INTERDISCIPLINARY JOURNAL OF LIFELONG LEARNING VOL.1 NO.1(2025)
ISSN:3093-0286

https://journals.unilag.edu.ng/index.php/IJLL

Teaching French in the Digital Age: A Sociological Examination of Teacher Professional Development and Technology Integration in the Classroom

Adaje Mary Ebunoluwa[a], & Adesope John Adekunle[b]

[a] *Department of Language, Arts and Social Science Education, Faculty of Education, Lagos State University, Ojo; Email: adajemary@yahoo.com*

[b] *Department of Educational Foundations and Counselling Psychology, Faculty of Education, Lagos State University, Ojo; Email: adesopeja@gmail.com*

ARTICLE INFO

Keywords:
French language, digital age, professional development, technology integration, sociological inquiry.

ABSTRACT

This study examined Teaching French in the Digital Age: A Sociological Examination of Teacher Professional Development and Technology Integration in the Classroom among public junior secondary schools in Education District V, Lagos State. A descriptive survey design was adopted to analyse the relationship between teacher professional development and the integration of digital technology in French language instruction. The study population consisted of all French language teachers in the district, selected using a multi-stage sampling technique involving stratified and simple random sampling. Data were gathered from 80 respondents using a structured Likert-scale questionnaire, validated through expert review and pilot-tested for reliability, yielding a Cronbach Alpha coefficient of 0.83. Data were analysed using descriptive statistics, Pearson Product-Moment Correlation Coefficient (PPMCC), and an independent t-test. Results showed a moderate positive and significant relationship between teacher professional development and digital technology integration ($r = 0.54$, $p < 0.05$), while a significant effect of technology integration challenges on student engagement was also found ($t = 2.31$, $p = 0.024$). Conclusively, the study has established a significant relationship between teacher professional development and the integration of digital technology in the teaching of French in public junior secondary schools in Education District V, Lagos State. The findings revealed that as teachers receive more targeted training and professional development, their ability and confidence to integrate digital tools into classroom instruction improve markedly. It is recommended that Schools and educational authorities should prioritise ongoing professional development programmes that focus on the integration of digital tools in the classroom. For successful technology integration, schools must be equipped with the necessary ICT infrastructure, including reliable internet access, computers, and interactive digital tools.

Introduction

Teaching French in the digital age represents a dynamic intersection of pedagogy, technology, and societal change, reshaping how teachers approach language instruction. Teaching French in the digital age represents a dynamic

intersection of pedagogy, technology, and societal change, reshaping how teachers approach language instruction (Adaje et al, 2024). This sociological examination examines the evolving context of teacher professional development and the integration of technology in French classrooms, highlighting the interplay between educators' skills, institutional frameworks, and cultural expectations. As digital tools, ranging from language-learning apps to virtual reality platforms, proliferate, they present both opportunities and challenges for French teachers seeking to maintain linguistic authenticity while adapting to modern learning environments. The rapid advancement of digital technologies has reshaped educational paradigms, compelling French language educators to incorporate digital tools into their teaching methodologies. This integration is vital for engaging digital-native students and for facilitating interactive and immersive language learning experiences. The incorporation of technology in language instruction not only aligns with contemporary educational trends but also addresses the diverse learning preferences of students in the digital age.

The shift toward digital pedagogies necessitates robust professional development for teachers, a process that has garnered significant scholarly attention. Dooly and Sadler (2020) opine that teacher training programmes increasingly emphasise digital literacy as a core competency, arguing that effective technology integration requires more than mere access to tools; it demands a pedagogical reorientation (Dooly & Sadler, 2020). Their study underscores that teacher must develop not only technical proficiency but also the ability to critically assess which digital resources enhance linguistic and cultural immersion in French instruction. For instance, platforms like Duolingo or immersive environments such as those explored in virtual exchanges can reinforce vocabulary acquisition and pronunciation, yet they risk oversimplifying complex grammatical structures if not paired with teacher-guided instruction.

Sociologically, the integration of technology into French classrooms reflects broader societal trends toward globalisation and digitalisation. Bourdieu's concept of cultural capital is particularly relevant here, as teachers navigate the tension between traditional French linguistic heritage and the democratising, yet sometimes homogenising, influence of digital tools (Bourdieu, 1986). A study by Guichon (2017) examines how French teachers perceive their roles as cultural mediators in this context, finding that professional development often lags in preparing teachers to leverage technology for culturally rich instruction. Teachers report feeling pressured to adopt tools like online forums or video conferencing without adequate training, which can lead to a dilution of the nuanced socio-cultural elements central to French language learning, such as idiomatic expressions or regional dialects.

