings in table 2 indicate that students were generally aware of and receptive to the use of AI tools in oral communication practice. Mobile-based learning and translation applications were rated highest (Mean = 3.26), showing their widespread accessibility among students. AI-powered speech recognition apps (Mean = 3.20) and chatbots (Mean = 3.11) were also considered useful, while virtual reality simulations (Mean = 3.05) received relatively lower ratings, possibly due to limited exposure or technological constraints. These findings suggest that learners are more inclined to adopt AI tools that are mobile-friendly and easy to integrate into daily learning activities.

Table 3: Effectiveness of AI Tools in Enhancing Oral Communicative Skill

Effectiveness Indicators	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)	Mean	Decision
Improves pronunciation accuracy	122 (49.6%)	87 (35.4%)	27 (11.0%)	10 (4.1%)	3.30	Agree
Enhances oral fluency	115 (46.7%)	89 (36.2%)	29 (11.8%)	13 (5.3%)	3.25	Agree
Strengthens listening comprehension	111 (45.1%)	92 (37.4%)	30 (12.2%)	13 (5.3%)	3.22	Agree
Builds confidence in oral practice	106 (43.1%)	98 (39.8%)	28 (11.4%)	14 (5.7%)	3.20	Agree

The analysis in table 3 shows that AI tools were perceived as effective in enhancing key aspects of oral communicative competence. The strongest impact was observed in pronunciation accuracy (Mean = 3.30), followed closely by oral fluency (Mean = 3.25) and listening comprehension (Mean = 3.22). Students also acknowledged that AI tools helped boost their confidence in oral practice (Mean = 3.20). These results highlight the practical utility of AI applications in addressing learners' challenges, particularly in pronunciation, which had also been identified earlier as the most difficult aspect of oral competence.

Table 4: Students' Attitudes and Motivation Toward AI Integration

Attitudinal Factors	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)	Mean	Decision
AI tools make learning more engaging	117 (47.6%)	89 (36.2%)	27 (11.0%)	13 (5.3%)	3.26	Agree
Motivates me to practice outside class	113 (45.9%)	92 (37.4%)	28 (11.4%)	13 (5.3%)	3.23	Agree
Encourages independent learning	108 (43.9%)	96 (39.0%)	29 (11.8%)	13 (5.3%)	3.21	Agree
Reduces anxiety in speaking French	101 (41.1%)	99 (40.2%)	31 (12.6%)	15 (6.1%)	3.16	Agree

The results in table 4 demonstrate that students held positive attitudes toward the use of AI tools in learning spoken French. The highest-rated factor was that AI makes learning more engaging (Mean = 3.26), while motivation to practice outside the classroom (Mean = 3.23) and encouragement of independent learning (Mean = 3.21) also scored highly. Importantly, students noted that AI helped reduce anxiety in speaking French (Mean = 3.16), which reflects the supportive role of AI in creating a less intimidating learning environment. Overall, the positive ratings suggest that students are motivated and willing to embrace AI technologies as part of their language learning process.

Test of Hypotheses:

Table 5: Pearson Correlation between AI Tools and Oral Communicative Competence

Variables	AI Tool Usage	Pronunciation	Fluency	Listening Comprehension	Oral Competence (Overall)
AI Tool Usage	1	.612**	.598**	.574**	.635**
Pronunciation	.612**	1	.621**	.589**	.712**
Fluency	.598**	.621**	1	.602**	.701**
Listening Comprehension	.574**	.589**	.602**	1	.688**
Oral Competence (Overall)	.635**	.712**	.701**	.688**	1

The correlation results show a strong positive relationship between the use of AI tools and students' oral communicative competence in French (r = .635, p < .01). Among the sub-skills, AI tool usage correlated most strongly with pronunciation

(r = .612) and fluency (r = .598), while listening comprehension also showed a moderately strong correlation (r = .574). This suggests that students who engage more with AI applications tend to perform better in oral communication, particularly in accurate pronunciation and fluency. The overall oral competence strongly correlated with all the sub-components, indicating that AI tools play a comprehensive role in strengthening communicative ability.

Table 6: Model Summary

R	R²	Adjusted R²	Std. Error of Estimate
.682	.466	.459	0.421

Table 7: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	38.212	3	12.737	71.905	.000
Residual	43.822	242	0.181		
Total	82.034	245			

Table 8: Coefficients

Predictor Variables	B	Std. Error	Beta (β)	t	Sig.
(Constant)	0.842	0.133	-	6.333	.000
Pronunciation	0.315	0.054	.362	5.833	.000
Fluency	0.287	0.057	.324	5.035	.000
Listening Comprehension	0.201	0.049	.261	4.102	.000

The regression results as in dicated in tables 6,7, and 8 indicate that AI tools significantly predict oral communicative competence among French learners in South West Nigerian Polytechnics (F = 71.905, p < .001). The model explained approximately 46.6% of the variance in oral competence (R² = .466), showing that AI adoption is a strong determinant of oral performance. All three predictors—pronunciation (β = .362, p < .001), fluency (β = .324, p < .001), and listening comprehension (β = .261, p < .001)—contributed significantly to the model, with pronunciation emerging as the strongest predictor. This suggests that AI tools, especially those with speech recognition and corrective feedback, are particularly effective in improving learners' ability to pronounce words accurately, while also enhancing fluency and listening comprehension. These findings reinforce the earlier descriptive results, highlighting AI tools as an essential complement to traditional classroom instruction in addressing learners' oral communication challenges.

