

Artículo Científico

Necesidades de desarrollo profesional de los docentes de inglés en instituciones públicas de Ecuador: diagnóstico para el diseño de una oferta formativa en la era digital

Professional development needs of English teachers in public institutions in Ecuador: diagnosis for the design of a training offer in the digital age



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DOI / URL: <https://doi.org/10.55813/gaea/rcym/v4/n3/228>

Resumen: El desarrollo profesional continuo de los docentes de inglés en instituciones públicas del Ecuador enfrenta barreras estructurales que limitan el acceso a formación de calidad. Este estudio diagnosticó las necesidades de desarrollo profesional de docentes de inglés en instituciones públicas ecuatorianas para generar evidencia empírica orientada al diseño de una oferta formativa accesible en la era digital. Se empleó un diseño cuantitativo descriptivo transversal con 80 docentes de EFL de 12 provincias, seleccionados por conveniencia. Los datos se recolectaron mediante un cuestionario de 24 ítems vía Microsoft Forms (escala Likert $\alpha = .745$, selección múltiple y pregunta abierta). Los resultados revelan que las principales barreras son el costo económico (50.0%) y la falta de tiempo (40.0%), mientras que la conectividad resultó menos determinante ($M = 2.79$). El 80.0% ya utiliza herramientas de inteligencia artificial (IA), principalmente ChatGPT (85.0%) y Google Gemini (57.5%), aunque de forma informal. El curso más demandado fue planificación microcurricular con tres horas semanales (73.75%), seguido por diseño de materiales imprimibles (68.75%) e IA para materiales visuales (67.5%). El 86.25% manifestó interés en un certificado con aval institucional y el 76.25% requiere acceso fuera del horario escolar. Se concluye que la oferta formativa debe ser gratuita, asincrónica, bidimensional y sensible a los contextos rurales y urbano-marginales.

Palabras clave: EFL; profesionalización; capacitación; inteligencia artificial; Ecuador.



Check for updates

Received: 28/May/2026

Accepted: 24/Jun/2026

Published: 17/Jul/2026

Cita: Gavin-Quinchuela, B. T., Sanaguano-Moreno, A. P., & Guijarro-Paguay, P. R. (2026). Necesidades de desarrollo profesional de los docentes de inglés en instituciones públicas de Ecuador: diagnóstico para el diseño de una oferta formativa en la era digital. *Revista Científica Ciencia Y Método*, 4(3), 173-191. <https://doi.org/10.55813/gaea/rcym/v4/n3/228>

Revista Científica Ciencia y Método (RCyM)

<https://revistacym.com>

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Abstract:

The continuous professional development of English teachers in Ecuadorian public institutions faces structural barriers that limit access to quality training. This study diagnosed the professional development needs of English teachers in Ecuadorian public institutions to generate empirical evidence for the design of an accessible training offer in the digital age. A quantitative, descriptive, cross-sectional design was employed with 80 EFL teachers from 12 provinces, selected by convenience sampling. Data were collected through a 24-item questionnaire via Microsoft Forms (Likert scale $\alpha = .745$, multiple selection, and open-ended question). The results reveal that the main barriers are economic cost (50.0%) and lack of time (40.0%), while connectivity proved less decisive ($M = 2.79$). 80.0% already use artificial intelligence (AI) tools, primarily ChatGPT (85.0%) and Google Gemini (57.5%), though informally. The most demanded course was microcurricular planning within three weekly hours (73.75%), followed by printable materials design (68.75%) and AI for visual materials (67.5%). 86.25% expressed interest in an institutionally endorsed certificate and 76.25% require access outside school hours. It is concluded that the training offer must be free, asynchronous, bidimensional, and responsive to rural and urban-marginal contexts.

Keywords: EFL; professionalization; training; artificial intelligence; Ecuador.

1. Introduction

The COVID-19 pandemic reshaped educational systems worldwide, introducing unprecedented disruptions to teaching practices, curriculum delivery, and teacher professional development (Christ et al., 2024). In the post-pandemic period, English as a Foreign Language (EFL) teachers in public institutions across Latin America have faced a compounded set of challenges that extend well beyond the initial disruptions caused by the health crisis. In Ecuador specifically, the post-pandemic educational landscape has been shaped by a series of structural reforms that have fundamentally altered the conditions under which English is taught in public schools. The reduction of weekly English instruction from five to three hours in Basic Superior and Baccalaureate levels, introduced through Ministerial Agreement MINEDUC-2022-00010-A (Ministerio de Educación del Ecuador, 2022), has severely constrained the time available for language development. The absence of officially provided English textbooks since 2017 (Ecuavisa, 2025), combined with the successive implementation of three different national curricula within less than a decade (García, 2024), has generated an environment of persistent pedagogical uncertainty. These structural conditions have placed EFL teachers in a paradoxical position: increasingly required to meet demanding linguistic outcomes with diminishing instructional time and insufficient pedagogical resources.

