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Technology Integration in Kindergarten ESL Classrooms: Teachers' Experiences, Pedagogical Adaptation, and Well-Being

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Abstract: *The integration of technology has been a major trend in early childhood education, including kindergarten classes that offer instruction for English learners (Els). Malaysia: An exploratory study of ESL teachers' experience in integrating technology in the Malaysian kindergarten classroom. Through a qualitative research design, semi-structured interviews were in-depth conducted with ten kindergarten ESL teachers and were analysis using thematic analysis. The three main themes that emerged from the qualitative analysis of their responses were: Technological Barrier (access and minimal integration), Pedagogical Adaptation, Teacher Well-being. The results showed that despite teachers' ability to identify the potential for technology to enhance students' learning due to increased levels of engagement and more opportunities for exposure to language, they still face challenges such as poor infrastructure, poor internet connectivity, and limited access to appropriate devices that continue limiting their effective implementation. To address these challenges, teachers implement pedagogical strategies that integrate technology and traditional play-based approaches with a focus on developmental appropriateness for young learners. At the same time, there are significant implications for teacher well-being in technology integration. For some teachers, the added demands of technology use lead to changes in workload and stress level, whereas for others, technology is a source of professional motivation and pedagogical creativity. Overall, there is a strong need for improved institutional supports, targeted professionalized development programs and more context-specific technology-related policies to promote sustainable and equitable uses of technology in early childhood ESL classrooms.*

Keywords: Technology integration, ESL teachers, kindergarten education, early childhood education, teacher well-being

1. Introduction

The past decade has witnessed an unprecedented embrace of digital technology in educational settings fueled by climate of technological innovation, the change in learner characteristics and new pedagogical frameworks (Zou et al., 2025; Kanvaria & Yadav, 2024; Bakar, 2021). In the realm of language education, technology is often described as a tool to increase learner engagement, enable real-life exposure to language, and support differentiated instruction (Chapelle, 2020; Lim & Kessler, 2024). Although hundreds of studies have explored technology-enhanced language learning at the primary, secondary and tertiary levels, much

fewer if any research pieces focused on early childhood ESL settings such as kindergarten classrooms.

Kindergarten ESL teaching occupies a unique pedagogical space defined by the short attention spans of young school children, their nascent literacy skills, and their dependence on play-based and multimodal learning opportunities (Awang Ali et al, 2025). Within such contexts, technology integration should be developmentally appropriate and pedagogically purposeful, not simply a byproduct of the availability of various technological tools (Elias et al., 2024). However, integrating digital tools in kindergarten settings poses multiple challenges for ESL teachers, particularly when access to technological resources is uneven (Hasumi & Chiu, 2024). At the national level, education policies in Malaysia have gradually promoted educational technology to facilitate teaching and learning on all educational backgrounds— from early childhood education (Kong, 2022). However, the actualities of technological integration is often ambiguous across institutions, especially between well-resourced and deracialised buildings (Mostert 2023) This forces ESL teachers in kindergarten classrooms to simultaneously attend to this inequity and equity while also being responsive to curriculum expectations as well as the dynamic developmental needs of early learners (Kong, 2022).

Aside from pedagogical aspects, the integration of technology bears significant ramifications on teachers' well-being. Research has shown that while technology can increase teachers' sense of professional efficacy or instructional creativity, it may also lead to a greater workload, stress and emotional exhaustion in the absence of adequate institutional support (Bergdahl et al., 2024). Familiarizing ourselves with teachers lived experiences thus becomes key in scrutinizing the efforts of embedding sustainable and human-centred technology integration in education (Bergdahl et al, 2024).

In view of this, the current study investigates ESL teachers' perspectives on technology integration in kindergarten classrooms in Petaling Jaya, Malaysia. By centering teachers' viewpoints, the study seeks to shed light on pedagogical, infrastructural and emotional aspects behind technology use in early childhood ESL education.