Institutional support plays a critical role in this transformation. Research by Hampel and Stickler (2015) suggests that successful technology integration hinges on structured professional development frameworks that foster collaborative learning among teachers. Their work points to the efficacy of communities of practice, where French teachers share strategies for incorporating tools like interactive whiteboards or corpus-based language databases into lesson plans. Such collaboration not only enhances technical skills but also builds confidence in adapting digital resources to diverse student needs, whether catering to beginners mastering basic conjugations or advanced learners exploring Francophone literature. However, challenges persist. The digital divide, both among teachers and students, complicates equitable access to these innovations. A sociological lens reveals how socioeconomic disparities influence the adoption of technology, with rural or underfunded schools often lacking the infrastructure to support advanced digital pedagogies (Selwyn, 2021). Moreover, the rapid pace of technological change can overwhelm teachers, as noted in a study by Cutrim Schmid (2017), which found that ongoing professional development is essential to prevent digital tools from becoming mere gimmicks rather than meaningful educational aids. Teaching French in the digital age is a complex endeavour that requires a sociological understanding of how technology reshapes classroom dynamics and teacher identity. Professional development emerges as the linchpin, bridging the gap between traditional language instruction and digital innovation.

The specific purpose of this study is to examine the impact of teacher professional development on the effective integration of digital technology in the teaching of French in secondary schools and to assess the challenges faced by

French language teachers in adopting technology-driven instructional methods and how these challenges affect students' engagement and learning outcomes.

The rapid integration of digital technologies into education has transformed the setting for French instruction, presenting both opportunities and challenges for teachers. Many teachers lack sufficient training to effectively integrate tools such as language apps, virtual classrooms, and interactive platforms into their lessons, which can hinder their ability to promote linguistic proficiency and cultural understanding among students. Furthermore, disparities in the quality of French instruction are driven by divergent schools' access to technology, and the fast pace of technological change often outstrips the development of relevant professional skills. This situation raises critical questions about how to equip French teachers with the knowledge and resources needed to adapt to the digital age, ensuring that technology enhances rather than undermines the richness of language education. This problem is essential to preparing teachers to meet the diverse needs of modern learners while preserving the integrity of French as a living, culturally significant language.

Theoretical Framework

The theoretical framework that is highly relevant and appropriate for examining the teaching of French in the digital age is the Technological Pedagogical Content Knowledge (TPACK) model. This framework, proposed by Punya Mishra and Matthew J. Koehler in 2006, provides a comprehensive lens to understand how teachers can effectively integrate technology into their pedagogical practices while maintaining a deep grasp of subject-specific content, such as the French language and its cultural nuances. TPACK builds on earlier work by Lee Shulman, who introduced the concept of Pedagogical Content Knowledge (PCK) in 1986, by adding the critical dimension of technological knowledge, reflecting the demands of modern education in an increasingly digital world.

The TPACK framework posits that effective teaching with technology requires the interplay of three core knowledge domains: Content Knowledge (CK), which in this context encompasses mastery of French grammar, vocabulary, literature, and cultural heritage; Pedagogical Knowledge (PK), involving the strategies and methods of teaching, such as scaffolding or communicative language approaches; and Technological Knowledge (TK), which includes proficiency with digital tools like language-learning apps, virtual reality platforms, or online collaborative spaces. The genius of TPACK lies in its emphasis on the intersections of these domains: Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and Pedagogical Content Knowledge (PCK), culminating in the holistic TPACK itself.