Within this context, teacher professional development (TPD) emerges as a critical lever for sustaining and improving EFL teaching quality. However, access to meaningful professional development remains deeply unequal across the Ecuadorian public-school system.

Research conducted in the post-pandemic period has consistently documented that EFL teachers in rural and urban-marginal contexts face structural barriers that prevent them from engaging in continuous professional growth. Molina-Parraga (2026), in a case study of 35 EFL teachers in Chunchi, Chimborazo, identified that the three most frequently reported obstacles to professional development were lack of time (46%), economic constraints (23%), and limited access to training resources and platforms (20%). These findings are consistent with broader evidence from Latin American EFL contexts: Ramos & Aguirre (2018) documented comparable structural limitations for rural English teachers in Colombia, while Christ et al. (2024) confirmed the persistence of these barriers across a 20-country study conducted during and after the pandemic.

In Ecuador, Macías & Villafuerte-Holguín (2023) further documented that the transition to hybrid education exposed critical gaps in teachers' digital competencies, revealing that institutional support for professional development was insufficient to meet the demands of the new pedagogical environment.

The literature on EFL teacher professional development in Latin America reveals a longstanding tension between the acknowledged importance of continuous training and the structural conditions that inhibit it. Buendía and Macías (2019) note that professional development programs in Colombia have historically been fragmented, decontextualized, and disconnected from teachers' daily realities, a pattern that resonates with the Ecuadorian context documented by De Angelis (2026), who found that teacher educators in Ecuador consistently identified the lack of context-sensitive training as a key limitation in the preparation and ongoing development of EFL teachers.

Similarly, González et al. (2002) established early on that EFL teachers actively seek professional development opportunities that address their specific classroom realities rather than generic pedagogical content, a finding that has been reaffirmed across subsequent decades of research (Chaves & Guapacha, 2016; Mora et al., 2014; Viáfara & Largo, 2018). More recently, Infante-Vera (2026) identified emerging digital competencies as a central axis of teacher transformation in the Ecuadorian university context, arguing that EFL teachers who fail to develop these competencies risk becoming pedagogically obsolete in an era increasingly shaped by artificial intelligence and digital tools.

Tamayo et al. (2023) reinforced this perspective by demonstrating that needs analysis-driven program design in which teachers' own priorities inform the structure of training offerings produces significantly more relevant and effective professional development outcomes.

The emergence of artificial intelligence (AI) tools in education has introduced a transformative dimension to the professional development landscape, particularly for teachers who face structural barriers to traditional forms of training. Tools such as ChatGPT, Google Gemini, Canva with AI, Grammarly, and DeepL are increasingly accessible, asynchronous, and low-cost, making them especially relevant for teachers who cite time and economic constraints as their primary barriers to professional growth.

Moorhouse et al. (2023) demonstrated that generative AI tools can meaningfully support teacher autonomy in lesson planning and materials design, reducing preparation time while simultaneously enhancing instructional quality. Lee and Cho (2024) found that EFL teachers who engaged in structured AI-assisted self-directed learning reported measurable gains in both instructional confidence and classroom practice.

Tour and Zadorozhnyy (2023) examined the broader implications of AI integration in teacher professional development, identifying both significant opportunities including personalized, on-demand learning and structural tensions related to institutional readiness and digital equity. Farrokhnia et al. (2024), in a SWOT analysis of ChatGPT's educational implications, argued that the tool's accessibility and versatility position it as a particularly valuable resource in contexts where formal professional development infrastructure is limited.

Despite this growing body of evidence, the integration of AI into EFL teacher training in Latin American public-school contexts remains underexplored, and evidence-based frameworks for designing AI-supported professional development offerings tailored to the specific constraints of these teachers are largely absent from the literature.

This gap is particularly significant given emerging evidence of rapid, informal AI adoption among Ecuadorian EFL teachers. Survey data collected for the present study ($n = 80$, representing 12 provinces) indicate that 80.0% of public school EFL teachers already use AI tools in some capacity: 32.5% use them frequently and 47.5% occasionally. Only 8.75% have attempted to use AI tools without success, and 8.75% report never having used them.

Despite this widespread informal uptake, the same data reveal a paradox: teachers with access to AI tools have adopted them intuitively and without formal training, which raises critical questions about the quality, consistency, and pedagogical intentionality of that usage. This coexistence of spontaneous AI adoption and the absence of structured preparation constitutes what this study terms the digital integration gap in EFL teacher professional development in Ecuador a gap that reflects not a lack of interest or access, but a deficit in purposeful, context-sensitive training that translates tool familiarity into effective pedagogical practice.