2. Literature Review

As they say, the way how technology is incorporated to early childhood education (ECE) has progressed from a side practice to an expanded use in teaching and learning (Lim et al., 2024). Contemporary perspectives strongly emphasize that technology should serve as a tool that supports play based, exploratory and socially mediated learning instead of taking the place of pedagogical methods (Elias & et al., 2024). When used appropriately, digital tools like interactive whiteboards, educational applications and multimedia resources abstract vocabulary development, phonological awareness and early literacy skills (Neumann, 2018). But doubts remain about prolonged screen time, how developmentally appropriate that content and interaction might be in the context of early years classrooms and whether teachers have what it takes to bring it into ECE settings flavored as they are with child-initiated approaches. Such concerns are particularly important in ESL classrooms where language learning is characterized by high interaction, scaffolding and meaningful communication Ali & Azamri 2023.

2.1 Integrating Technology in ESL Teaching and Language Learning

Technology in ESL education: correlated with higher learner motivation, multimodal (more than one route for input) and more opportunities for authentic language use (Awang Ali,

Sallehuddin & Azley, 2025; Chapelle 2020), it also provides a lot of visual/auditory support which an essential component to ensure understanding while being able to engage young learners further (Sapuan et al., 2025). However, successful integration of technology would result in teachers aligning digital technologies with pedagogical goals and not only treating the technology (Awang Ali, Sallehuddin & Azley, 2025; Ali et al., 2024). Researchers in the field of technology-enhanced language learning (TELL) have, for their part, underscored the mediating role played by teachers who create, modify and contextualise digital resouces according to learners' needs (Lim & Kessler, 2024). In kindergarten ESL contexts, this intermediatory function is further complicated by developmental issues and diverse institutional constraints.

2.2 Barriers to Technology Integration

Various barriers to the integration of technology into education were highlighted in many studies, including lack of infrastructure, access to devices, technical support and professional development opportunities (Brianza et al., 2024). These challenges are exacerbated in numerous early childhood education environments by budget constraints and also conflicting curricular demands. In developing and semi-urban environments, sporadic internet connectivity remains a threat that curtails educators' constant use of online content as part of their teaching (Mphuthi et al. 2025). Consequently, this leads not teachers' intermittent or superficial usage of technology which does not lead to real pedagogic gains.

3. Methodology

A qualitative research design was utilized in this study to investigate the experiences of early childhood ESL (EAL or ELL) teachers with technology integration within the kindergarten classroom. Given their ability to engage the participants' perspectives, practices, and emotional responses in context-sensitive ways it was considered an appropriate qualitative approach. The ten participants were ESL teachers from kindergarten classrooms in Petaling Jaya, Malaysia. The teachers were selected intentionally (purpose sampling) based on their experience in teaching English for young leaners provided they have access of using technology supported teaching. With diverse teaching experience and institutional contexts, the participants provided a rich but targeted sample to highlight themes. Data was collected via several weeks of semi-structured interviews. The interview protocol focused to depict teachers' experiences, challenges, pedagogical strategies and perceptions of well-being in relation to technology integration. Interviews were conducted in English and audio recorded with participants' permission. Qualitative analysis of the interview data was transcribed verbatim and subjected to thematic analysis. Analysis was conducted using a systematic process of familiarisation, coding and generation and refinement of themes. An inductive approach allowed for themes to emerge from the data rather than being forced a priori. For further trustworthiness, coding decisions were reviewed iteratively and themes revisited for internal consistency and alignment with the objectives of the study.

4. Findings and Results

The thematic analysis yielded three major themes: Technological Barriers, Pedagogical Adaptation, and Teacher Well-Being.

4.1 Technological Barriers

Participants consistently reported infrastructural challenges constraining effective technology integration in kindergarten ESL classrooms. These challenges have included the lack of access

to digital devices, aged or non-ideal tools and slow connections. Access to technology resources was often spotty, requiring them to revise lesson plans last minute if high-tech tools weren't cooperating, multiple teachers said. Such infrastructural hurdles tended to disrupt the stream of lessons and undermined teachers' confidence in conducting activities that involved technology. As a result, some of the respondents balked at pushing too hard on digital tools, preferring to keep technology as an accessory rather than a core component of their teaching practice. These findings suggest that technological barriers limit not only the logistical factors of classroom instruction but also teachers' willingness to engage with technology-enhanced pedagogies.

