

TECHNOLOGY-MEDIATED LANGUAGE TEACHING: A QUALITATIVE ANALYSIS OF PRACTICES, CHALLENGES, AND PEDAGOGICAL IMPLICATIONS IN EFL CONTEXTS

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Abstrak

Integrasi teknologi digital dalam pengajaran bahasa telah mendorong lahirnya paradigma baru yang dikenal sebagai technology-mediated language teaching (TMLT). Penelitian ini bertujuan untuk menganalisis bagaimana guru EFL mengintegrasikan teknologi dalam praktik pengajaran, mengidentifikasi faktor pendorong dan penghambat implementasi TMLT, serta mengeksplorasi manifestasi agensi guru dalam keputusan pedagogis berbasis teknologi. Menggunakan pendekatan kualitatif dengan desain studi kasus, data dikumpulkan melalui wawancara mendalam, observasi kelas, dan analisis dokumen terhadap dua belas guru EFL di jenjang SMA dan perguruan tinggi di tiga kota di Indonesia. Analisis tematik menghasilkan empat tema utama: (1) agensi guru dalam adopsi teknologi, (2) rekonfigurasi pola interaksi kelas, (3) hambatan institusional dan infrastruktur, serta (4) ketegangan antara affordansi teknologi dan intensionalitas pedagogis. Temuan menunjukkan bahwa efektivitas implementasi TMLT tidak ditentukan oleh kecanggihan teknologi yang digunakan, melainkan oleh kejelasan tujuan pedagogis guru dan kapasitas mereka dalam menegosiasikan konteks institusional yang ada. Penelitian ini berkontribusi pada pengembangan kerangka konseptual TMLT yang berpusat pada agensi guru serta memberikan implikasi praktis bagi pengembangan profesional guru bahasa di Indonesia.

Kata kunci: technology-mediated language teaching, EFL, penelitian kualitatif, pedagogik digital, agensi guru

Abstract

The integration of digital technology in language education has given rise to a new paradigm known as technology-mediated language teaching (TMLT). This study aims to analyze how EFL teachers integrate technology into their instructional practices, identify factors that promote and hinder TMLT implementation, and explore the manifestation of teacher agency in technology-based pedagogical decisions. Employing a qualitative approach with a case study design, data were collected through in-depth interviews, classroom observations, and document analysis involving twelve EFL teachers at secondary and tertiary levels across three cities in Indonesia. Thematic analysis yielded four major themes: (1) teacher agency in technology adoption, (2) the reconfiguration of classroom interaction patterns, (3) institutional and infrastructural constraints, and (4) the tension between technological affordance and pedagogical intentionality. Findings indicate that the effectiveness of TMLT implementation is not determined by the sophistication of the technology used, but rather by the clarity of teachers' pedagogical goals and their capacity to negotiate existing institutional contexts. This study contributes to the development of a teacher-agency-centered conceptual framework for TMLT and provides practical implications for language teacher professional development in Indonesia.

Keywords: technology-mediated language teaching, EFL, qualitative research, digital pedagogy, teacher agency

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1. INTRODUCTION

The unprecedented advancement of digital technology during the last two decades has profoundly transformed various aspects of human life, including communication, business, healthcare, and education. Within the educational sector, technological innovation has not only altered how knowledge is delivered but has also reshaped the fundamental nature of teaching and learning processes. In language education, this transformation has given rise to the concept of Technology-Mediated Language Teaching (TMLT), an instructional paradigm in which digital technologies function as mediational tools that influence interactions among teachers, learners, learning materials, and sociocultural contexts (Kern, 2021; Warschauer & Meskill, 2021). Unlike traditional approaches where technology merely serves as a supplementary aid, TMLT positions technology as an integral component that shapes pedagogical practices, learner engagement, and knowledge construction processes.

The significance of technology integration in language education became particularly evident during the COVID-19 pandemic. The global health crisis forced educational institutions worldwide to shift abruptly from face-to-face instruction to remote and online learning environments. This emergency transition highlighted not only the potential of digital technologies to sustain educational continuity but also exposed substantial disparities in technological readiness, digital literacy, and pedagogical competence among educators (Trust & Whalen, 2020; Hodges et al., 2020). Consequently, the post-pandemic era has witnessed intensified discussions regarding the role of technology in fostering effective, inclusive, and sustainable language learning environments. Researchers increasingly argue that successful technology integration requires more than technical proficiency; it necessitates pedagogically informed decision-making and critical reflection on how technology can enhance learning outcomes (Mishra & Koehler, 2006; Kessler, 2018).

