Technology's Impact on the Learning Process: Preservice EFL Teachers' Perception

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Abstract

This work examines how digital tools, online resources, and emerging technologies, such as artificial intelligence, influence on English language acquisition from both learner and future educator perspectives. This qualitative study, developed at the largest state public university in southeast Mexico, adopted a small-scale exploratory approach using a focus group discussion with 22 preservice EFL teachers who participated voluntarily. The participants recognized significant advantages in accessibility and abundant resources (e.g., TikTok educational content and YouTube videos, etc.), and engagement through interactive formats. However, they emphasized substantial limitations in developing speaking fluency, contextual interaction, and affective dimensions, such as empathy and emotional support. Key concerns included distractions in online and hybrid settings, challenges in verifying student effort, and the overuse of tools that lack human judgment. As future teachers, participants discussed the evolving role of educators, shifting from information providers to facilitators, and advocated for the balanced and well-prepared integration of technology. Findings align with broader trends in EFL teacher education to foster digital literacy and human-centered pedagogy. The results may provide beneficial insights for teacher educators, curriculum designers and decision-makers.

Keywords: *Language learning, technology integration, English as a Foreign Language, preservice EFL teachers.*

1. Introduction

For more than two decades, professional training and labour markets have experienced constant disruption due to globalisation, the dominance of English as a *lingua franca* and rapid technological advancement (ETS, 2026; OECD, 2025). Consequently, educational institutions have been compelled to adapt to these trends where English language proficiency (ELP) is no longer a privilege but a fundamental necessity. In Mexico, as in the rest of Hispanoamerica, English as a Foreign Language (EFL) plays a pivotal role in preparing students for success in an international global market (Cronquist & Fiszbein, 2017). Just like in higher education worldwide, technological disruption has forced universities to transform educational practices by incorporating technology in the teaching and learning process (UNESCO, 2025; OECD, 2025), particularly in the EFL field.

Digital platforms, applications, social media content and artificial intelligence have created new opportunities (and challenges) for accessing unlimited resources, providing teachers and learners with instant access to materials, immediate feedback and practice opportunities (Al-Senafi et al., 2024). However, in the context of EFL programmes, the implementation of these tools raises questions about their effectiveness, equity, and the preservation of essential human elements in the learning process, such as interpersonal interaction, emotional support, and authentic communication (Omidvar & Meihami, 2025).

The Autonomous University of Yucatán (UADY by its Spanish initials), the largest public state university in south-eastern Mexico, offers an undergraduate programme to prepare EFL teachers (Zumarraga-Avila et al., 2024). As future educators, their perceptions of how technology impacts language learning and teaching can engender critical reflections in the Mexican higher education system, especially in the southeastern context, which is increasingly influenced by globalisation (Despagne, 2018).

2. Theoretical Framework

The present study is situated within the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006), which posits that effective technology integration in teaching is predicated upon the dynamic interplay of technological, pedagogical, and content knowledge. Within the domain of EFL teacher training, TPACK emphasises the necessity for preservice teachers to cultivate

competencies that enable them to utilise digital tools not merely as supplementary components, but as transformative elements that facilitate language acquisition while addressing contextual realities in regions such as southeastern Mexico. This framework is of particular relevance to the UADY Bachelor's degree programme in English Language Teaching, in which future educators navigate global demands for English proficiency amid varying levels of technological access. Complementary to TPACK, the Technology Acceptance Model (TAM) (Davis, 1989) explains user adoption of digital tools through perceived usefulness and ease of use, offering insights into preservice teachers' attitudes toward AI and other emerging technologies in language learning.

Empirical literature highlights the substantial advantages of technology in language acquisition, including personalised learning pathways, immediate feedback, and expanded access to authentic materials. AI-driven applications enable adaptive practice tailored to individual proficiency levels, fostering learner autonomy and motivation through interactive simulations and real-time corrections that traditional classrooms often cannot provide at scale (Dai, 2024; Eliott, 2023). In the context of EFL, the integration of smartphones and mobile technology with digital platforms has been shown to promote immersive exposure to English as a lingua franca. This development has the potential to transcend geographical boundaries, which are often a significant challenge in Hispanic settings, and to facilitate the development of skills that are aligned with the demands of the global labour market (Cronquist & Fiszbein, 2017). These affordances align with the study's first research question by demonstrating how technology can democratise resources and accelerate acquisition, particularly for preservice teachers envisioning their future roles in resource-constrained environments.