Discussion of findings

The findings of this study provide substantial evidence that the adaptation of Artificial Intelligence (AI) tools has a positive impact on enhancing oral communicative competence among students learning French in South West Nigerian polytechnics. The descriptive statistics revealed that students generally agreed that AI applications supported their pronunciation, fluency, and listening comprehension skills, with most respondents rating their experiences on the higher end of the four-point Likert scale. This trend is consistent with earlier research highlighting that technology-mediated learning environments foster active engagement and greater learner autonomy in language acquisition (Godwin-Jones,

2019). The emphasis students placed on pronunciation improvement suggests that AI tools such as speech recognition systems and language learning applications provide valuable corrective feedback, which has been identified as a key mechanism in second-language oral skill development (Derwing & Munro, 2015).

In the same, the descriptive results showed that the learners identified fluency as another aspect that was positively impacted by the AI integration. Respondents said that they used regular exposure to AI-powered conversational agents and practice interfaces to develop confidence in protracted conversation. This is in line with the views of Warschauer and Liaw (2019) whose intellectual frontier is that digital learning platforms provide low-anxiety recursive practice opportunities of oral communication and eventual fluency and accuracy. The results received in terms of listening comprehension are also high, emphasizing the success of audio resources delivered through AI in making learners exposed to a variety of accents, speed of speech and levels of context that in the traditional classroom teaching is limited. The importance of such exposure has been highlighted in second-language studies as the essential means by which they can improve on communicative competence (Vandergrift & Goh, 2012).

The inferential statistics reinforced these descriptive insights by providing robust statistical evidence of the relationships between the studied variables. The correlation analysis revealed strong and significant positive associations between AI tool usage and each dimension of oral competence: pronunciation ($r = .612$, $p < .01$), fluency ($r = .598$, $p < .01$), and listening comprehension ($r = .574$, $p < .01$). This suggests that students who made greater use of AI tools consistently reported higher competence in oral communication. These results resonate with findings from Rosell-Aguilar (2018), who noted that the interactive and personalized nature of AI-driven applications creates an environment conducive to practicing and reinforcing oral language skills.

Further support was provided by the regression analysis, which showed that AI tools significantly predicted oral communicative competence, accounting for 46.6% of the variance in performance ($R^2 = .466$, $F(3, 242) = 71.905$, $p < .001$). All three factors—pronunciation, fluency, and listening comprehension—were significant predictors, with standardized beta values of .362, .324, and .261 respectively. This indicates that while pronunciation had the strongest unique contribution, fluency and listening comprehension also played substantial roles in determining overall competence. The implication is that AI tools operate as a multidimensional support system, simultaneously enhancing different but interrelated aspects of oral communication. This confirms the theoretical proposition that communicative competence is not a singular construct but a composite of interdependent skills that technology can foster collectively (Canale & Swain, 1980).

Collectively, the results raise hopes in the possible use of AI in French language learning in Nigeria. Through such methods of teaching, AI also has the capacity to provide personalised feedback, an opportunity to get more practice, especially due to a larger exposure to authentic use of language, which directly respond to on-going challenges of lack of interaction with the native speaker and limited time in the classroom. These findings are in line with worldwide statistics that embraces the increased importance of the AI in the language teaching (Li, Link, & Hegelheimer, 2015). The paper thus adds to the literature on technology aided language learning in that it shows empirically how AI could be transformed to enhance oral communicative competence in a foreign language teaching environment in which French is being taught.

Conclusion

This work presented evidence to show that Artificial Intelligence tools may have a significant positive impact in the area of oral communicative competence when used in French language learning in South West Nigerian polytechnics. The results indicated the point that, AI applications increase pronunciation, fluency, and listening comprehension and that all the relationships and predictive consequences were proved in regression analysis. On balance, the paper comes to the conclusion that the incorporation of AI in French teaching is feasible and effective solution to remove learning barriers and enhance oral proficiency of students.

Recommendation

On the basis of findings, multiple recommendations are suggested. First, polytechnics teaching French must bring AI-related technologies like speech recognition programmes, intelligent tutoring systems and AI-based conversational engines into the curriculum in order to develop communicative competence in communicating orally in an organized manner. Second, faculty and instructors are to be trained on how they can use AI resources to augment their teaching instead of replacing classroom communication. Third, institutional policies are to be focused on the investment into digital infrastructure and access to the reliable internet as technological barriers continue to become a challenge to achieving the maximum benefits of AI. Fourth, the student population is to be encouraged to utilise resources of AI outside of the classroom, use them to practise and learn more in their own way of pace and get a sense of autonomy and own confidence in oral communication. Finally, future work ought to broaden the scope to other regions of Nigeria and use longitudinal designs in order to determine into what extent does AI adoption affects oral proficiency in the long-run. Putting these recommendations into practice, stakeholders will be able to explore the full expressive potential of AI and teach learners who are not only communicatively competent and confident but also ready to operate in multilingual environments.

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