In the field of English Language Teaching (ELT), technological innovations have expanded opportunities for authentic communication, collaborative learning, multimodal literacy development, and learner autonomy. Digital tools such as Learning Management Systems (LMS), videoconferencing platforms, mobile-assisted language learning applications, artificial intelligence (AI)-powered writing assistants, and large language model (LLM)-based chatbots have become increasingly prevalent in language classrooms (Godwin-Jones, 2022; Kohnke et al., 2023). These technologies enable learners to access diverse linguistic resources, engage in interactive learning experiences, and receive immediate feedback, thereby creating more dynamic and personalized learning environments. Moreover, emerging technologies such as generative AI have introduced new possibilities for language instruction, including automated feedback, conversational practice, and adaptive learning support (Kasneci et al., 2023).

Within the Indonesian educational context, government initiatives promoting digital transformation have accelerated the adoption of educational technologies across all levels of schooling. Policies associated with digital learning ecosystems, Merdeka Belajar, and educational digitalization programs have encouraged teachers to incorporate various digital platforms into classroom instruction (Kemendikbudristek, 2022). Consequently, English as a Foreign Language (EFL) teachers increasingly utilize platforms such as Google Classroom, Moodle, Microsoft Teams, Quizizz, Kahoot!, Grammarly, and AI-assisted applications to support teaching and learning activities (Lie, 2021; Yulia, 2022). Nevertheless, the effectiveness of such integration remains a matter of concern. Several studies suggest that technology is often employed merely as a replacement for conventional instructional media rather than as a transformative instrument that fundamentally enhances pedagogical practices (Subekti, 2021; Yulia, 2022). This phenomenon reflects a tendency toward technological adoption driven by institutional expectations rather than pedagogical considerations.

Theoretical frameworks such as Technological Pedagogical Content Knowledge (TPACK) emphasize that meaningful technology integration requires teachers to possess an interconnected understanding of technological, pedagogical, and content knowledge domains (Mishra & Koehler, 2006). Similarly, the SAMR model proposed by Puentedura (2014) highlights varying levels of technology integration, ranging from simple substitution to transformational practices that redefine learning experiences. These frameworks suggest that effective TMLT depends not solely on technological availability but also on teachers' capacity to align technology use with instructional goals and learner needs.

Despite the growing body of literature concerning technology integration in language education, several important gaps remain. First, existing research has predominantly focused on students' perceptions, learning outcomes, and technology acceptance, while the perspectives of teachers as key agents of instructional change have received comparatively less scholarly attention (Blin & Munro, 2021; Hubbard, 2022). Since teachers are the primary decision-makers regarding instructional design and technology implementation, understanding their experiences is crucial for developing sustainable technology-enhanced learning environments.

Second, studies examining TMLT within Indonesian EFL contexts remain relatively limited. Existing investigations are often quantitative in nature and primarily concentrate on measuring attitudes, technology acceptance, or academic achievement (Lie, 2021; Subekti, 2021). Although such studies provide valuable insights, they may not adequately capture the complexity of teachers' lived experiences, contextual challenges, and pedagogical reasoning processes. Qualitative inquiry is therefore needed to uncover how teachers interpret, negotiate, and enact technology-mediated teaching practices within diverse educational settings.

Third, the issue of teacher agency in technology integration remains underexplored. Teacher agency refers to teachers' capacity to make informed decisions, exercise professional judgment, and act purposefully within specific institutional and sociocultural contexts (Priestley et al., 2015). In technology-mediated environments, teachers frequently encounter competing demands involving curriculum requirements, institutional policies, technological constraints, and personal pedagogical beliefs. Understanding how teachers navigate these tensions is essential for explaining variations in technology adoption and instructional innovation. Recent studies have emphasized that successful technology integration is influenced not only by external factors such as infrastructure and training but also by teachers' beliefs, identities, motivations, and professional autonomy (Borg, 2018; Tao & Gao, 2021).

