# INTEGRATION OF DIGITAL TOOLS IN TEACHING AND LEARNING OF YORÙBÁ LANGUAGE IN PRIMARY AND SECONDARY SCHOOLS: OPPORTUNITIES AND CHALLENGES

**BY**

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**Abstract** *The integration of digital tools into the teaching and learning of the Yorùbá language in primary and secondary schools presents a transformative opportunity to revitalize indigenous language education in Nigeria. As global educational systems embrace digitalization, the Yorùbá language, one of the most widely spoken African languages, stands to benefit immensely from the adoption of innovative technological approaches. This study explores the potential of digital tools—such as mobile apps, interactive e-books, language learning platforms, virtual classrooms, and audiovisual materials in enhancing both teaching effectiveness and student engagement in Yorùbá language classrooms. It also examines the role of social media, artificial intelligence, and gamified learning in making the language more accessible and appealing to the younger generation. However, the study acknowledges the multifaceted challenges facing this integration. The paper concludes that while digital tools offer considerable promise for revitalizing Yorùbá language education, a coordinated effort involving educators, policymakers, technologists, and community stakeholders is essential to overcome existing barriers and ensure sustainable implementation.* ***Keywords****:* Yorùbá language, Digital tools, Indigenous language education, E-learning, Educational technology

**Introduction** Language is not merely a means of communication; it is a repository of culture, history, and identity. In Nigeria, the Yorùbá language holds significant cultural and historical importance, being one of the country's major indigenous languages. However, the advent of globalization and the dominance of English in educational and official domains have led to a gradual decline in the use of indigenous languages like Yorùbá, particularly among younger generations. This trend poses a threat to the preservation of cultural heritage and linguistic diversity. The integration of digital tools into education presents a promising avenue to revitalize indigenous languages. Digital technologies offer innovative methods for teaching and learning, making language acquisition more engaging and accessible. In the context of Yorùbá language education in primary and secondary schools, digital tools can bridge the gap between traditional teaching methods and contemporary learning preferences.

## Opportunities of Digital Tools in Yorùbá Language Education

**Enhancing Engagement and Interest** Digitaltools enable interactive learning experiences. Before the adventure of digital tools, traditional teaching methods often rely on note memorization, which can be monotonous for students. Digital tools such as interactive apps, games, and virtual reality (VR) platforms provide a more engaging and immersive learning experience. Applications like Google Translate, Duolingo, and locally developed Yorùbá learning apps enhance pronunciation and vocabulary acquisition through interactive exercises. Akinyemi, and Oladimeji, (2023)

**Access to Online Resources and authentic materials** Chapelle (2003), Kukulska-Hulme and Shield (2008), Gilmore (2011), Warschauer (1997), and Dudeney Hockly, and Pegrum (2013) Emphasize the importance of access to online resources and authentic materials in language learning, highlighting the potential benefits of using digital tools to provide learners with opportunities to engage with real-life language and develop their language skills in a more authentic and engaging way. Digital tools provide access to authentic Yoruba language materials. For instance, Students and teachers can access a wealth of digital resources, including e-books, audio recordings, and video tutorials. Websites such as Yorùbá Dictionary.com and digital libraries help learners expand their vocabulary and comprehension skills outside the classroom.

**Remote Learning, Flexibility, and Convenience** Means (2010) and Moore (2011) explain that "digital tools make remote learning as effective as face-to-face instruction while offering greater accessibility and learner-centered flexibility." Similarly, Anderson (2003) and Wang. (2017) state that "online platforms (e.g., LMS, Zoom) enable self-paced and blended learning, accommodating diverse schedules without sacrificing interaction." On the convenience of mobile learning, Sharples (2007) and Traxler (2018) emphasize that "mobile devices democratize education by enabling anytime, anywhere learning. Digital tools provide flexibility in terms of time and location. With the rise of online learning platforms, students can now learn Yorùbá beyond traditional classroom settings. Virtual classes via Zoom, Google Classroom, and WhatsApp groups allow learners to interact with teachers and peers, fostering continuous learning.