Despite these benefits, there are notable disadvantages, including equity gaps, overreliance on tools and the potential erosion of human interaction. In Mexico and other Latin American countries, disparities in digital infrastructure can exacerbate existing inequalities by limiting access for students in the south-east of the country, for example, and raising concerns about the digital divide (Despagne, 2018). Moreover, overreliance on AI could reduce opportunities for authentic communication, emotional engagement and cultural awareness, all of which are vital for language proficiency. This could result in superficial learning and diminished interpersonal skills (Omidvar & Meihami, 2025). These challenges inform the study's exploration of pre-service EFL teachers' perceptions, emphasising the need to balance technological mediation with pedagogical practices that preserve the core human elements of teaching and learning.

Technological mediation is having a profound impact on the role of EFL teachers, transforming them from traditional knowledge transmitters into facilitators, curators and mentors in hybrid environments. Pre-service teachers recognise that this evolution requires enhanced digital literacy and adaptive strategies to effectively integrate tools while providing emotional support and encouraging critical reflection (Karataş, 2024; Lu, 2025). In technology-rich settings, educators must address AI-generated content, promote digital citizenship, and design experiences that foster 21st century competencies such as collaboration and creativity. Examining this transformation through the study's second research question positions teachers as pivotal agents in mitigating challenges such as algorithmic bias and reduced spontaneity. This ensures that technology enhances, rather than supplants, human connection in EFL education.

Together, these theoretical and empirical perspectives offer a comprehensive approach to investigating pre-service EFL teachers at UADY. By centring their voices, the study sheds light on how technology integration can equitably support language acquisition and professional development in an increasingly globalised and technology-driven landscape. It also advocates for teacher training that strengthens TPACK competencies and critical awareness. This foundation enables a nuanced analysis of the advantages and disadvantages of technology integration, as well as the evolving roles of educators in Mexico's higher education context.

3. Objectives and Research Questions

In view of the paucity of evidence regarding the impact of technology on educational processes in the context of EFL teacher training, the present study aims to explore preservice EFL teachers' perceptions of technology's impact on the English language learning process, with emphasis on both learner experiences and future educator roles. The study seeks to identify the perceived advantages and disadvantages of digital tools, online resources, and emerging technologies (including AI) in English

language acquisition, and to understand preservice EFL teachers' views regarding the evolving role of educators in environments mediated by technology. In the pursuit of these objectives, these two questions were addressed.

1. What advantages and disadvantages does using technology have on language acquisition?
2. In what ways is the role of EFL teachers affected by technological mediation?

4. Method

The present study adopted a qualitative exploratory approach that allowed for the discovery of participants' lived experiences and viewpoints. This design was considered appropriate on account of the fact that it facilitates an in-depth exploration of the perceptions, beliefs, and reflections of pre-service teachers amid a context in which evidence remains limited.

4.1. Participants

The population of the research comprised people enrolled in the Bachelor's degree programme in English Language Teaching (LEII) at UADY, which currently has 140 students. Participants were selected using convenience sampling (Martínez-Salgado, 2012), which resulted in twenty-two junior students, who included three men and nineteen women, aged between 19 and 24 years old, who were not employed at the time of the study. They agreed to participate voluntarily. Whilst this methodological approach may compromise the generalisability of the findings, it proved to be an effective and practical solution for exploratory purposes, facilitating the collection of narratives within the research context.

4.2. Data Collection and Analysis

Data were collected through an open interview during a face-to-face focus group session. The discussion centred on four major topics: (1) resource accessibility; (2) engagement and motivation; (3) skills development and interaction, and (4) teacher role evolution. The session was audio-recorded with participants' permission and subsequently transcribed verbatim for analysis.

The information was analysed thematically, with initial coding, searching, revising and refining of themes (Braun & Clarke, 2021). The analysis was organised according to the study's research questions and focused on identifying patterns related to the advantages, disadvantages and implications of technology use in EFL learning.

Although the findings are specific to junior pre-service teachers at UADY and should not be generalised, they offer valuable insights that could inform future research and local teaching practices.