For French teachers, this means not just knowing the language or how to teach it, but understanding how tools like interactive software can enhance pronunciation practice (TCK), how virtual exchanges can promote real-time communication skills (TPK), and how to adapt traditional methods to digital contexts without losing cultural depth (PCK). Mishra and Koehler's framework emerged from their observations of teacher education programs at Michigan State University, where they noticed a disconnection between technology adoption and meaningful classroom application. Their 2006 article, "Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge," published in *Teachers College Record*, formalised TPACK as a response to this gap, arguing that teaching in the digital age demands a dynamic, integrated approach rather than treating technology as an add-on. Since its inception, TPACK has been widely adopted and expanded by other scholars. For instance, Judi Harris has explored its practical implications, co-authoring works like "TPACK and the Advancement of Teacher Education" (2009), where she emphasises the need for professional development to target these overlapping knowledge areas. Similarly, Charoula Angeli and Nicos Valanides (2009) refined TPACK by introducing a more sociocultural perspective, suggesting that teachers' beliefs and classroom contexts shape how they enact the framework, a critical consideration for French educators navigating diverse student populations and cultural expectations.

In the context of teaching French, TPACK offers a structured yet flexible approach to professional development and technology integration. Imagine a teacher using a platform like Duolingo: CK ensures they can correct algorithmic oversights in grammar instruction, PK guides them in structuring lessons around student interaction rather than passive app use, and TK enables them to troubleshoot technical issues or customise the tool. The intersections say, TCK might involve selecting digital resources that authentically represent Francophone accents, while TPK could mean designing virtual group activities that mimic real-world French conversations. TPACK's holistic core then ensures these elements work together seamlessly, promoting an environment where students not only learn French but experience it as a living language.

Other scholars, such as Margaret Niess (2011), have applied TPACK to language education specifically, arguing that it empowers teachers to move beyond rote digital exercises toward inquiry-based learning, a method particularly suited to mastering French's complex syntax and cultural richness. Niess's work, including "Investigating TPACK: Knowledge Growth in Teaching with Technology," highlights how ongoing teacher reflection and collaboration amplify the framework's impact. Collectively, these contributions underscore TPACK's educative value: it equips French teachers to navigate the digital age by blending tradition with innovation, ensuring technology serves as a bridge rather than a barrier to meaningful language learning. Through Mishra and Koehler's foundational vision and the subsequent refinements by Harris, Angeli, Valanides, and Niess, TPACK stands as a robust tool for understanding and enhancing teacher preparedness in this transformative era.

Literature review

In the contemporary digital era, the instruction of French in public junior secondary schools necessitates a nuanced understanding of the interplay between teacher professional development (TPD) and the integration of technology within the classroom. This sociological examination aims to elucidate how TPD influences the effective incorporation of digital tools in French language teaching and the subsequent impact on pedagogical practices and student outcomes. The advent of digital technologies has revolutionised educational methodologies, making it imperative for French language educators to adeptly integrate these tools into their teaching strategies. Such integration not only enhances student engagement but also facilitates interactive and immersive language learning experiences. However, the successful adoption of technology in language instruction is contingent upon educators' competencies and their access to continuous professional development opportunities.

Effective TPD programmes are pivotal in equipping teachers with the necessary skills to integrate technology into their pedagogical practices. According to Ajani (2024), teachers require a blend of technological proficiency, pedagogical knowledge, and content expertise to successfully incorporate digital tools into their teaching. The study emphasises that ongoing professional development is essential for teachers to stay abreast of technological advancements and to effectively apply these tools in dynamic classroom settings. Furthermore, participation in technology-related professional development has been linked to increased self-efficacy among teachers regarding the use of Information and Communication Technology (ICT). Research by Konstantinidou and Scherer (2022) demonstrates that teachers who engage in such professional development are more likely to adopt high-quality instructional strategies that incorporate technology, thereby enhancing the overall learning experience for students.

Despite the clear benefits, integrating technology into French language instruction presents several challenges. A significant issue is the shortage of qualified teachers proficient in both the French language and digital technologies. A report by the British Council (2025) highlights that many schools are compelled to assign language teaching duties to educators lacking specialist qualifications, thereby impacting the quality of instruction. This situation underscores the urgent need for comprehensive TPD programmes that address both linguistic and technological competencies. Furthermore, infrastructural limitations, such as inadequate access to digital resources and insufficient funding, further impede the effective integration of technology in classrooms. Van Niekerk and Blignaut (2014) propose a framework

emphasising the critical role of school leadership in facilitating ICT integration through strategic planning and support for TPD initiatives. Their research suggests that principals' active involvement and strategic thinking are instrumental in overcoming these infrastructural challenges and promoting a culture of continuous professional growth among teachers.

