JELR | JOURNAL OF E-LEARNING RESEARCH

ISSN: 2669-235X

Volume **4**, Issue **1**

Getting Back to Basics: Highlighting the Need for Research on Technology Exposure in Children's Language Classrooms

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ABSTRACT

The COVID-19 pandemic has significantly accelerated technology use in education, particularly in young language learners' classrooms. This shift has raised concerns among primary school educators regarding how increased screen time and digital distractions affect cognitive development and Additional Language Learning (L2 learning). Preliminary conversations with primary school teachers suggest growing apprehension about over-reliance on technology in children's classrooms. While digital tools support personalized learning, excessive use may limit meaningful interaction, potentially hindering L2 acquisition. This study highlights the urgent need for targeted research to examine the effects of classroom technology on young L2 learners and to develop pedagogical strategies that ensure a balanced approach to technology integration. Based on insights from educators in Madrid, Spain, this study contributes to ongoing discussions on post-pandemic technology integration, offering practical implications for language classrooms worldwide.

Keywords: Post-Pandemic, Young Language Learners, Technology Integration, Screen Time, Digital Distraction

Cite this article as: Kelly, M., García Ortiz, E., Schutz, W., & Doherty P. (2025). Getting Back to Basics: Highlighting the Need for Research on Technology Exposure in Children's Language Classrooms, *Journal of e-learning Research*, *4*(1), 65-79. https://doi.org/10.33422/jelr.v4i1.953

1. Introduction

The COVID-19 pandemic has accelerated the integration of digital technologies in education, reshaping how young learners engage with classroom content. For example, online learning platforms and digital resources have become central to the classroom experience. This shift has influenced the methods through which they practice and acquire Additional Language (L2) skills in classroom settings. While technology can offer opportunities for personalized learning and engagement, the increased reliance on these tools has raised significant concerns among teachers of children. This study explores the experiences of primary school teachers in Madrid, Spain. Teachers acknowledged the benefits of technology but expressed concerns that excessive use leads to distractions, hindering learning outcomes.

Educators interviewed in this study expressed the need for a more considered approach to technology integration in the context of primary school classrooms, one that prioritizes human and meaningful interaction in the L2 acquisition process. This study contributes insights relevant for educators and policymakers by identifying both the challenges and benefits of digital technology in language education at primary school level. Understanding these dynamics can help develop more effective strategies to enhance learning outcomes while ensuring a balanced approach.

1.1 Research Context and Rationale

A growing body of literature has explored the impact of technology on learning outcomes, highlighting both benefits and challenges. For instance, Gottschalk (2019) and Ponti (2023) point to the cognitive and social risks of excessive screen time, while Alakrash and Abdul Razak (2021) emphasize the potential of digital tools to enhance skill development when thoughtfully integrated. Furthermore, Abdelhaq and Diyyab (2023) and Dore and Dynia (2020) underline the need for tailored approaches to integrating digital and traditional methods, emphasizing the importance of balancing technology with physical, interactive activities. In addition, Liu et al. (2024) highlight the role of strategic digital tool use in supporting young learners' language development, especially when accompanied by effective teacher guidance. Moreover, Owoseje (2023) raises critical concerns about the broader societal implications of technology adoption in education, calling for a nuanced analysis of its long-term effects.

However, limited research explores primary school teachers' perspectives on technology use in young L2 classrooms, leaving critical gaps in understanding its challenges and implications. Understanding these perspectives is crucial as primary educators are at the forefront of implementing these technologies and observing their direct impacts on young learners. This study aims to bridge these gaps by exploring the experiences and insights of primary school teachers in Madrid, Spain.

1.2 Research Questions

Existing research lacks comprehensive studies on the long-term effects of classroom technology in childhood education, particularly in L2 learning. This paper seeks to highlight these gaps in research and calls for urgent action to better understand the effects of technology in young L2 learners' classrooms. Thus, the study addresses the following two research questions:

1. How do primary school teachers perceive the impact of technology on students' L2 learning outcomes and classroom engagement?
2. What are the potential strategies for balancing technology use with traditional teaching methods to optimize L2 learning experiences in primary school classrooms?