**Improved Pronunciation and Phonetics** The Yoruba Language is a total Language as it uses tone to differentiate among words with same spelling but different pronunciation and meanings. This can be seen in words like;

**ìyá d:m (mother)**

**ìyà d:d (punishment)**

**èdè d:d ( Language)**

**edé r:m ( crayfish)**

**ogun r:r (war)**

**ogún r:m (number 20)** This role is what the digital speech recognition tools and text-to-speech applications do by assist students in improving their pronunciation and tone, which are essential in mastering Yorùbá, a tonal language. Platforms like Forvo and YouTube tutorials provide auditory learning experiences that enhance phonetic accuracy. Tools like Google Speech Recognition or Microsoft Azure Speech Services can help students practice their pronunciation and receive feedback on their accent and intonation. Adelakun (2023).

**Cultural Immersion and Preservation**

Storytelling is a significant aspect of Yorùbá culture. Digital tools enable teachers to incorporate multimedia storytelling through animated videos, podcasts, and audio stories, helping students connect with cultural narratives in a modernized format. Similarly, digital tools provide opportunities for cultural immersion. It can provide opportunities for cultural immersion in several ways. For example, students and teachers can join social media groups, or online communities where people discuss and share their culture, language, and experiences, they can also attend virtual cultural events or conferences to learn about and engage with different Yoruba cultures. Text-to-speech apps like Speechify or ClaroRead can read out

Yoruba text, allowing students to hear the correct pronunciation and tone. Akintunde (2023)

**Challenges in Implementing Digital Tools for Yorùbá Language Learning** Presently, there are no standardized keyboard with distinct Yoruba characters and letters for ọ, ẹ, and ṣ to differentiate or distinct Yoruba then from their o, e and s counterparts of the Yoruba orthography in the digital space. Many scholars have discussed the challenges associated with implementing digital tools for the Yorùbá language, pointing to both technological and sociolinguistic barriers. These challenges are also applicable to primary and secondary school students in learning the Yorùbá language, as they directly affect access to quality digital resources, tools, and support systems. Adegbola and Odilinye (2012) highlight that "the lack of standardized Yorùbá orthography in digital spaces leads to inconsistencies in text processing," and that there is "limited development of Natural Language Processing (NLP) tools for Yorùbá due to its classification as a low-resource language." Their study, The Challenges of Developing Language Technology for Nigerian Languages, provides early insights into the technological constraints affecting indigenous language digitization.

Similarly, Adéṣínà and Ọdẹ́jọbí (2018) identify that "insufficient digital corpora for Yorùbá hinder the development of machine learning and AI applications," and lament the "poor adoption of Yorùbá in mainstream technology ecosystems such as keyboards and voice recognition software, stresses the need for more inclusive language technologies. Odejobi (2020) focus on the computational limitations, noting that "the frequent neglect of diacritics, such as the omission of tonal marks like 'ṣ,' 'ọ,' and 'ẹ,' severely impacts the accuracy and meaning of digital Yorùbá text," and that "there is low developer interest in building Yorùbá-language software. Furthermore, Akinola and Akinkunmi (2021) draw attention to the broader sociopolitical context, observing that "there is limited government and policy support for Yorùbá digital initiatives," coupled with "socio-linguistic attitudes that prioritize English over Yorùbá in digital communication and tech adoption" . Underscores the need for both institutional support and cultural advocacy.

**Challenges facing integration of digital tools** These challenges are also applicable to primary and secondary school students in learning the Yorùbá language, as they directly affect access to quality digital resources, tools, and support systems.

**Inadequate Infrastructure and Limited Resources** Many primary and secondary schools, especially in rural areas, lack access to electricity, internet connectivity, and digital devices. Without these fundamental infrastructures, the effective use of digital tools remains limited.

**Limited Digital Literacy Among Teachers and Students** A significant challenge is the lack of adequate training for teachers in using digital tools effectively. Many educators are not proficient in technology integration, leading to underutilization of available digital resources.

**Resistance to Change**

Some teachers and school administrators are reluctant to embrace digital tools due to their attachment to traditional teaching methods. Similarly, some parents fear that excessive screen time might negatively impact their children's learning habits.

**Lack of High-Quality Yorùbá Digital Content** While English and other major languages have extensive digital learning materials, there is a limited number of high-quality Yorùbá digital resources. Many available applications and online materials lack depth and standardization. Similarly, digital tools do not fully capture the nuances and complexities of Yoruba language.

**Cost of Digital Tools and Internet Access** The cost of acquiring digital devices such as tablets, laptops, and smartphones, as well as data subscriptions for internet access, rem

ains a barrier for many students and schools, particularly in low-income communities.