5. Results

5.1 Advantages and Disadvantages of Technology in Language Acquisition

The first research question aimed to identify the advantages and disadvantages of using technology in language acquisition. Participants identified several advantages, but three were highlighted and provided reasons. The following list presents the items in order of frequency.

1. Abundant and diverse research resources (90%). This was identified as the most significant advantage due to the substantial quantity of freely accessible materials. Participants were not concerned about the reliability of the sources, but rather how frequently they used them and whether they were useful for their purposes. Of the 90% of participants who mentioned this advantage, the most commonly digital tools were:
   - TikTok (45%) – useful for learning contextual phrases and everyday language, with short, replayable videos.
   - YouTube videos (30%) – offer a wide variety of educational material, enabling them to learn new skills and expand their knowledge.
   - Duoling (20%) – effective for vocabulary acquisition and self-learning.
   - Kahoot! and Google Translate (15%) – interactive way to practise vocabulary and offer a more engaging learning experience.

2. Engagement and motivation (60%). In this matter, twelve participants praised the dynamic, visually appealing and concise nature of digital content, noting that it helps maintain attention better than traditional lectures and allows repeated viewing at the learner's own pace.

3. Accessibility (32%). Some participants said that online resources and classes are very helpful for people who live far away or have logistical problems, such as transport issues. Some students spend more than two hours travelling to campus.

On the other hand, participants also pointed out significant disadvantages which are listed according to frequency.

1. Weaknesses in the affective domain. Sixteen students (72%) emphasised that technology and artificial intelligence (AI) lack empathy, emotional support, motivation, and the ability to respond to individual or unexpected student needs.

2. Limitations in speaking fluency and authentic interaction. Fourteen students (63%) stressed that, although apps and artificial intelligence can support initial practice, achieving real fluency and engaging in contextual communication requires face-to-face interaction with teachers and peers. A representative comment was: "*There are other aspects where you need a teacher, such as practising fluency. I think it's better in a classroom with real people*".

3. Distractions. Eleven participants (50%) acknowledged that they (or their classmates) frequently experience distractions during online classes.

4. Assessment and student effort. Eight participants (36%) expressed concern about assessment and distinguishing genuine student work from AI-generated content.

5.2 Ways in which Technology Affects the Role of EFL Teachers

Participants perceived that technological mediation affects the role of EFL teachers. However, they highlighted two main aspects.

1. All twenty-two participants (100%) strongly agreed that technology cannot replace human teachers, emphasizing that educators are essential for providing empathy, motivation, emotional support, and the ability to handle complex classroom situations and individual student needs. As one participant summarised, "*AI is not going to replace teaching, it's not capable of doing everything that a teacher can do".*

2. Fifteen participants (68%) noted a clear shift from the traditional role of information provider to that of facilitator and guide, since students can now access amounts of information instantly through digital tools and applications.

Despite these two affectations, eighteen participants (81%) advocated for a balanced and well-prepared integration of technology, recommending the combination of digital tools with sustained face-to-face interaction and the need for proper teacher training to maximise benefits while preserving the human element of education.

6. Discussion

The findings of this study were revealing in that the participants recognised both the advantages and disadvantages of incorporating technology into the process of learning EFL in a balanced manner. It was also interesting to note that their perspective was influenced by the fact that, as future EFL teachers, they were able to put forward objective and realistic views regarding their future teaching practice.

The participants' emphasis on plenty and diverse resources (90%) is consistent with broader trends documented in the literature. Digital tools such as TikTok, YouTube, Duolingo, Kahoot!, and Google Translate offer learners immediate, contextualised, and self-paced input that is frequently inaccessible in traditional classrooms in terms of both quantity and variety (Hendar & Amalia, 2024; Alshraideh,

2021). This accessibility advantage is pertinent in the southeastern Mexican context, where logistical challenges such as long-distance transportation and financial limitations affect physical resource availability (Cronquist & Fiszbein, 2017).

Engagement and motivation benefits (60%) further support the idea that visually appealing, concise, and interactive digital formats can sustain learner attention better than traditional methods. However, the reported disadvantages such as weaknesses in the affective domain (72%) and limitations in speaking fluency and authentic interaction (63%) highlights a critical tension. The participants consistently noted that technology lacks empathy, emotional responsiveness, and the ability to manage unpredictable classroom dynamics. These concerns resonate strongly with studies that underscore the irreplaceable role of human teachers in providing socio-emotional support and fostering genuine communicative competence (Chounta et al., 2022; Omidvar & Meihami, 2025).