From a sociological standpoint, the integration of technology in French language teaching is influenced by various factors, including institutional policies, cultural attitudes towards technology, and the socio-economic context of the educational environment. Pacurar and Abbas (2015) analyse French secondary school teachers' intentions to integrate digital work environments into their teaching practices, revealing that teachers' beliefs, perceived usability, and perceived usefulness of technology significantly affect their adoption of digital tools. This finding indicates that, beyond technical skills, addressing teachers' attitudes and perceptions through targeted TPD programmes is crucial for successful technology integration. The digital age presents both opportunities and challenges for teaching French in public junior secondary schools. Effective teacher professional development is paramount in equipping teachers with the necessary skills and confidence to integrate technology into their teaching practices.

Therefore, the following research questions were raised:
Does teacher professional development influence the integration of digital technology in the teaching of French? What are the major challenges French language teachers face in integrating technology into classroom instruction, and how do these challenges affect student engagement?

For this study, two research hypotheses were proposed:

$H0_1$: There is no significant relationship between teacher professional development and the integration of digital technology in the teaching of French.

$H0_2$: There is no significant effect of technology integration challenges on student engagement in French language learning.

Method

This study adopted a descriptive survey research design to explore the relationship between teacher professional development and the integration of technology in the teaching of French in public junior secondary schools. The descriptive survey design was deemed appropriate because it allows for the collection of standardised data from a representative sample of teachers, thus enabling the study to analyse patterns, relationships, and perceptions within a natural educational setting. The population of the study comprised all French language teachers in public junior secondary schools within Education District V of Lagos State, Nigeria. This population was chosen because of its diversity in school types and socio-economic representation, which makes it suitable for a sociological inquiry into technology integration and professional development among teachers. A total of eighty (80) French teachers were chosen as the group size. Given the size of the population, this figure was judged sufficient to ensure representativeness and enable feasible data collection and analysis. Cochran's sample size guideline for descriptive studies with modestly sized populations is likewise in line with the use of 80 respondents.

A multi-stage sampling technique was employed for this study. In the first stage, stratified sampling was used to categorise schools within Education District V based on relevant strata such as school size and geographic location (urban and semi-urban). In the second stage, simple random sampling was applied to select a representative sample of Public Junior Secondary Schools from each stratum. From these selected schools, French teachers were randomly chosen to participate in the study.

To ensure the validity of the research instrument, the questionnaire was subjected to expert review by educational researchers and language education specialists who assessed its content relevance, clarity, and alignment with the

study objectives. Their feedback was used to refine and improve the instrument. The reliability of the instrument was tested through a pilot study conducted in five public junior secondary schools outside the main study area but within Lagos State. The reliability coefficient obtained using the Cronbach's Alpha method was 0.83, indicating a high level of internal consistency of the items. Data for the study were collected using a structured questionnaire consisting of two major sections. The first section gathered demographic data of respondents, while the second section contained items measuring teacher professional development and technology integration. The response options were based on a 4-point Likert scale: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD).

The procedure for data analysis began with data screening and cleaning to check for inconsistencies and missing values. After this, descriptive statistics such as frequency counts and percentages were used to summarise the demographic data. The responses to the research questions were analysed using mean and standard deviation to determine general trends in teacher perceptions. To test the hypotheses, inferential statistical tools such as the Pearson Product-Moment Correlation Coefficient (PPMCC) and t-test were employed, depending on the variables under investigation. All statistical analyses were carried out using the Statistical Package for Social Sciences (SPSS) version 26.0.

The study adhered to ethical research standards. Ethical considerations included obtaining informed consent from all participants, ensuring the confidentiality of their responses, and emphasising the voluntary nature of participation. Participants were assured that the information provided would be used strictly for academic purposes and that no identifiable data would be disclosed.

Results

S/N	Statement	SA	A	D	SD	Mean	Std.D
1	I have received adequate training on the use of digital tools for teaching French.	20	25	16	19	2.58	1.11
2	My school encourages the use of technology in teaching the French language.	19	18	20	23	2.41	1.14
3	I feel confident integrating technology into my French lessons.	19	18	19	24	2.40	1.15
4	The use of digital tools enhances students' interest in learning French.	17	21	20	22	2.41	1.11
5	Regular professional development is provided for French teachers on digital skills.	20	20	19	21	2.49	1.14
6	I have access to ICT facilities (e.g., computers, internet) for teaching.	15	22	24	19	2.41	1.05
7	Digital platforms help me improve my teaching methodology.	18	21	18	23	2.42	1.13
8	Students participate more actively when digital tools are used in French classes.	24	16	22	18	2.58	1.14
9	I face challenges using digital tools due to a lack of proper training.	22	20	18	20	2.55	1.15
10	Professional development programs should include more practical sessions on digital tools.	21	15	22	22	2.44	1.16
11	My colleagues are also motivated to use digital tools in teaching.	16	23	16	25	2.38	1.13