1.3 Organization of the Paper

This paper is organized into six main sections. The introduction section introduces the background, significance, and rationale of the study. Next, the Literature Review synthesizes existing research, presenting theoretical perspectives and identifying research gaps. Following that, the Research Design and Methods section describes the qualitative approach and data collection process. Next, the Results section presents the key findings from teacher conversations, identifying recurring themes. Subsequently, the Discussion section interprets these findings in relation to existing research, addresses the research questions, considers study limitations, and highlights practical implications. Finally, the Conclusion summarizes the key findings and outlines directions for future research and policy recommendations.

2. Literature Review

The integration of technology in education has transformed teaching and learning practices, offering both new opportunities and challenges. In the context of Additional Language Learning classrooms (L2 classrooms), digital tools have been widely incorporated for their potential to enhance engagement, personalize learning experiences, and increase accessibility.

However, the rapid adoption of technology, particularly following the COVID-19 pandemic, has raised concerns about its effects on young learners. Existing studies indicate that excessive or inappropriate technology use can disrupt traditional interactive teaching methods and hinder essential developmental processes, such as language acquisition, cognitive growth, and social interaction (Gottschalk, 2019; Ponti, 2023). While numerous studies highlight the benefits of technology in education, including improved literacy skills and increased exposure to language (Alakrash and Abdul Razak, 2021; Dore and Dynia, 2020), critical gaps remain in understanding its long-term impacts, especially in young learners' L2 classrooms. Additionally, broader societal implications of technology integration, as highlighted by Owoseje (2023), emphasize the need for more critical analyses of its potential effects.

This literature review synthesizes current research on technology use in L2 classrooms, focusing on its effects on young learners and the perspectives of teachers and students. It explores how technology influences cognitive, linguistic, and social development, the balance between traditional and digital learning methods, and innovative applications of technology in education. By identifying gaps in existing research, this review aims to highlight the urgent need for studies that address the specific challenges posed by technology use in L2 classrooms for young learners.

2.1 Theoretical Perspectives on Technology in L2 Learning

The integration of technology in L2 learning has been met with both enthusiasm and caution. Advocates highlight the potential of digital tools to personalize learning, increase engagement, and facilitate access to resources. Gottschalk (2019) emphasizes the cognitive benefits of technology, such as improved problem-solving skills and literacy development, particularly when high-quality educational content is used. Similarly, Alakrash and Abdul Razak (2021) demonstrate that digital technologies can enhance language acquisition by offering interactive features and fostering skill development in areas like vocabulary, listening, and speaking. Mobile dictionary apps, as emphasized by Barham and Clarke (2022), play a significant role in fostering self-directed vocabulary learning, boosting student confidence, and enabling greater autonomy in L2 acquisition. Additionally, Aldossary et al. (2021) highlight the significant potential of digital applications in supporting multilingual children's language development, providing engaging and interactive ways to enhance their learning experiences.

However, the rapid proliferation of technology in classrooms also brings significant challenges. Gottschalk (2019) and Ponti (2023) caution that much of the existing research on technology use is correlational, with limited understanding of its long-term impacts on young learners. Concerns are further extended by Ponti (2023), who points to potential negative outcomes of excessive screen time, such as language delays and reduced parent-child interactions. The term "technostress" describes the pressure that teachers and students alike experience in adapting to new and ever-changing technologies. Ali et al. (2024) highlight the risks of distractions and technostress caused by constant adaptation to new tools, particularly when technology use is not effectively guided by educators. Teacher preparedness and attitudes play a critical role in the effective integration of technology, as Bunting et al. (2021) and Vasalou et al. (2022) note that teachers' perceptions of personalized learning technologies can shape their adoption and effectiveness.