Beyond AI competencies, the survey data reveal a broader and more nuanced professional development landscape that challenges any reductive framing of teacher

needs as primarily technological. The most demanded training área identified by 73.75% of respondents ($n = 59$) is microcurricular planning aligned to the current three-hour weekly English instruction constraint (D1). This finding directly echoes the structural challenge documented by Molina-Parraga (2026) confirms that the consequences of the 2022 ministerial reduction remain the most urgent pedagogical priority for EFL teachers at the national level.

Equally significant is the demand for low-tech and no-tech pedagogical resources: courses on printable EFL materials design (C1) and manipulative resources from the local environment (C2) were selected by 55 and 54 respondents respectively (68.75% and 67.5%), reflecting the reality that many institutions particularly in rural areas continue to operate without reliable internet connectivity or digital infrastructure.

Okoye et al. (2023) and Basantes et al. (2022) have documented comparable patterns across Latin American and Ecuadorian higher education contexts, confirming that technological inequity remains a structural barrier that professional development programs must explicitly address rather than assume away.

This multi-dimensional demand spanning AI integration, pedagogical planning, and low-tech resource creation underscores the need for a professional development offer that is simultaneously responsive to the digital era and grounded in the material realities of public-school teaching in Ecuador.

This study responds to this multidimensional demand by conducting a nationwide diagnostic of EFL teacher professional development needs in Ecuadorian public institutions. Unlike previous studies that have addressed technological barriers or pedagogical challenges in isolation, this research integrates both dimensions to produce an evidence-based characterization of what teachers need, what constraints they face, and what modalities and content areas they prioritize for their own professional growth.

Alvarado et al. (2026) have recently called for greater alignment between international educational frameworks and local Ecuadorian realities in EFL contexts a call that this study addresses by grounding its analysis in teachers' self-reported needs rather than externally imposed frameworks.

Specifically, the study addresses three interconnected research questions: (1) What are the primary barriers to professional development faced by EFL teachers in Ecuadorian public institutions? (2) What is the current state of AI tool adoption among these teachers, and how does it relate to their perceived need for formal training? (3) What training areas and course formats do EFL teachers prioritize when given the opportunity to self-select their professional development agenda?

The findings of this study hold both theoretical and practical significance. Theoretically, they contribute to the emerging literature on demand-driven, AI-mediated teacher professional development in low-resource EFL contexts (Farrokhnia et al., 2024; Moorhouse et al., 2023; Tour & Zadorozhnyy, 2023), extending this discussion to the

specific structural realities of public school EFL teaching in Ecuador. Practically, the results directly inform the design of a structured training offer developed. The remainder of this article is organized as follows.

The *Method* section describes the research design, participants, instrument, and analytical procedures. The *Results* section presents findings organized around the three research dimensions. The *Discussion* section interprets these findings in light of existing literature, and the *Conclusions* section outlines implications for policy, practice, and future research.

2. Method

Research Design

This study adopted a quantitative, descriptive, cross-sectional research design. A cross-sectional approach was selected because the study aims to capture a snapshot of EFL teachers' professional development needs, AI tool adoption patterns, and training preferences at a specific point in time, without manipulating variables or tracking changes over time.

The descriptive orientation is appropriate given that the primary objective is to characterize the current state of professional development demand among a nationally distributed population of EFL teachers in Ecuadorian public institutions, rather than to establish causal relationships. This design aligns with established approaches in needs analysis research in EFL teacher education (Buendía & Macías, 2019; Tamayo et al., 2023) and has been widely applied in diagnostic studies of teacher professional development in Latin American contexts (Christ et al., 2024; Molina-Parraga, 2026).

Participants and Sampling Procedure

The study sample comprised 80 EFL teachers currently employed in public educational institutions across Ecuador. Participants were selected through non-probability convenience sampling, facilitated by the distribution of the survey instrument via digital channels primarily WhatsApp teacher networks and email by a contact person with established access to EFL teacher communities across multiple provinces. While non-probability sampling limits statistical generalizability, it is a widely accepted procedure in exploratory and diagnostic research in education, particularly when the goal is to capture diverse professional experiences and needs across a geographically dispersed population.

The final sample represented 12 of Ecuador's 24 provinces, with the highest concentrations in Chimborazo ($n = 32$, 40.0%), Guayas ($n = 13$, 16.25%), and Pichincha ($n = 11$, 13.75%). The remaining nine provinces accounted for the other 30% of responses, ensuring geographic diversity across the Costa, Sierra, and Amazonía regions. Regarding institutional setting, 35.0% of participants ($n = 28$) worked in urban public schools, 32.5% ($n = 26$) in rural public schools, 28.75% ($n = 23$) in mixed public

schools (unidades educativas), and 3.75% ($n = 3$) in urban-marginal institutions. A detailed characterization of the sample is presented in Table 1.