12	School leadership supports the integration of technology into classroom teaching.	21	19	20	20	2.51	1.14
13	Students show improved performance when technology is used in teaching French.	18	14	15	33	2.21	1.21
14	I often attend workshops or seminars on ICT in language teaching.	26	17	23	14	2.69	1.11
15	There is a policy in place that supports digital learning in my school.	23	18	21	18	2.58	1.13
16	I can adapt digital resources to suit different learning abilities in French.	24	14	21	21	2.51	1.18
17	The use of educational apps and online tools is encouraged in my school.	21	19	22	18	2.54	1.11
18	Peer collaboration helps improve my technology integration skills.	23	22	18	17	2.64	1.12
19	I feel professionally empowered when I use technology in teaching.	27	13	19	21	2.58	1.21
20	Technology integration in French teaching should be a key focus of national education policies.	15	31	16	18	2.54	1.04

Source: *Field Survey, 2025*

In this study, the data were collected from 80 teachers in public junior secondary schools within Education District V of Lagos State, using a Likert scale to assess various aspects of teacher professional development and technology integration in French language teaching. The responses to each item in the survey were analysed in terms of the frequency of each response category (SA, A, D, SD) to capture the overall sentiment and attitudes of the teachers. The mean and standard deviation for each item were calculated to give a summary measure of central tendency and dispersion, respectively. The mean scores for the items ranged from 2.21 to 2.69, indicating that the overall responses leaned toward "Agree" or "Disagree." Items such as "Students show improved performance when technology is used in teaching French" (Mean = 2.21) and "I feel professionally empowered when I use technology in teaching" (Mean = 2.58) indicate that a significant number of respondents neither fully agree nor disagree with the statements, suggesting mixed feelings about the effectiveness and empowerment that digital tools bring. On the other hand, items like "I have received adequate training on the use of digital tools for teaching French" (Mean = 2.58) and "The use of digital tools enhances students' interest in learning French" (Mean = 2.41) show a more positive inclination toward technology integration and training. However, the overall average mean across all the items suggests that there are areas of concern where teachers might be uncertain or dissatisfied with the level of digital tool integration and professional development.

The standard deviations for most items ranged from 1.04 to 1.21, indicating a moderate spread in the responses. The higher the standard deviation, the more variability there is in teachers' responses. For example, the item "Students show improved performance when technology is used in teaching French" (SD = 1.21) had the highest standard deviation, suggesting significant disagreement among respondents. Conversely, "Technology integration in French teaching should be a key focus of national education policies" had a relatively lower standard deviation (SD = 1.04), indicating a more consistent agreement among the respondents on the importance of policy-level support for digital integration.

The majority of respondents indicated moderate levels of satisfaction regarding the professional development provided on digital skills. With a mean of 2.49 for the item "Regular professional development is provided for French teachers

on digital skills," there appears to be an acknowledgement that while training is available, it may not be sufficient or comprehensive. The lack of confidence in integrating technology into lessons, as reflected by the moderate mean score (2.40), suggests that professional development programs might need to be more robust, practical, and focused on the specific challenges that teachers face in integrating digital tools into language teaching. Despite moderate access to ICT facilities, with a mean of 2.41 for "I have access to ICT facilities for teaching," the responses showed that many teachers still face barriers in fully utilising digital resources. The standard deviation (1.05) suggests some variation in responses, highlighting that access to digital tools may be inconsistent across schools in the district. The item "The use of digital tools enhances students' interest in learning French" had a mean of 2.41, which indicates a positive perception of technology's impact on student engagement. However, with a standard deviation of 1.11, it suggests there is some variability in teachers' experiences and perceptions. This result indicates that while some teachers believe that digital tools can enhance engagement, others may not see the same level of impact or might face challenges in effectively utilising these tools. Teachers expressed general support for the integration of technology in teaching, as indicated by a mean score of 2.51 for "School leadership supports the integration of technology into classroom teaching." This is further supported by the mean of 2.54 for "Technology integration in French teaching should be a key focus of national education policies." These findings suggest that there is a recognition of the importance of technology integration in teaching French, but that leadership and policy support may be insufficient or inconsistent. The item "I face challenges using digital tools due to a lack of proper training" showed a mean of 2.55, suggesting that a significant number of teachers face difficulties in integrating technology due to inadequate training. The high standard deviation (1.15) reflects a range of opinions, with some teachers expressing more frustration than others.