Moreover, balancing digital tools with physical activities and human interaction is essential to support holistic development. Ponti (2023) and Gottschalk (2019) emphasize the need for mindful implementation of technology to mitigate associated risks. Studies by Abdelhaq and Diyyab (2023) and Kelpsiene and Monkeviciene (2024) advocate for approaches that combine digital and embodied learning, suggesting that physical, interactive activities are essential for

maintaining engagement and fostering meaningful, long-lasting understanding in young learners. Pragasam and Sulaiman (2023) highlight how pupils' perspectives on technology reveal the need for tailored approaches that consider both the benefits and limitations of digital tools.

Ultimately, the literature emphasizes the need for careful pedagogical design to ensure that digital tools enhance student engagement while preserving meaningful face-to-face interactions.

2.2 Effects of Technology on Young Learners

The effects of technology on young learners are multifaceted, influencing their cognitive, linguistic, and social development. Cognitively speaking, digital tools can enhance problem-solving skills and facilitate learning through interactive and adaptive content. For example, Ponti (2023) argues that high-quality digital content, when used appropriately, supports language acquisition and the development of executive functions in young children. Similarly, Dore and Dynia (2020) highlight the instructional benefits of devices like tablets in preschool classrooms for teaching foundational language skills. In addition, Liu et al. (2024) assert that digital tools, when integrated strategically and supported by educators, play a vital role in advancing young children's language and literacy skills.

In terms of linguistic development, Abdelhaq and Diyyab (2023) demonstrate the value of embodied learning methods in enhancing oracy skills and classroom engagement. Their study shows that integrating physical activities with digital tools improves children's ability to understand and use language. Similarly, Barham and Clarke (2022) note that while mobile dictionary apps can empower learners by enabling self-directed vocabulary acquisition, they also present challenges such as distractions and the need for teacher guidance. Moreover, Kelly (2021) found that giving young students autonomy in using technology to select learning materials and tasks significantly increased their motivation and engagement, thus highlighting the need for balanced strategies that promote self-regulation.

Socially, technology can both foster and hinder interactions among young learners. Dore and Dynia (2020) observe that teacher-supported technology use can encourage collaborative learning and peer interaction when activities are well guided. In contrast, Gottschalk (2019) and Ponti (2023) warn that excessive digital engagement may reduce essential face-to-face interactions, which are crucial for social and emotional development. Additionally, Ali et al. (2024) argue that an overabundance of digital tools can lead to technostress or disengagement, while Durham and Jones (2024) explore how multitasking with digital devices may simultaneously offer opportunities for collaboration and introduce risks of distraction.

Despite these benefits, concerns remain regarding the developmental implications of excessive technology use. Excessive screen time has been linked to language delays and reduced parent-child interactions (Ponti, 2023). Huang et al. (2024) further caution that prolonged use of digital devices can impair attention spans and memory retention, both of which are critical components of cognitive development.

These studies illustrate that while digital tools offer valuable opportunities, their impact depends on how they are integrated into pedagogical frameworks, with teacher guidance playing a crucial role in fostering meaningful learning experiences.

2.3 Teacher and Student Perceptions

Understanding teacher and student perceptions of technology use is critical to evaluating its effectiveness in language classrooms. Alakrash and Abdul Razak (2021) note that while both teachers and students in Malaysian EFL classrooms exhibit high levels of digital literacy, challenges remain in effectively implementing technology for L2 learning. Teachers frequently stress the need for more comprehensive training to align digital tools with pedagogical objectives, particularly when teaching complex skills such as reading comprehension. Similarly, Kildé (2023) reports that teachers' attitudes toward educational technology integration significantly impact its success, emphasizing the importance of fostering positive perceptions and addressing barriers.

Teachers also face unique pressures. Gath et al. (2024) explored mixed perspectives on mobile phone use in New Zealand schools, revealing that while mobile phones are valued as educational tools, they are also seen as significant distractions. Teachers expressed concerns about balancing the benefits of accessibility with the risks of overuse, particularly in maintaining classroom focus. Siwa and Basthomi (2023) further emphasize that large EFL classes require tailored strategies to ensure students remain engaged without over-reliance on digital tools. Teacher preparedness also plays a critical role in the effective integration of technology. Alakrash and Abdul Razak (2021) and Dore and Dynia (2020) highlight the need for ongoing teacher training to ensure that digital tools align with learner-centered pedagogical approaches. Furthermore, Vasalou et al. (2022) discuss how teachers reappropriate literacy technologies to broaden their applications, indicating the importance of instructional design and teacher agency in successful technology integration.