The perception that technology cannot replace teachers (100% agreement) and the identified shift from “information provider” to “facilitator” (68%) reflect a maturing understanding of digital transformation in education. This approach aligns with frameworks such as the Teacher Digital Competency model addressed by Falloon (2020) which emphasises that teachers should move beyond merely delivering content towards designing meaningful learning experiences that thoughtfully integrate technology. The fact that 81% of participants advocate balanced integration, combining digital tools with sustained face-to-face interaction, suggests that they are developing the critical digital literacy and pedagogical judgement necessary for effective technology-mediated teaching.

The widely acknowledged barriers were distractions in online settings (50%) and challenges in assessing and verifying student effort (36%), which are consistent with the OECD's (2026) observations on how digital technologies and generative AI can lead to increased cognitive overload, reduced focus, and 'metacognitive laziness' when students rely too heavily on automated tools. This complicates authentic assessment practices. Similarly, UNESCO (2025) highlights threats to academic integrity and the limitations of traditional assessment models in the generative AI era, emphasising the importance of preserving human judgement and meaningful learning interactions amid digital disruption. These issues are particularly relevant in EFL contexts, where the core learning goals are oral production and authentic interaction. Therefore, the findings support calls for hybrid pedagogical models that preserve human-centred elements while making use of technological possibilities.

The study's limitations include the small, convenience sample drawn from a single institution, which restricts generalizability. The focus group format, while fostering interaction, may have encouraged consensus views rather than fully capturing dissenting opinions. Nevertheless, the depth of reflection obtained from these junior preservice teachers offers valuable insider perspectives on an evolving educational landscape in a regional context that is under researched.

7. Conclusion and Recommendations

The study's findings indicate that preservice EFL teachers view technology as a potent yet limited asset in the realm of English language acquisition. Digital tools and AI enhance resource accessibility, engagement, and self-learning, but they are not yet able to develop speaking fluency, authentic interaction, and the affective dimensions essential to effective language learning. Participants unanimously affirm that human teachers remain indispensable and foresee an evolution in the teacher's role toward that of facilitator and guide. They advocate for intentional, balanced integration of technology rather than wholesale substitution.

These findings contribute to the growing body of evidence on technology integration in EFL teacher education, particularly in Hispanoamerica contexts where globalisation and digital disruption intersect with local educational realities. They emphasise the necessity to equip future educators with not only digital competencies but also the critical faculties necessary to uphold the human element in language education.

The following recommendations may prove useful for educators, programme designers, decision-makers and, naturally, for future research.

(1) For teachers and programme designers.

- It is imperative to incorporate comprehensive training on critical digital literacy and AI literacy into the LEII curriculum. This should include practical experience in evaluating and adapting tools such as TikTok, YouTube, and generative AI for educational purposes.
- Design hybrid methodology courses that deliberately combine technology enhanced activities with face-to-face speaking practice and affective support strategies.
- Incorporate modules on the ethical use of AI, academic integrity, and strategies for detecting AI-generated content.

(2) For decision makers at UADY and similar Mexican universities.

- Invest in reliable infrastructure and equitable access to reduce the digital divide that currently prevents students facing logistical barriers from benefiting from technology.
- Promote faculty development programmes focused on blended and hybrid pedagogies that preserve human interaction.
- Establish clear institutional guidelines for technology use in assessment to address concerns about authenticity and verification of effort.

(3) For future research.

- Conduct large-scale, mixed-methods studies across multiple Mexican universities to compare the perceptions of pre-service and in-service EFL teachers.
- Explore the longitudinal impact of specific technology integration models on language proficiency outcomes (especially speaking skills) and learner affect.
- Investigate ways of integrating global digital tools with local Mexican educational values and contexts that are culturally responsive.

By adopting a balanced, human-centred approach to technology integration, teacher education programmes in Mexico and other regions can enhance the preparation of future educators to navigate an increasingly digital yet fundamentally relational profession. The present study lends further support to the notion that technology should serve as an adjunct to, rather than a substitute for, the empathetic and responsive teaching that lies at the heart of effective language education.

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