Table 1
Participant Characteristics (N = 80)

Variable	n	%
Institutional setting		
Urban public school	28	35.0
Rural public school	26	32.5
Mixed public school (unidad educativa)	23	28.75
Urban-marginal public school	3	3.75
Teaching level		
Multiple levels simultaneously	23	28.75
EGB Elementary (Grades 2–4)	21	26.25
EGB Middle (Grades 5–7)	14	17.50
EGB Superior (Grades 8–10)	13	16.25
BGU (Years 1–3)	9	11.25
Contract type		
Permanent appointment (nombramiento)	33	41.25
Provisional contract	31	38.75
Other	9	11.25
Civil service contract	7	8.75
Teaching experience		
More than 10 years	27	33.75
Less than 2 years	22	27.50
2 to 5 years	21	26.25
6 to 10 years	10	12.50
English proficiency level (CEFR)		
B2	23	28.75
None	19	23.75
B1	14	17.50
A2	9	11.25
Unknown level	8	10.00
C1	6	7.50
Suficiencia / Other	1	1.25
Weekly hours dedicated to professional development		
1 to 2 hours	40	50.00
3 to 5 hours	24	30.00
More than 5 hours	8	10.00

Variable	n	%
None	8	10.00

Note: Participants were selected through non-probability convenience sampling. Percentages may not sum to 100 due to rounding (Autores, 2026).

Data Collection Instrument

Data were collected using a structured self-report questionnaire administered digitally through Microsoft Forms. The instrument was developed specifically for this study and organized into five thematic sections comprising a total of 24 items (see Table 2). Section 1 collected demographic and contextual information across seven items. Section 2 assessed barriers to professional development through five Likert-scale items and one multiple-selection item.

Section 3 examined current AI tool knowledge and use through three multiple-choice or multiple-selection items and three additional Likert-scale items measuring self-efficacy, perceived utility of AI, and perceived training needs. Section 4 presented a catalogue of 17 potential training courses organized into four thematic categories Category A (AI tools requiring internet), Category B (technology with limited connectivity), Category C (tangible materials without internet), and Category D (professional and pedagogical development) alongside items assessing preferred schedule and interest in a certification option. Section 5 included one open-ended item and one optional contact field. The full instrument structure is summarized in Table 2.

The Likert-scale items in Sections 2 and 3 used a five-point response format ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The internal consistency of the eight Likert items was assessed using Cronbach's alpha, yielding a coefficient of $\alpha = .745$, which exceeds the commonly accepted threshold of .70 for research instruments and indicates adequate reliability for the present study's purposes. Content validity was established through expert review by two specialists in EFL teacher education, who assessed the clarity, relevance, and alignment of each item with the research objectives. Revisions were incorporated based on their feedback prior to instrument deployment.

Table 2
Instrument Structure and Content by Section

Section	Dimension	Content	Format (items)
1	Demographic data	Province, institution type, teaching level, contract, experience, English level, weekly development hours	Multiple choice (7 items)
2	Barriers to professional development	Structural obstacles: time, cost, connectivity, institutional support, technological currency	5-point Likert scale (5 items) + multiple selection (1 item)
3	AI tool knowledge and use	Frequency of AI use, tools known or used, intended uses, self-efficacy, perceived utility, training needs	Multiple choice + multiple selection + 5-point Likert scale (6 items)

Section	Dimension	Content	Format (items)
4	Training preferences course catalogue	Selection of preferred courses from 17-item catalogue (Categories A–D), preferred schedule, certificate interest	Multiple selection + multiple choice (3 items)
5	Open-ended and contact	Specific topic suggestion; optional contact for course notification	Open text (2 items)

Note: The instrument was administered via Microsoft Forms. Section 4 presented a 17-item course catalogue organized into four thematic categories (A–D). $\alpha = .745$ for the eight Likert-scale items across Sections 2 and 3 (Autores, 2026).

Data Collection Procedure

The survey was administered digitally through a publicly accessible Microsoft Forms link, with no login requirement, to facilitate participation across diverse technological contexts. Data collection took place between May 12 and May 22, 2026, a ten-day window that yielded 80 complete responses. The survey link was distributed via WhatsApp teacher groups and email networks by a contact with established access to EFL teacher communities in multiple provinces.

A digital informed consent statement was displayed at the beginning of the survey, clearly explaining the study's purpose, the voluntary nature of participation, the anonymous treatment of all responses, and the exclusive use of data for academic purposes. No incentives were offered for participation. Respondents could withdraw at any point without consequence. All data were treated in strict accordance with ethical standards for educational research.