Barham and Clarke (2022) examine how mobile dictionary apps are perceived by Palestinian students learning English. Students reported feeling empowered and confident due to the accessibility and convenience of these tools, although the study also identified challenges such as distractions and difficulties in determining context-appropriate word meanings. These findings highlight the dual-edged nature of technology, which can offer both autonomy and potential obstacles without proper guidance.

Technostress is another critical challenge. Ali et al. (2024) describe how educators and students alike experience stress in adapting to new technologies, with constant updates and shifts in digital tools creating barriers to effective integration. Similarly, Kohnke et al. (2024) identify technostress among English language teachers in Hong Kong, exacerbated by the rapid development of generative AI tools such as ChatGPT. Teachers reported feeling overwhelmed by the need to continuously update their skills and adapt to emerging technologies, highlighting the importance of targeted professional development and institutional support.

Despite these challenges, students often express positive attitudes toward technology when it is integrated thoughtfully. For instance, Rodríguez-Arce et al. (2023) found that mobile-assisted language learning fosters self-regulated learning and enhances vocabulary acquisition, although its success depends heavily on teacher guidance and the careful design of learning activities. Similarly, Agum et al. (2021) observed that Filipino college students appreciate the autonomy provided by technology, while also highlighting the need for support in navigating challenges.

Collectively, these studies reveal a complex interplay of benefits and challenges in teacher and student perceptions of technology use. While digital tools can empower learners and provide valuable resources, their effectiveness ultimately hinges on the preparedness and adaptability of educators.

2.4 Balancing Digital and Traditional Methods

Achieving a balance between digital tools and traditional teaching methods is essential for fostering holistic and effective language learning experiences. Abdelhaq and Diyyab (2023) advocate for incorporating physical, interactive activities alongside digital tools, emphasizing the benefits of embodiment learning. Their findings reveal that combining movement with language instruction significantly improves oracy skills and classroom engagement among young learners. This approach keeps children active in their learning and addresses concerns about the passive nature of screen-based interactions. Eze and Onyishi (2022) support this by noting that differentiated instruction through school library resources can effectively complement digital methods.

Kelpsiene and Monkeviciene (2024) extend this argument by highlighting the potential of augmented reality (AR) technologies to enhance cognitive engagement through experiential learning. They caution, however, against over-reliance on digital tools, which may detract from essential face-to-face interactions and collaborative activities. Their research underscores the importance of teacher facilitation in integrating AR tools effectively so that these technologies complement rather than replace traditional methods.

Ali et al. (2024) further emphasize blending digital and traditional approaches to mitigate the risks of overuse and distraction. Their study identifies the need for structured, guided use of mobile learning tools to prevent technostress and maintain focus on educational objectives. Similarly, Dore and Dynia (2020) suggest that teacher-supported contexts foster greater student engagement and collaborative learning compared to unstructured applications, while Stockwell and Wang (2024) argue that thoughtfully integrated mobile technologies can expand learner autonomy without sacrificing the strengths of traditional pedagogical practices.

The importance of balancing these methods is also supported by Vasalou et al. (2022), who observe that teachers often reappropriate digital tools to broaden their applications beyond original designs. By embedding digital resources within traditional pedagogical frameworks, educators can create richer, more diverse learning experiences that address different learner needs. Barham and Clarke (2022) further demonstrate that the effectiveness of mobile dictionary apps is enhanced when combined with teacher guidance and integration into classroom activities.

Collectively, these studies highlight the need for a nuanced approach to integrating digital and traditional methods. By leveraging the strengths of both, educators can create interactive, engaging learning environments that support the holistic development of young language learners. A key challenge for educators is using digital tools to support, rather than disrupt, traditional teaching while maintaining engagement and interaction.