Furthermore, the rapid emergence of artificial intelligence in education has introduced additional complexities to teachers' professional roles. While AI technologies offer significant opportunities for enhancing language instruction, they also raise concerns related to academic integrity, teacher authority, assessment validity, and ethical technology use (Kasneci et al., 2023; Tlili et al., 2023). Consequently, investigating teachers' perspectives on technology-mediated language teaching has become increasingly important in understanding how educators adapt to evolving technological landscapes.

Based on these considerations, the present study seeks to explore the implementation of Technology-Mediated Language Teaching among EFL teachers in Indonesia. Specifically, the study aims to: (1) examine how EFL teachers integrate digital technologies into their everyday instructional practices; (2) identify factors that facilitate and hinder the implementation of technology-mediated language teaching; and (3) investigate how teacher agency is manifested in technology-related pedagogical decision-making. By adopting a

qualitative approach that foregrounds teachers' voices and experiences, this study is expected to contribute both theoretically and practically to the growing discourse on technology-enhanced language education. The findings may provide valuable insights for policymakers, teacher educators, school leaders, and language practitioners in designing professional development initiatives and educational policies that support meaningful, context-sensitive, and sustainable technology integration in EFL instruction.

2. METHOD

Research Design

This study employs a qualitative approach with a case study design, focusing on an in-depth exploration of TMLT phenomena in Indonesian EFL contexts. The selection of qualitative methodology is grounded in ontological and epistemological assumptions that instructional practices are inherently contextual, interpretive, and value-laden dimensions that cannot be adequately captured through quantitative measurement (Creswell & Poth, 2022). The overarching paradigm is social interpretivism, which regards meaning as a co-construction between researcher and participants.

Participants and Data Sources

The study involved twelve (12) EFL teachers selected through purposive sampling based on the following criteria: (1) a minimum of three years of teaching experience; (2) active use of technology in instruction; and (3) willingness to engage in an intensive research process. Participants comprised six teachers at the secondary level (SMA/SMK) and six at the tertiary level, drawn from three cities in Indonesia Jakarta, Yogyakarta, and Makassar to ensure adequate contextual variation. All participant names were anonymized using pseudonyms to protect confidentiality.

Data Collection

Data were collected through three complementary methods (methodological triangulation). First, in-depth semi-structured interviews were conducted twice with each participant: the first session (60–90 minutes) focused on teaching history and philosophy, while the second (45–60 minutes) focused on reflection on specific TMLT practices. Second, classroom observations were conducted between two and four sessions per participant, either directly or via video recording with participant consent. Third, document analysis encompassed lesson plans, digital modules, and instructional materials used by participants.

Data Analysis

Data were analyzed using thematic analysis as formulated by Braun and Clarke (2021) through six stages: (1) familiarization with data through repeated reading of interview transcripts and field notes; (2) initial inductive coding; (3) theme searching from identified codes; (4) theme reviewing and refinement; (5) theme definition and naming; and (6) analytic report writing. The analysis was supported by NVivo 12 software for data management and visualization. To ensure trustworthiness, the study employed member checking, peer debriefing, and thick description as advocated by Lincoln and Guba (1985) and reaffirmed by Nowell et al. (2021).

3. RESULT AND DISCUSSION

Result

The thematic analysis of interview transcripts, observation field notes, and document data yielded four major themes that collectively characterize how EFL teachers in Indonesia conceptualize, implement, and negotiate technology-mediated language teaching.

The first theme, teacher agency in technology adoption, revealed that participants did not passively respond to digitalization demands but exercised significant agency in selecting and adapting technology. Most teachers reported that decisions to adopt specific platforms were driven by deliberate pedagogical considerations rather than institutional compliance. A secondary school teacher in Yogyakarta (Dian, pseudonym) described choosing Padlet as a collaborative platform not because it was mandated by the school, but because she believed the collective visualization of ideas could stimulate students' creativity in writing. This reflects what Priestley et al. (2021) term ecological agency formed through the interaction of personal disposition, professional experience, and ecological context.

The second theme, reconfiguration of classroom interaction patterns, showed that technology significantly restructured interaction in EFL classrooms, shifting from the conventional IRF (Initiation-Response-Feedback) pattern toward more multipolar, student-centered exchanges. In observed classrooms, the use of platforms such as Mentimeter, Kahoot, and Google Jamboard enabled students not only to respond to teacher questions but also to generate content, evaluate peer contributions, and negotiate meaning collectively. However, the study also identified what might be termed an engagement fallacy where emotional engagement with gamification platforms was mistaken for cognitive engagement in language acquisition (Godwin-Jones, 2021).