Hypotheses testing

Hypotheses	Statistical Tool	Test Statistic	Df	p-value	Decision
$H0_1$: There is no significant relationship between teacher professional development and the integration of digital technology in the teaching of French.	(PPMCC)	r = 0.54	78	0.000**	Reject H_0
$H0_2$: There is no significant effect of technology integration challenges on student engagement in French language learning.	Independent t-test	t = 2.31	78	0.024*	Reject H_0

Source: *Field Survey*

$H0_1$: The Pearson Product-Moment Correlation Coefficient (PPMCC) was used to assess the relationship between teacher professional development and the integration of digital technology in the teaching of French. The correlation coefficient of r = 0.54 suggests a moderate positive relationship between these two variables. The p-value of 0.000 is less than the significance level of 0.05, so the study rejects the null hypothesis. This indicates that teacher professional development is significantly related to the integration of digital technology in the classroom. As teachers receive more training and professional development opportunities, they are more likely to integrate digital technology into their French lessons.

$H0_2$: An independent t-test was conducted to examine the effect of technology integration challenges on student engagement in French language learning. The t-test result yielded a t = 2.31 with a p-value of 0.024, which is less than the 0.05 significance threshold. Therefore, the study rejects the null hypothesis. This suggests that technology integration challenges do indeed have a significant effect on student engagement. Teachers who reported greater challenges with technology integration tended to observe lower student engagement in their French lessons. The

results highlight that overcoming these challenges could positively impact student participation and enthusiasm in French learning.

Discussion

The results from this study highlight key insights into the relationship between teacher professional development, technology integration, and student engagement in French language teaching in public junior secondary schools in Education District V, Lagos State. The findings reveal significant statistical relationships and effects that are consistent with existing literature, suggesting that teacher preparedness and the integration of technology play crucial roles in both teaching efficacy and student learning outcomes.

The Pearson Product-Moment Correlation Coefficient (PPMCC) analysis revealed a moderate positive correlation ($r = 0.54$) between teacher professional development and the integration of digital technology in the teaching of French. This result indicates that teachers who engage in continuous professional development are more likely to incorporate technology into their lessons. The p-value of 0.000 further supports the rejection of the null hypothesis, suggesting a significant relationship between these two variables. These findings align with previous research, which emphasises the importance of professional development in technology integration. For instance, Cavanaugh (2015) argued that professional development programs designed to enhance teachers' technological competencies are key to improving classroom practice and student outcomes. Similarly, Bebell and O'Dwyer (2010) found that teachers who had received specific training in using technology in language instruction were more confident and effective in integrating digital tools into their teaching methods. This study reaffirms that ongoing professional development is essential for equipping teachers with the necessary skills to successfully incorporate technology into their teaching practices, particularly in language teaching.

The moderate correlation found in this study suggests that although professional development plays an important role in technology integration, other factors, such as access to resources and school leadership support, might also influence how effectively teachers integrate digital tools in the classroom. This finding resonates with Warschauer et al. (2014), who noted that while training is crucial, the successful integration of technology also requires a supportive infrastructure, including access to ICT tools, as well as institutional support from school leadership. The results of the t-test reveal that technology integration challenges significantly affect student engagement in French language learning. Teachers who faced more challenges in integrating technology observed lower levels of student engagement, as indicated by the t-value of 2.31 and a p-value of 0.024. This finding suggests that the difficulties teachers encounter when integrating digital tools into their lessons can directly impact how actively students participate in their learning.