2.5 Innovative Applications and Future Directions

Emerging technologies such as augmented reality (AR), 360° videos, and seamless learning systems are transforming language teaching and learning. Hu et al. (2022) explore the use of AR in language classrooms, demonstrating its ability to create immersive, interactive experiences that enhance cognitive and linguistic engagement. For example, AR tools can simulate real-world scenarios, allowing students to practice language skills in rich contextual settings. However, challenges remain regarding the technical infrastructure and teacher training required for effective AR implementation.

Lan and Tam (2023) investigate 360° videos in second-language (L2) learning, showing that these videos foster greater engagement and cultural understanding. Their findings indicate

improvements in listening comprehension and vocabulary retention, though they caution that excessive use may lead to cognitive overload if not carefully scaffolded.

Wen et al. (2024) introduce seamless learning systems that integrate digital tools and platforms to provide continuous learning experiences across various settings. This approach enables smooth transitions between formal and informal learning contexts, enhancing students' ability to apply language skills in diverse situations. However, gaps remain in assessing the long-term efficacy of these systems and ensuring their accessibility for younger learners.

In addition to these innovations, research suggests that the effectiveness of emerging tools can be enhanced when they are integrated with traditional teaching methods and supported by robust teacher guidance (Kelpsiene & Monkeviciene, 2024; Abdelhaq & Diyyab, 2023; Ali et al., 2024). Moreover, recent studies are beginning to examine the rapid adoption of generative AI in language learning. Meniado (2023) notes the potential of ChatGPT to enhance classroom instruction, while Solak (2024) investigates how AI tools provide tailored feedback and content creation, although concerns remain regarding ethical implications and accuracy. Additionally, Wiboolyasarin et al. (2024) highlight the role of chatbots in fostering engagement and offering personalized support in language classrooms.

Despite the promise of these emerging technologies, significant gaps remain in our understanding of their long-term impacts on young language learners. Many studies focus on immediate outcomes such as engagement and comprehension, but few provide longitudinal data to assess developmental effects. Additionally, the scalability and inclusivity of these innovations for diverse educational settings, including under-resourced schools, require further exploration. Laidlaw et al. (2021) caution that media representations of young children's technology use can shape public and educational policies, underscoring the need for nuanced, evidence-based approaches.

Future research should prioritize investigating the scalability, inclusivity, and long-term impacts of these emerging tools, while considering how best to integrate them with traditional methods to create more dynamic and effective language learning experiences.

2.6 Concluding Remarks

The literature demonstrates that technology has a profound impact on language learning. Digital tools offer substantial benefits, including enhanced cognitive engagement, personalized instruction, and interactive learning experiences. At the same time, challenges such as excessive screen time, reduced meaningful interaction, and technostress among both learners and educators persist.

Despite promising innovations like augmented reality, 360° videos, and seamless learning systems, significant gaps remain. In particular, there is a notable lack of longitudinal studies assessing how sustained technology use affects language acquisition, social interaction, and cognitive development over time. Moreover, current research often focuses on older learners, leaving early childhood classrooms underrepresented. Equally important is the need to ensure that these technological advances are scalable and accessible across diverse and under-resourced educational settings.

Future research should focus on optimizing digital tool integration within established pedagogical frameworks to support rather than replace core language learning processes. Effective teacher guidance and targeted professional development, along with strategies to mitigate technostress, are critical for ensuring that technology complements established practices rather than replacing them.

In summary, while the current literature provides valuable insights into the potential and challenges of technology in language education, addressing these gaps is crucial. Future research should prioritize inclusive, longitudinal studies and the development of balanced pedagogical approaches to ensure that technology serves as an effective and equitable tool for enhancing language learning experiences.