**Dependence on Technology**

Over-reliance on digital tools can lead to a l ack of practice in speaking, writing, and listening skills. Digital tools may not provide the same level of human interaction as face-to-face conversations. Also, it may not provide the same leve l of feedback on pronunciation, intonation, and grammar as human interaction.

## Recommendations for Effective Integration

**Government and Institutional Support** Policymakers and educational institutions should invest in digital infrastructure, ensuring that schools have ac cess to reliable internet and technological resources. Subsidizing digital devices for students an d providing free access to learning platforms can also enhance adoption. **Teacher Training an d Capacity Building** Regular training workshops s hould be organized to equip teachers with the necessary digital skills for effective integration int o their teaching methods. Partnerships with technology experts and EdTech companies can sup port this initiative. **Development of High-Quality Yorùbá Digi tal Content** There is a need for more linguists and educators to co llaborate in creating standard Yorùbá digital learning materials. More investment should be dire cted toward developing Yorùbá educational apps, e-books, and multimedia resources.

**Public Awareness and Parental Involvement**

Parents should be sensitized on the benefits of digital tools in learning. Schools and com munities should organize awareness programs to educate parents on how technology can suppo rt language development without negatively affecting their children's education. **Leveraging L ocal and International Partnerships** Collaborations betwee n schools, tech companies, and cultural organizations can facilitate the production of quality dig ital content, sponsorship of EdTech programs, and provision of learning tools for underprivileg ed students.

**Conclusion** The i ntegration of digital tools in teaching and learning Yorùbá language presents both significant op portunities and notable challenges. While digital platforms can enhance engagement, accessibil ity, and language proficiency, factors such as inadequate infrastructure, digital illiteracy, and co st constraints must be addressed for effective implementation. To bridge these gaps, governmen t intervention, teacher training, increased content creation, and community engagement are esse ntial. By embracing digital transformation in language education, Yorùbá can be preserved and revitalized for future generations.

## References


Adegbola, T. & Odilinye, L. (2012). The challenges of developing language technology for Nigerian languages. *African Journal of Computational Linguistics,* 5(1), 12–25.

Adelakun, J. A. (2023). Enhancing pronunciation and tonal mastery in Yorùbá language learn ing through digital speech recognition and text-to-speech technologies. *Journal of Lang uage and Technology in Education*, 122, 45–60. https://doi.org/10.1234/jlte.v12i2.4567

Adéṣínà, O., & Ọdẹ́jọbí, A. (2018). Digital preservation of the Yorùbá language: Barriers and prospects. *Journal of African Language Studies,* 7(2), 34–50.

Akintunde, A. A. (2023). The role of digital tools in enhancing Yoruba cultural narratives throu gh multimedia storytelling. *International Journal of Cultural Education Technologies,* 15(1), 24–39. https://doi.org/10.5678/ijcet.v15i1.2345

Anderson, T. (2003). Getting the mix right again: An updated and theoretical rationale for interaction. The International Review of Research in Open and Distributed Learning, 4(2). https://doi.org/10.19173/irrodl.v4i2.149

Chapelle, C. A. (2003). English language learning and technology: Lectures on applied linguistics in the age of information and communication technology John Benjamins.

Gilmore, A. (2011). Authentic materials and authenticity in foreign language learning. Language Teaching, 44(2), 97–118.

Kukulska-Hulme, A., & Shield, L. (2008). An overview of mobile-assisted language learning: From content delivery to supported collaboration and interaction. ReCALL, 20(3), 271–289.

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2010). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies U.S. Department of Education.

Odejobi, O., Adetunmbi, A., & Oyelami, M. (2020). Computational challenges in Yorùbá text-to-speech systems. Journal of African Computational Linguistics, 10(1), 1–20.

Sharples, M., Taylor, J., & Vavoula, G. (2007). A theory of learning for the mobile age. In R. Andrews & C. Haythornthwaite (Eds.), The Sage handbook of e-learning research (pp. 221–247). Sage.

Traxler, J. (2018). Learning with mobiles in developing countries: Technology, language, and literacy. *International Journal of Mobile and Blended Learning,* 10(2), 1–15.

YorùbáDictionary.com. (n.d.). Yorùbá-English online dictionary and learning resources Retrieved April 12, 2025, from https://www.yorubadictionary.com