Data Analysis

Data were exported from Microsoft Forms to Microsoft Excel and subsequently analyzed using Python (version 3.11) with the pandas and numpy libraries for descriptive statistical analysis. Frequencies, percentages, means, and standard deviations were calculated for all closed-response items. For the Likert-scale items, mean scores and standard deviations were computed per item to identify relative levels of agreement and perceived importance across the barrier and AI self-efficacy dimensions. Cronbach's alpha was calculated to assess the internal consistency of the eight-item Likert battery.

For the multiple-selection items including the course catalogue (Section 4) absolute frequencies and percentages were computed for each response option to identify the most and least demanded training areas. Open-ended responses (Section 5) were reviewed descriptively to identify recurring themes, which were used to complement and triangulate the quantitative findings. Results are reported using APA 7 conventions for descriptive statistics, with tables provided for participant characteristics and course demand frequencies.

3. Results

The findings are organized around the three research dimensions established in the introduction: (1) barriers to professional development, (2) AI tool adoption and training needs, and (3) course preferences and certification interest. Results are reported using frequencies, percentages, means, and standard deviations.

3.1 Barriers to Professional Development

When asked to select their primary barriers to accessing professional development from a multiple-choice list, participants most frequently identified economic constraints (n = 40, 50.0%), followed by lack of time (n = 32, 40.0%), lack of awareness of available options (n = 18, 22.5%), lack of institutional support (n = 14, 17.5%), insufficient relevance of available offers for rural contexts (n = 8, 10.0%), limited internet connectivity (n = 6, 7.5%), and no significant barriers (n = 6, 7.5%). Notably, economic constraints ranked above time constraints in direct selection, a finding that diverges from the Likert-scale results and suggests that while both barriers are significant, financial limitations may constitute the most concrete and immediate obstacle when teachers are prompted to identify a single primary cause.

The Likert-scale items in Section 2 further nuanced these findings. Time constraints received the highest mean agreement (M = 3.49, SD = 1.18), with 52.5% of respondents agreeing or strongly agreeing that lack of time is their primary obstacle. Course cost was the second most endorsed barrier (M = 3.38, SD = 1.24), with 55.0% of respondents agreeing or strongly agreeing. Lack of institutional support yielded a moderate mean (M = 3.24, SD = 1.18), with 43.75% expressing agreement. In contrast, internet connectivity (M = 2.79, SD = 1.25) and perceived technological outdatedness (M = 2.84, SD = 1.16) received the lowest endorsement among the Likert items, with responses distributed across all five scale points. Table 3 presents the complete item-level frequency distribution and descriptive statistics for the eight Likert items across Sections 2 and 3.

Table 3
Frequency Distribution and Descriptive Statistics for Likert-Scale Items (N = 80)

Item	TD	D	N	A	TA	M	SD
Section 2 Barriers to professional development							
Lack of time is the main barrier to my professional development	6	9	23	24	18	3.49	1.18
Cost of courses and certifications limits my access to quality training	11	5	20	31	13	3.38	1.24
Internet connectivity in my area hinders online course participation	17	15	22	20	6	2.79	1.25
My institution does not offer relevant continuous training opportunities	10	7	28	24	11	3.24	1.18
I feel outdated regarding technological tools in EFL teaching	13	16	28	17	6	2.84	1.16

Item	TD	D	N	A	TA	M	SD
Section 3 AI self-efficacy and training needs							
I feel confident using digital tools and AI in my lesson preparation	6	4	24	31	15	3.56	1.09
I believe AI can help me prepare better lessons despite limited time	7	3	25	27	18	3.58	1.14
I need specific training on how to use AI to prepare EFL classes	7	4	22	30	17	3.58	1.14

Note: TD = Totally Disagree; D = Disagree; N = Neutral; A = Agree; TA = Totally Agree. Scale: 1–5. $\alpha = .745$ for all eight items combined. Items 1–5 correspond to Section 2 (barriers); Items 6–8 correspond to Section 3 (AI self-efficacy and training needs) (Autores, 2026).

3.2 AI Tool Adoption and Training Needs

A large majority of respondents reported some level of AI tool use in their teaching practice. Specifically, 32.5% ($n = 26$) reported using AI tools frequently, 47.5% ($n = 38$) occasionally, and 11.25% ($n = 9$) had attempted to use them without sufficient success. Only 8.75% ($n = 7$) reported never having used AI tools. Taken together, these figures indicate that 80.0% of the sample has engaged with AI tools at some level, reflecting a significantly higher adoption rate than might be expected in rural and public school contexts.