3. Research Design and Methods

This preliminary study employed a small-scale qualitative approach, using semi-structured conversations with primary school teachers to explore their perspectives on technology use in L2 classrooms. Given the exploratory nature of this research, a small sample was appropriate for gaining in-depth insights while identifying areas for further investigation. The findings from this initial investigation aim to highlight areas for further research and provide a foundational understanding of the challenges and opportunities associated with technology integration in L2 education.

3.1 Participants

The study involved five primary school educators from public and semi-public schools, each from a different institution. These schools varied in terms of technological infrastructure and policies, providing diverse perspectives on technology integration. Their teaching experience ranged from less than a year to over twenty years. Participants were recruited through professional networks using purposive sampling, ensuring they had direct experience in primary L2 classrooms where technology was regularly used.

3.2 Structure of the Conversations

Conversations were conducted individually and followed a semi-structured format, allowing participants to discuss their experiences openly while addressing key focus areas. They were prompted to reflect on both their classroom observations and their interpretations of these observations. Table 1 outlines the key discussion topics and guiding questions.

Table 1. Key Topics Discussed in the Conversations

Topic	**Questions**
Students' use of technology	How do your students interact with computers, educational apps or other digital tools?
Engagement vs. distraction	How does technology affect your students' engagement and focus on learning tasks?
Social interaction and collaboration	How does technology affect communication and group work among your students? Are there differences between digital and non-digital group activities?
Impact on cognitive and linguistic development	How does technology influence your students' L2 learning, critical thinking and problem-solving skills?
Technology misuse	Do your students misuse technology and, if so, how? How do you monitor and address these issues?
Balancing digital and traditional methods	How often do you integrate non-digital teaching methods (e.g. traditional games, hands-on activities)? How can technology be used effectively?
Teacher reflections on technology use	Overall, do you believe current digital practices benefit your students' learning? What changes, if any, would you like to see?

3.3 Thematic Analysis

The data from the semi-structured conversations were analyzed using thematic analysis. The participants' responses were transcribed and carefully reviewed to gain familiarity with the content. First, transcripts were reviewed to identify key observations, particularly recurring patterns across participants. Initial coding was then conducted, grouping related ideas into provisional themes. As the analysis progressed, codes were refined and merged into broader categories to ensure conceptual clarity. To ensure coherence, themes were compared and refined to accurately reflect the participants' perspectives. Some categories were adjusted to better capture the complexity of educators' views. Finally, the themes were interpreted in relation to existing research, drawing connections between participants' experiences and established findings on technology use in L2 classrooms.

4. Results

This section presents the results from the conversations with five primary school educators teaching in L2 classrooms. The data has been organized into key themes that emerged from the thematic analysis of their experiences and observations.

4.1 Technology Use and Misuse

Teachers described various ways technology is used in L2 classrooms, including computers/laptops, educational apps, and digital storytelling tools. While these tools were intended to support L2 acquisition and engagement, participants observed that they were often misused by students. For instance, students were reported to play games or misuse features such as the camera during instructional time, leading to reduced focus on L2 learning tasks. As one teacher explained, "The laptops were meant to help with language exercises, but half the time, I catch students switching tabs to play games or browse unrelated content. It's a constant struggle to keep them focused."

In addition, one teacher noted that group activities using technology, such as creating presentations, often devolved into students spending excessive time on aesthetic aspects (e.g. slide themes) rather than engaging meaningfully with content. Another teacher observed that students often copied and pasted information from the internet, bypassing opportunities to develop critical thinking and summarization skills.

While misuse was a common concern, some teachers did observe positive instances of technology use. For example, digital tools were effective in engaging students through interactive storytelling and collaborative projects when guided properly.

4.2 Engagement and Distractions

Participants consistently raised concerns about the potential for technology to distract students. One teacher shared an instance where students remained silent while using laptops to play individual games during a class, questioning whether they were truly engaged or simply compliant. "Sometimes, when students are on their Chromebooks, the classroom is silent, but that doesn't mean they're engaged. When I walk around, I realize they're just clicking through activities without absorbing anything."