The third theme, institutional and infrastructural constraints, identified structural barriers operating at three levels: (1) micro (classroom) limited student digital literacy and heterogeneous device access; (2) meso (institution) insufficient technical support, inadequate ongoing training programs, and exam-driven curriculum pressure; and (3) macro (system) uneven digital infrastructure across regions and inconsistent educational technology policies. These findings confirm and extend the barrier typology of Ertmer et al. (2021), adding what may be called relational barriers arising from misalignment between institutional expectations, teacher capacity, and student needs.

The fourth theme, tension between technological affordance and pedagogical intentionality, represents the most original contribution of this study. Drawing on Gibson's (1979) concept of affordance defined as the potential for action offered by an object to an interacting actor the study found that not all technological affordances were pedagogically actualized. More frequently, teachers used technology in ways that understated its potential. However, in more inspiring cases, teachers successfully leveraged technological affordances to create genuinely transformative learning spaces: one teacher in Jakarta (Maya, pseudonym) organized an English-language podcast project subsequently published to a global community, generating an authentic communicative context impossible in conventional instruction (Selwyn, 2022; Thorne & Reinhardt, 2021).

Discussion

The findings of this study highlight the central role of teacher agency as a mediating variable in TMLT implementation. Rather than treating technology as a deterministic force that reshapes teaching, this study demonstrates that teachers actively negotiate the

affordances of digital tools against their pedagogical convictions and contextual realities. This aligns with Priestley et al. (2021), who argue that teacher agency is not simply an individual attribute but an ecological achievement, produced through the interplay of professional experience, institutional context, and future-oriented goals.

The engagement fallacy identified in the second theme warrants particular attention. Several scholars have cautioned against conflating student enthusiasm for digital platforms with productive language learning (Godwin-Jones, 2021; Reinhardt, 2022). The present study provides empirical grounding for this concern in an Indonesian EFL context, suggesting that professional development programs must help teachers develop the ability to critically evaluate whether technological engagement translates into meaningful linguistic gains.

The relational barriers identified in the third theme extend existing literature by highlighting that infrastructure provision and technical training the typical targets of educational technology policy are insufficient without addressing the systemic misalignment between evaluation criteria, instructional innovation, and teacher professional identity. As Selwyn (2022) argues, technology integration in education is fundamentally a social and political process, not a purely technical one.

Finally, the tension between affordance and intentionality underscores the argument that pedagogical intentionality must precede and frame technological affordance. The most effective TMLT practitioners in this study were not those with the most sophisticated technological access, but those with the clearest pedagogical vision—teachers who could articulate a precise answer to the question: why this technology, for what learning purpose, and how will it concretely serve students' language development needs? This finding resonates with Mishra and Koehler's (2021) updated TPACK framework, which foregrounds pedagogical reasoning as the foundation for meaningful technology integration.

4. CONCLUSION

This study addressed three research aims and yielded the following conclusions. First, EFL teachers in Indonesia integrate technology through a complex, non-linear process shaped by a combination of personal factors (pedagogical beliefs, digital literacy), institutional factors (school support, curriculum policy), and contextual factors (infrastructure, student characteristics). The most effective integration occurred when teachers had clarity about their pedagogical goals prior to selecting the technology to be used.

Second, the primary drivers of optimal TMLT implementation included strong teacher agency, consistent institutional support, and a professional community conducive to sharing practice. Conversely, the most significant barriers were not technical but pedagogical and systemic including the absence of adequate conceptual frameworks about the relationship between technology and language learning, and an evaluation system that has yet to accommodate technology-based instructional innovation.

Third, teacher agency in the context of TMLT manifests in the capacity to adapt, experiment, and make deliberate pedagogical decisions amid contextual constraints. The most effective teachers in this study were not those with the greatest technological access but those with the strongest pedagogical clarity. Practical implications include: (1) the need for professional development centered on pedagogical reasoning rather than technical training alone; (2) reform of teacher evaluation systems to accommodate technology-based experimentation; and (3) the establishment of communities of practice among EFL teachers as venues for shared experience and collective reflection. Future research should employ

longitudinal designs to trace the evolution of teachers' TMLT practices over time, and comparative cross-context studies to identify both universal and context-specific patterns.

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