4.2 Pedagogical Adaptation

Despite these limitations regarding technology infrastructure, teachers exhibited a significant degree of pedagogical flexibility in their delivery practices. One participant explained how they had to adopt adaptable strategies for integrating technology in these situations, stating that it should complement rather than replace their traditional approach to teaching. For instance, a few teachers borrowed short educational clips that appeared on YouTube or played animated songs and simple digital games as devices to reinforce vocabulary and pronunciation but continued to focus on hands-on interactive experiences, representing the most common type of play-based learning used in early childhood pedagogy. Teachers' selective and balanced use of technology helped keep young learners engaged while still allowing learning to be interactive and developmentally appropriate. Teachers remarked that technology was most powerful when balanced and carefully linked to lesson goals. In this sense, technology served as an auxiliary pedagogical tool rather than the main catalyst for instruction. The findings demonstrate how teachers negotiated between digital resources and established classroom practices to facilitate augmented opportunities for learning amongst young ESL learners.

4.3 Teacher Well-Being

The implications for teachers' professional well-being in relation to experiencing technology integration were mixed. On one side, many participants talked about technology being a generator of professional incentives and creativity. They were able to design more engaging lessons, work with new instructional approaches and noted higher levels of learner participation as a result of the use of digital resources. Technology became a catalyst for professional development and building enthusiasm for their practice. In contrast, several participants noted that greater integration of technology added extra demands on their time and stress levels. Integrating technology into lessons often meant spending more time searching for appropriate resources, testing digital tools and troubleshooting issues. In contexts where technological support was scarce, teachers experienced greater pressure to troubleshoot technology on their own while also maintaining instructional flows. These contrasting experiences demonstrate the emotional and professional complexity of integrating technology in early childhood ESL euridition. Although digital tools can enhance teaching and learning practices, their successful adoption is conditioned by not only pedagogical preparedness but also sufficient structure in place in terms of institutional support systems and workload expectations.

5. Discussion

The findings highlight the ambivalence between the pedagogical ideal of technology acknowledged in the existing literature and how it was operationalised in kindergarten ESL classrooms. In line with prior research, infrastructural restrictions proved to a major barrier that influence both what and how technology is used in teaching practices (Brianza et al., 2024). Such adaptive strategies speak to a more nuanced understanding of early childhood pedagogy

that embraces technology thoughtfully and selectively rather than indiscriminately. This is in line with sociocultural perspectives of teacher tool use, which emphasize the role teachers play as active mediators who interpret, adapt and contextualise tools for specific learning environments. Thus, the positive and negative effects on teacher well-being suggest that emotional and workload-related conditions need to be at the core when we discuss educational technology. Despite technology's potential to enhance teaching practices, inadequate institutional support can lead the integration of technology into teaching practices to become a burden rather than an academic resource.

6. Conclusion

This study contributes to the growing body of research on technology integration in early childhood ESL education by foregrounding teachers' experiences. While technology offers significant pedagogical potential, its effective and sustainable use depends on adequate resources, institutional support, and attention to teacher well-being. A balanced, context-sensitive approach is essential for fostering meaningful technology integration in kindergarten ESL classrooms.

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Conflict of Interest Statement
The authors declare that there is no conflict of interest regarding the publication of this study.

References

Ali, F.D.A, Idris, R., Zaid, N.N.M., Amir, M.M., Shuhaimi, N.I.M & Mutalib, A. (2024). Revolutionizing ESL Mastery: The Transformative Impact of Blended Learning on Language Proficiency in Selangor, International Journal of Academic Research in Progressive Education and Development, 13 (3), 3034-3050. http://dx.doi.org/10.6007/IJARPED/v13-i3/22394

Ali, F. D. A. & Azamri, N.M. (2023). The Students' Perception of the Implementation of Online Collaborative Learning in ESL Writing Class, Asian Journal of Research in Education and Social Sciences, 5(3). e-ISSN: 2682-8502

Awang Ali, F. D., Muhd Zaimi, F. H., Mohd Bakhri, N. H., Nazri, N. S., Zakaria, N. L., & Handeri, A. Z. (2025). Challenges in phraseology: An ESL study at SPACE UTM. International Journal of Education, Psychology and Counseling, 10(59), 533–543.