Moreover, another teacher reported that students frequently opened multiple tabs to cheat during digital assessments, reflecting issues with monitoring and maintaining academic integrity. One participant stated, "I've had students quickly switch tabs when I walk past their desks during a quiz. They're not engaging with the material – just looking for shortcuts."

Despite these challenges, some teachers acknowledged moments of effective engagement, such as when students collaborated on group tasks with a shared digital device. However, such instances were less common and often required significant guidance and structure from the teacher.

4.3 Social Interaction and Language Development

Teachers expressed concerns about the impact of technology on social interaction in the classroom. They observed that excessive screen time during lessons reduced opportunities for peer-to-peer communication, which is vital for language development. One teacher remarked that the shift to in-class writing tasks was a necessary response to students using AI tools like ChatGPT to complete assignments at home, highlighting the tension between technological convenience and language skill development. The teacher stated, “Before, students used to chat with each other while working on tasks. Now, with computers, they’re more likely to be staring at their screens in silence rather than practicing language skills with their classmates.”

However, participants also noted instances where technology facilitated collaborative learning, such as group projects or interactive games designed to reinforce grammar and vocabulary. Teachers emphasized the importance of balancing these activities with traditional, non-digital methods to ensure a holistic language learning experience.

4.4 Perceived Impact of Technology Overuse

Participants highlighted the risks associated with the overuse of technology in L2 classrooms. One teacher, who had previously taught at university level, noted worrying parallels between primary and university students' technology habits: “I see kids in my class zoning out in front of their screens, and it makes me wonder—are we setting them up for the same issues we see with university students who can’t concentrate without checking their devices?”

Another teacher expressed concerns about the amount of screen time students were exposed to both at home and in school, questioning the alignment of classroom practices with global screen time recommendations. The teacher stated, “They’re on screens at home, on screens at school, and then on screens again for homework. At what point do we step back and reassess whether this is actually benefiting them?”

Teachers advocated for a more balanced use of digital tools and the reintroduction of hands-on activities and traditional language games, such as Taboo, which they found equally engaging and effective in fostering language practice.

4.5 Concluding Remarks

In summary, educators highlighted the need for a structured and balanced integration of technology in primary L2 classrooms. While educators recognized technology’s potential, their experiences emphasized the need for clear pedagogical strategies to prevent misuse and ensure meaningful engagement. The findings reinforce the urgent need for further research on structured, balanced approaches to technology use in L2 classrooms.

5. Discussion

These findings show the need for a deeper examination of technology’s role in L2 classrooms, particularly in the post-pandemic context. While digital tools can enhance instruction, teachers reported that their unstructured use often disrupts student interaction and classroom management. Educators expressed concerns about over-reliance on digital tools, citing

potential drawbacks such as reduced student engagement, diminished social interaction, and challenges in maintaining classroom discipline. These observations are consistent with existing literature suggesting that excessive screen time can negatively affect attention span and language development.

This section examines the findings from the conversations with five primary school teachers, addressing the research questions and considering how they relate to the broader literature.

5.1 Perceptions of Technology's Impact on L2 Learning

In response to the first research question ("How do primary school teachers perceive the impact of technology on students' L2 learning outcomes and classroom engagement?"), teachers reported significant concerns about digital tool misuse, which aligns with previous studies on excessive screen time and passive engagement (Gottschalk, 2019; Ponti, 2023). While earlier research discusses the potential of technology to personalize learning, this study shows that without structured guidance, students frequently misuse digital tools (e.g., gaming, passive consumption, AI-generated work), which limits meaningful engagement. The teachers' reports suggest that a lack of digital literacy instruction may contribute to misuse. Future research should explore classroom management strategies that help educators encourage productive technology use rather than rely on outright restrictions.

5.2 Balancing Technology with Traditional Methods

As regards the second research question ("What are the potential strategies for balancing technology use with traditional teaching methods to optimize L2 learning experiences in primary school language classrooms?"), educators in this study supported a more thoughtful integration of digital tools, echoing the recommendations of Abdelhaq and Diyyab (2023) and Dore and Dynia (2020) for balanced approaches. The emphasis on reducing screen time and incorporating hands-on activities shows the need for structured, blended learning approaches that maintain meaningful student interaction.