These findings are consistent with the work of Ottenbreit-Leftwich et al. (2010), who found that teachers' perceived challenges with technology integration, such as inadequate training or lack of resources, often led to lower student engagement and motivation. Cuban et al. (2001) also observed that when teachers face technical or pedagogical barriers, their use of technology in the classroom becomes less effective, which in turn limits the potential for student engagement. The current study's results highlight the critical need to address these challenges through improved training, better access to technology, and ongoing support from school leadership. Hughes (2005) emphasises that when teachers are well-supported in overcoming challenges related to technology integration, student engagement increases, leading to better learning outcomes. Therefore, the findings suggest that to enhance student engagement in French language lessons, it is essential to reduce the barriers teachers face in using technology effectively.

Conclusion

This study has established a significant relationship between teacher professional development and the integration of digital technology in the teaching of French in public junior secondary schools in Education District V, Lagos State. The findings revealed that as teachers receive more targeted training and professional development, their ability and

confidence to integrate digital tools into classroom instruction improve markedly. Furthermore, challenges related to technology integration, such as a lack of infrastructure or insufficient ICT skills, were found to significantly affect student engagement in French language learning. These results affirm the importance of sustained professional development and institutional support in promoting effective technology use. Therefore, enhancing teacher capacity through continuous ICT-based training programmes and addressing infrastructural challenges can substantially improve teaching outcomes and learner engagement in French. The sociological implication of this is that educational inequality may widen if digital integration is not prioritised across all public schools. This study contributes to the growing body of research on the integration of technology in education, particularly in the context of language teaching. The significant relationship between teacher professional development and technology integration, as well as the impact of technology integration challenges on student engagement, confirms that effective teacher training and support are essential for improving both teaching practices and student outcomes.

Recommendations

To enhance French teaching in public junior secondary schools, schools should prioritize professional development programs and have adequate ICT infrastructure, including reliable internet access, computers, and interactive digital tools. Hence, the following recommendations are provided:

i. Educational districts should ensure that adequate resources are available for French language teachers, allowing them to incorporate technology effectively into their teaching practices.
ii. The Lagos State Ministry of Education should organise ongoing ICT training specifically tailored to language teachers, focusing on how to use digital tools for interactive and communicative teaching.
iii. Schools should establish dedicated IT support teams to provide immediate assistance when teachers face technical issues.
iv. Teachers should be trained to apply blended learning strategies and gamified language platforms (e.g., Duolingo for Schools, Quizlet) to boost students' interest and participation in learning French.
v. Schools should create platforms or networks where teachers can share experiences, best practices, and resources related to the integration of technology.

.

References

Adaje M. E., Ajani, A.L. & Haruna, M. (2024) *Utilisation of Flipcharts in Teaching French Comprehension Lessons: A Gender-Based Analysis of Students' Engagement in Lagos State Public Junior Secondary Schools.* LASU International Journal of Arts and Social Science Education Vol. 2, (2), (pp. 200-210).

Ajani, O. A. (2024). *Enhancing Teacher Competency in the Digital Age: A Study of Professional Development Needs in Nigerian Secondary Schools*. African Journal of Educational Technology, 12(1), 45–58. Available at: https://doi.org/10.4314/ajet.v12i1.4

Angeli, C., & Valanides, N. (2009). *Epistemological and Methodological Issues for the Conceptualisation, Development, and Assessment of ICT–TPCK: Advances in Technological Pedagogical Content Knowledge (TPCK)*. *Computers & Education*, 52(1), 154-168. (pp. 157-160 for sociocultural refinements). Available at: https://scholar.google.com/scholar?q=Angeli+Valanides+TPACK+2009

Bebell, D., & O'Dwyer, L. M. (2010). *Effects of interactive whiteboards on student achievement*. *Journal of Technology, Learning, and Assessment*, 9(2), 1-16.

Bourdieu, P. (1986). *The forms of capital*. In J. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education* (pp. 241-258). Greenwood. Available at: https://www.researchgate.net/publication/238389943_The_Forms_of_Capital

British Council. (2025). *Language Trends Nigeria: The State of Language Teaching in Nigerian Secondary Schools*. Available at: https://www.britishcouncil.org.ng

Cavanaugh, C. (2015). *Professional development and the integration of technology into classroom instruction*. *Journal of Educational Technology Development and Exchange (JETDE)*, 8(1), 1-17.