ChatGPT was by far the most widely known and used tool, identified by 85.0% of respondents ($n = 68$), followed by Google Gemini (57.5%, $n = 46$), Canva with AI (46.25%, $n = 37$), Grammarly (30.0%, $n = 24$), DeepL (11.25%, $n = 9$), and ElevenLabs (3.75%, $n = 3$). Only 6.25% ($n = 5$) indicated familiarity with none of the listed tools. Regarding intended or actual uses of AI in teaching, the most frequently selected purpose was designing visual or audiovisual materials (60.0%, $n = 48$), followed by creating exercises and activities for students (48.75%, $n = 39$), preparing grammar explanations and examples (43.75%, $n = 35$), generating assessments and rubrics (37.5%, $n = 30$), improving teachers' own English (28.75%, $n = 23$), and translating or adapting texts (26.25%, $n = 21$). Only 2.5% ($n = 2$) indicated they would not use AI at all.

Despite the high rate of AI adoption, teachers expressed moderate but clear recognition of the need for formal training. The three AI-related Likert items yielded nearly identical means: self-confidence using digital tools and AI ($M = 3.56$, $SD = 1.09$), belief that AI can improve lessons despite time constraints ($M = 3.58$, $SD = 1.14$), and perceived need for specific AI training ($M = 3.58$, $SD = 1.14$). In all three items, combined agree/strongly agree responses represented the modal tendency (57.5%, 56.25%, and 58.75% respectively), while the presence of a substantial neutral response cluster suggests ambivalence that formal training may help resolve.

3.3 Course Preferences and Certification Interest

Participants were presented with a catalogue of 17 courses organized into four thematic categories and invited to select all courses they would like to take. The overall

demand was high across all categories, with the majority of courses selected by more than 50% of respondents. Table 4 presents the complete frequency distribution by course.

Within Category D (Professional and Pedagogical Development), the course on EFL microcurricular planning with only three weekly hours (D1) emerged as the single most demanded course across the entire catalogue, selected by 73.75% of respondents ($n = 59$). Formative assessment (D2) was selected by 61.25% ($n = 49$), virtual communities of practice (D3) by 50.0% ($n = 40$), and communicative English in multigrade schools (D4) by 40.0% ($n = 32$). Within Category C (Tangible Materials Without Internet), design and printing of EFL didactic materials (C1) was selected by 68.75% ($n = 55$), and manipulative resources from the local environment (C2) by 67.5% ($n = 54$). Within Category A (AI Tools Requiring Internet), the most demanded course was AI for visual and audiovisual materials design (A2, 67.5%, $n = 54$), followed by AI for lesson preparation (A1, 55.0%, $n = 44$), AI for teachers' own language skills (A4, 50.0%, $n = 40$), AI for assessment (A3, 45.0%, $n = 36$), and the introductory AI course (A5, 43.75%, $n = 35$). Within Category B (Technology with Limited Connectivity), offline digital tools (B1) led with 63.75% ($n = 51$), followed by basic technology without internet (B2, 60.0%, $n = 48$), gamification without internet (B3, 55.0%, $n = 44$), and mobile recording (B4, 46.25%, $n = 37$).

Table 4

Course Demand Frequency by Category and Course Code (N = 80)

Code	Course title	n	%
Category A AI Tools (internet required)			
A2	AI for EFL visual and audiovisual materials design	54	67.50
A1	AI for EFL lesson preparation	44	55.00
A4	AI for improving teachers' own linguistic competence	40	50.00
A3	AI for assessment and feedback	36	45.00
A5	Introduction to AI for teachers with no prior experience	35	43.75
Category B Technology with Limited Connectivity			
B1	Offline digital tools for the EFL classroom	51	63.75
B2	Basic technology without internet: projector, phone, whiteboard	48	60.00
B3	Gamification without internet: games and classroom dynamics	44	55.00
B4	Recording audio and video with a mobile phone	37	46.25
Category C Tangible Materials Without Internet			
C1	Design and printing of EFL didactic materials	55	68.75
C2	Manipulative resources from the local environment	54	67.50
C4	Storytelling with physical materials	43	53.75

Code	Course title	n	%
C3	Designing an EFL workbook without a textbook	37	46.25
Category D Professional and Pedagogical Development			
D1	EFL microcurricular planning with only 3 weekly hours	59	73.75
D2	Formative assessment in the EFL classroom	49	61.25
D3	Virtual teacher communities of practice (WhatsApp / Telegram)	40	50.00
D4	Communicative English in multigrade and single-teacher schools	32	40.00

Note: Participants could select multiple courses. Percentages reflect the proportion of respondents who selected each course relative to the total sample (N = 80). Courses are ordered by demand within each category (Autores, 2026).

Regarding preferred access schedule, the largest group indicated a preference for weeknight access after 18:00 (41.25%, n = 33), followed by weekend access (35.0%, n = 28), fully asynchronous access at any time (17.5%, n = 14), and no preference (6.25%, n = 5). Regarding the certification option, 70.0% (n = 56) indicated interest subject to cost, and 16.25% (n = 13) expressed unconditional willingness to pay. Only 11.25% (n = 9) preferred free-access-only participation, and 2.5% (n = 2) expressed no interest in any certificate. Combined, 86.25% showed some level of interest in the certified completion option. Open-ended responses (n = 47 non-blank) reinforced the quantitative findings, with recurrent themes including lesson planning and microcurricular design, creation of didactic resources, gamification, and AI use for audio creation and differentiated instruction.