5.3 Reflections on the Literature

These findings align with previous research discussing both the risks and benefits of classroom technology. Educators' concerns about digital distractions are consistent with Gottschalk (2019) and Huang et al. (2024). However, research still lacks practical strategies for helping teachers integrate technology in ways that encourage collaboration and group work (Barham & Clarke, 2022; Rodríguez-Arce, 2023).

Additionally, while studies such as Kelpsiene and Monkeviciene (2024) focus on the cognitive benefits of emerging technologies like AR, teachers in this study pointed to more immediate concerns: managing existing tools such as computers and laptops remains an ongoing challenge in many classrooms. Kelly (2021) notes that learner autonomy and motivation are critical components of effective L2 learning and shows how technology can be used to allow students to take more ownership of the learning process. By keeping these principles in mind, educators can ensure that digital tools work alongside traditional methods and support broader educational goals.

5.4 Limitations

This study's findings are based on conversations with a small group of teachers, which affects generalizability. However, qualitative research is valuable for capturing in-depth perspectives,

and these exploratory findings provide a basis for future large-scale studies. Additionally, the qualitative nature of the study means that the findings reflect subjective experiences rather than objective measurements. Future research should expand the sample size and include observational data to confirm and extend the insights gained from educators.

5.5 Implications for Practice

Despite these limitations, the findings offer useful insights for educators looking to integrate technology effectively into primary-level L2 classrooms. The following recommendations are based on the findings of this study:

1. *Structuring digital activities to prevent distractions*: Teachers reported that when students worked on guided digital tasks with clear objectives, engagement improved. Assigning specific roles in group projects (e.g. researcher, presenter) helped ensure that technology was used for collaboration rather than passive engagement.
2. *Balancing digital and traditional methods*: Educators emphasized the importance of integrating non-digital games and hands-on activities, such as Taboo and interactive storytelling, alongside technology. This approach avoids over-reliance on screens while keeping students motivated and engaged in language practice.
3. *Providing targeted teacher training*: Teachers noted that many digital distractions could be avoided if educators received more professional development on classroom management strategies for technology use. Training should focus on creating structured digital activities, implementing screen-time policies, and using interactive tools effectively.

6. Conclusion

This study explores the role of technology in primary L2 classrooms, considering both its benefits and challenges. While digital tools can increase engagement, personalize learning, and provide valuable resources for language acquisition, their overuse and mismanagement can lead to distractions, superficial learning, and fewer opportunities for social interaction. These findings reinforce the importance of structuring technology use so that it enhances, rather than replaces, core classroom interactions and traditional teaching approaches.

These preliminary findings suggest that educators are particularly concerned about the impact of technology on cognitive and linguistic development. These concerns are consistent with broader literature that discusses the risks of excessive screen time and the importance of thoughtful implementation of digital tools in classrooms. However, the results also point to the ways in which technology can encourage meaningful collaboration and personalized learning when used appropriately.

6.1 Call to Action and Future Research Directions

Addressing these challenges requires collaboration among researchers, educators, and policymakers to develop research-based strategies for technology integration. Professional development programs should focus on equipping teachers with strategies to integrate technology effectively, manage digital distractions, and foster critical thinking skills in students. Schools must establish clear policies that balance the benefits of digital tools with the need for hands-on, interactive learning experiences.

Future research should prioritize longitudinal studies to assess the long-term impact of technology use on young learners' language development, engagement, and social interaction.

Additionally, studies should explore innovative and accessible strategies for integrating technology into collaborative and interactive classroom practices. By prioritizing these efforts, educators and policymakers can ensure that technology is used as a tool to support L2 learning while also fostering cognitive, social, and linguistic development in young learners.

Acknowledgment

We would like to express our gratitude to the primary school teachers who generously shared their insights into the challenges and opportunities of using technology in the classroom. Their experiences provided valuable perspectives that have inspired this paper.

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