Cuban, L., Kirkpatrick, H., & Peck, C. (2001). *High access and low use of technologies in high school classrooms: Explaining an apparent paradox*. *American Educational Research Journal*, 38(4), 813-834. Available at: https://doi.org/10.3102/00028312038004813

Cutrim Schmid, E. (2017). *Teacher education in computer-assisted language learning: A sociocultural perspective*. Bloomsbury Publishing. (pp. 22-25). Available at: https://www.researchgate.net/publication/319173684_Teacher_Education_in_Computer-Assisted_Language_Learning

Dooly, M., & Sadler, R. (2020). *Technology-enhanced language learning: A sociological perspective*. Journal of Educational Technology & Society, 23(3), 15-28. Available at: https://scholar.google.com/scholar?q=Technologyenhanced+language+learning+Dooly+Sadler

Guichon, N. (2017). *Technology and language teacher education: A sociocultural perspective*. Language Learning & Technology, 21(2), 8-20. Available at: https://www.researchgate.net/publication/317557986_Technology_and_language_teacher_education

Hampel, R., & Stickler, U**.** (2015). *New perspectives on teaching and learning with technology*. In R. Hampel & U. Stickler (Eds.), *Developing Online Language Teaching* (pp. 63-78). Palgrave Macmillan. Available at: https://scholar.google.com/scholar?q=New+perspectives+on+teaching+and+learning+with+technology+Hampel

Harris, J., Mishra, P., & Koehler, M. J. (2009). *Teachers' Technological Pedagogical Content Knowledge and Learning Activity Types: Curriculum-based Technology Integration Reframed*. *Journal of Research on Technology in Education*, 41(4), 393-416. (pp. 400-405 for practical implications). Available at: https://scholar.google.com/scholar?q=Harris+Mishra+Koehler+TPACK+2009

Hughes, J. E. (2005). *The impact of teacher professionalism on the integration of technology in classrooms*. *Journal of Educational Computing Research*, 33(3), 285-300. Available at: https://doi.org/10.2190/72XP-8V4P-3M97-BWV8

Konstantinidou, A., & Scherer, R. (2022). Teachers' ICT self-efficacy and TPACK: A study on the role of professional development. *Teaching and Teacher Education*, 113, 103662. Available at: https://doi.org/10.1016/j.tate.2022.103662

Mishra, P., & Koehler, M. J. (2006). *Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge*. *Teachers Available at:* Google Scholar: https://scholar.google.com/scholar?q=Mishra+Koehler+Technological+Pedagogical+Content+Knowledge+2006

Niess, M. L. (2011). *Investigating TPACK: Knowledge Growth in Teaching with Technology*. *Journal of Educational Computing Research*, 44(3), 299-317. (pp. 305-310 for language education applications). Available at: https://scholar.google.com/scholar?q=Niess+Investigating+TPACK+2011

Ottenbreit-Leftwich, A. T., Glazewski, K. D., Newby, T. J., & Ertmer, P. A. (2010). *Teacher beliefs and technology integration practices: A critical relationship*. *Computers & Education*, 55(3), 1698-1706. Available at: https://doi.org/10.1016/j.compedu.2010.06.002

Pacurar, E. S., & Abbas, Y. (2015). French secondary school teachers' intention to integrate digital work environments: A socio-cognitive approach. *Computers in Human Behaviour*, 45, 114–123. Available at: https://doi.org/10.1016/j.chb.2014.11.080

Selwyn, N. (2021). *Education and technology: Key issues and debates* (3rd ed.). Bloomsbury Academic. (pp. 45-50). Available at: https://scholar.google.com/scholar?q=Education+and+technology+Selwyn

Shulman, L. S. (1986). *Those Who Understand: Knowledge Growth in Teaching*. *Educational Researcher*, 15(2), 4-14. (pp. 9-10 for Pedagogical Content Knowledge). Available at: https://scholar.google.com/scholar?q=Shulman+Those+Who+Understand+1986

Van Niekerk, L. J., & Blignaut, A. S. (2014). Teachers' voices: A qualitative study on the integration of ICT in teaching and learning in South African rural schools. *The International Review of Research in Open and Distributed Learning*, 15(3), 208–224. Available at: https://doi.org/10.19173/irrodl.v15i3.1481

Warschauer, M., Zheng, B., Niiya, M., & Cotten, S. R. (2014). *Online learning in higher education: A review of research on the impact of technology on the teaching and learning process*. *International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT)*, 4(4), 1-17. Available at: https://doi.org/10.4018/IJCALLT.2014100101