Awang Ali, F. D., Sallehuddin, W. I. S. W., & Azley, A. N. (2025). Customizing digital learning through Canva: An analysis. International Journal of Modern Education, 7(26), 550–558.

Bakar, S. (2021). Investigating the dynamics of contemporary pedagogical approaches in higher education through innovations, challenges, and paradigm shifts. Social Science Chronicle, 1(1), 1-19.

Bergdahl, N., Bond, M., Sjöberg, J., Dougherty, M., & Oxley, E. (2024). Unpacking student engagement in higher education learning analytics: a systematic review. International Journal of Educational Technology in Higher Education, 21(1), 63.

Chapelle, C. A. (2016). Teaching culture in introductory foreign language textbooks (p. 37). London: Palgrave Macmillan.

Brianza, E., Schmid, M., Tondeur, J., & Petko, D. (2024). Is contextual knowledge a key component of expertise for teaching with technology? A systematic literature review. Computers and Education Open, 7, 100201.

Elias, B., Hailey, G., Roberta Michnick, G., & Kathy, H. P. (2024). Teaching Human Development Using Human Development: The Science of Learning as a Guide for Future Educators.

Hasumi, T., & Chiu, M. S. (2024). Technology-enhanced language learning in English language education: Performance analysis, core publications, and emerging trends. Cogent Education, 11(1), 2346044.

Kanvaria, V. K., & Yadav, A. (2024). Integrating and innovating: The role of ict in education's evolution-an in-depth analysis of emerging technologies, current trends, challenges, and future directions in the digital age. International Journal for Multidimensional Research Perspectives, 2(2), 33-48.

Kong, K. (2022). Early childhood education in Malaysia. In International Handbook on Education in South East Asia (pp. 1-32). Singapore: Springer Nature Singapore.

Lim, J., & Kessler, M. (2024). Multimodal composing and second language acquisition. Language Teaching, 57(2), 183-202.

Lim, B. Y., Lake, V. E., Beisly, A. H., & Ross-Lightfoot, R. K. (2024). Preservice teachers' TPACK growth after technology integration courses in early childhood education. Early Education and Development, 35(1), 114-131.

Lillelien, K., & Jensen, M. T. (2025). Digital and Digitized Interventions for Teachers' Professional Well-Being: A Systematic Review of Work Engagement and Burnout Using the Job Demands–Resources Theory. Education Sciences, 15(7), 799.

Mostert, F. G. (2024). Empowering Teachers from Marginalised Communities Through Online Professional Development Focussed on ICT Use in Under-Resourced Schools (Master's thesis, University of Johannesburg (South Africa).

Mphuthi, G. T., Ngoveni, M. A., & Mphahlele, R. S. (2025). Navigating the digital divide in open distance and e-learning: perspectives from urban and rural student teachers. Interdisciplinary Journal of Education Research, 7(s1), a15-a15.

Neumann, M. M. (2018). Using tablets and apps to enhance emergent literacy skills in young children. Early Childhood Research Quarterly, 42, 239-246.

Sapuan, N. A., Awang Ali, F. D., Mohamed Musli, A. B., & Idris, R. (2025). Conquering the fear: Navigating second language speaking anxiety among ESL learners in a Selangor private university. International Journal of Research and Innovation in Social Science, 9(3), 5146–5152. https://doi.org/10.47772/IJRISS.2025.903SEDU0371

Zou, Y., Kuek, F., Feng, W., & Cheng, X. (2025, March). Digital learning in the 21st century: trends, challenges, and innovations in technology integration. In Frontiers in Education (Vol. 10, p. 1562391). Frontiers Media SA.