4. Discussion

This study set out to characterize the professional development needs of EFL teachers in Ecuadorian public institutions, with the dual aim of contributing to the empirical literature on teacher training in low-resource contexts and generating evidence-based data to inform the design of a structured, demand-driven training offer. The findings across the three research dimensions yield several theoretically significant insights that both confirm and extend existing knowledge in the field.

The Hierarchy of Barriers: Economic Constraints as the Primary Obstacle

The results reveal a hierarchy of barriers to professional development that partially diverges from the pattern documented by Molina-Parraga (2026) in their case study of EFL teachers in Chunchi. While their study identified lack of time as the leading barrier (46%), the present national-scale data show that economic constraints rank first in direct selection (50.0%), with time constraints second (40.0%). This shift may reflect the broader socioeconomic diversity of a nationally distributed sample spanning 12 provinces across the Costa, Sierra, and Amazonía regions. Critically, both barriers co-occur and interact: the Likert results confirm that time constraints retain the highest

mean endorsement ($M = 3.49$), while cost is only marginally lower ($M = 3.38$), suggesting that these are not mutually exclusive obstacles but co-occurring structural conditions that any professional development offer must address simultaneously. These findings resonate with Ramos & Aguirre (2018) and Christ et al. (2024), who identified resource scarcity and time pressure as the two most consistent barriers across Latin American EFL contexts.

Two findings diverge from expectations. First, internet connectivity received the lowest Likert endorsement as a barrier ($M = 2.79$), despite the fact that 32.5% of the sample works in rural schools where digital infrastructure is frequently inadequate. This may be explained by widespread smartphone ownership among Ecuadorian teachers, which provides basic internet access even in contexts without institutional connectivity. Second, perceived technological outdatedness also received a low mean ($M = 2.84$), which is noteworthy given that 80.0% of respondents already use AI tools. Together, these results suggest that the digital integration gap identified in this study is not primarily a matter of access or self-perceived obsolescence, but rather a structural deficit in purposeful, pedagogically grounded training a conclusion consistent with Macías & Villafuerte-Holguín (2023), who found that Ecuadorian teachers' digital competencies were often developed through informal, unsupported self-learning.

The Digital Integration Gap: Informal Adoption Without Formal Preparation

The finding that 80.0% of EFL teachers already use AI tools with 32.5% doing so frequently challenges prevailing assumptions about the technological readiness of public school teachers in Ecuador. Okoye et al. (2023) and Basantes-Andrade et al. (2022) have documented widespread digital inequities in Latin American higher education, often framing teachers as technologically resistant or underequipped. The present data suggest a more nuanced picture: teachers are proactively engaging with AI tools in the absence of formal guidance. However, this informal adoption coexists with a clear recognition of its limitations. The convergence of Likert means across the three AI items ($M \approx 3.57$) suggests that teachers simultaneously feel moderately confident in their current AI use, believe in its potential, and recognize that their existing skills are insufficient for systematic pedagogical integration. This three-way tension constitutes precisely the psychological readiness that Moorhouse et al. (2023) identify as the precondition for effective AI-mediated professional development. The finding that the most frequently reported use of AI is designing visual materials (60.0%) further illustrates that current adoption is task-specific and output-oriented. Lee and Cho (2024) and Tour and Zadorozhnyy (2023) have argued that the transition from tool user to reflective AI practitioner is the central challenge of AI-mediated teacher professional development, and the present findings confirm that this challenge is particularly acute in the Ecuadorian context.

Training Priorities: The Persistence of Structural Needs Alongside Digital Demand

Despite the high rate of AI tool adoption, the single most demanded course is pedagogical EFL microcurricular planning with only three weekly hours (D1, 73.75%).

This confirms that the structural consequences of the 2022 ministerial reduction (Ministerio de Educación del Ecuador, 2022) remain the most acutely felt professional challenge, more than four years after the policy was implemented. García (2024) argued that frequent curricular changes without adequate teacher preparation create pedagogical instability; the present data demonstrate that this instability persists and that teachers' demand for support remains unmet. Equally revealing is the high demand for tangible, low-tech materials design: C1 (68.75%) and C2 (67.5%) ranked second and third across the entire catalogue. These findings address the persistent absence of official English textbooks since 2017 (Ecuavisa, 2025). Tamayo et al. (2023) have demonstrated that needs-analysis-driven program design produces more relevant outcomes than decontextualized training; this study operationalizes that principle at national scale.

The juxtaposition of high demand for AI courses (A2, 67.5%; A1, 55.0%) alongside equally high demand for no-tech courses (C1, 68.75%; C2, 67.5%) illustrates the defining characteristic of the Ecuadorian EFL professional development landscape: the coexistence of technological aspiration and material constraint. Teachers need both digital and analogue competencies, and a training offer that focuses exclusively on one domain risks excluding a significant portion of its target population. De Angelis (2026) has argued that effective EFL teacher education in Ecuador must be contextually responsive to the material and institutional conditions that teachers actually inhabit. Regarding certification and access modality, the finding that 86.25% expressed interest in a formally endorsed certificate with 76.25% requiring out-of-school-hours Access provides clear guidance for operational design. Garreta-Domingo et al. (2017) established flexibility as the most critical design parameter for professional development programs targeting in-service teachers; the strong but cost-sensitive certification interest supports the freemium model adopted in this training offer.

Limitations

Several methodological limitations must be acknowledged. First, the use of non-probability convenience sampling restricts statistical generalizability. Although the sample spans 12 provinces, it cannot be considered nationally representative. Second, the instrument relies entirely on self-report data, which are subject to social desirability bias. Third, the geographic distribution was uneven, with Chimborazo accounting for 40.0% of the sample, which may reflect the specific professional networks through which the survey was disseminated. Fourth, the absence of observational or qualitative data limits the depth of insight into how teachers' self-reported AI use translates into actual pedagogical practice. Future research should employ stratified sampling across all 24 provinces and incorporate mixed-methods designs with classroom observation and in-depth interviews.

5. Conclusions

This study set out to diagnose the professional development needs of EFL teachers in Ecuadorian public institutions, with the aim of generating an evidence base for the design of a structured, demand-driven training offer aligned to the conditions of teaching in the digital age. Based on a nationwide survey involving 80 teachers across 12 provinces, the findings carry implications for educational policy, program design, and future research.

Professional development access in Ecuador's public EFL system remains constrained by two co-occurring structural barriers economic cost and time neither of which can be addressed in isolation. The finding that 50.0% of teachers cite cost and 40.0% cite time as primary obstacles, while Likert means confirm the near-equal weight of both ($M = 3.49$ and $M = 3.38$ respectively), points to the need for models that are simultaneously free at the point of access and flexible in delivery. Any training offer that requires upfront payment or mandates synchronous participation is structurally ill-suited to this population. Effective professional development must therefore be free at the point of access and fully asynchronous economic cost and time are co-occurring, mutually reinforcing barriers that standard training models consistently fail to address.

The study also identifies what it terms the digital integration gap: the coexistence of widespread informal AI adoption (80.0% of teachers) with the absence of structured, pedagogically grounded training. Teachers in this sample are not technologically passive; they are active, self-directed adopters of tools such as ChatGPT and Google Gemini. However, their use remains predominantly task-specific and output-oriented rather than reflective or systematically aligned to pedagogical goals. The central challenge, therefore, is not adoption but integration teachers need structured training that elevates tool familiarity into deliberate, pedagogically intentional practice.

Perhaps most significantly, the study demonstrates that EFL teachers' professional development needs in Ecuador are simultaneously digital and analogue. The most demanded course EFL microcurricular planning within three weekly hours (73.75%) is not technology-related but pedagogical, responding directly to the structural consequences of the 2022 instructional time reduction. High demand for printable materials design (68.75%) and manipulative resources (67.5%) confirms that material scarcity remains a daily reality. Professional development in Ecuador must therefore be bidimensional, addressing both digital competencies and analogue pedagogical skills simultaneously, since structural challenges such as reduced instructional time and the absence of textbooks generate training demands that AI literacy alone cannot resolve.

These conclusions carry direct implications for educational policy. The persistent demand for microcurricular planning training indicates that the 2022 instructional time reduction has generated an unmet professional development debt that official channels have not adequately addressed. Policymakers should consider restoring instructional time to pre-2022 levels, requiring that Ministry programs explicitly address current

curricular constraints, and recognizing institutionally endorsed asynchronous training as a legitimate pathway for professional development credit.

Future research should pursue three directions: longitudinal studies tracking pedagogical practices before and after structured AI training; mixed-methods designs incorporating classroom observation and teacher interviews; and investigation of the intersection between AI tools, EFL development, and inclusive education particularly regarding accessibility for teachers with visual impairments, a dimension raised by respondents that remains unexplored.

EFL teachers in Ecuador's public institutions are already adapting and self-directing their growth within severe structural constraints. What they need is not motivation but infrastructure: training that is free, asynchronous, grounded in classroom realities, and recognized through formal credentials.

CONFLICTO DE INTERESES

“Los autores declaran no tener ningún conflicto de intereses”.

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