GENERATIVE AI AS CO-TUTOR: ENHANCING TEACHER ACCOMPANIMENT STRATEGIES IN EFL ONLINE CLASSROOMS
INTELIGENCIA ARTIFICIAL GENERATIVA COMO CO-TUTOR: MEJORANDO LAS ESTRATEGIAS DE ACOMPAÑAMIENTO DOCENTE EN AULAS VIRTUALES DE INGLÉS COMO LENGUA EXTRANJERA

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Resumen

Este estudio examinó la implementación y efectividad de la inteligencia artificial (IA) generativa como co-tutor para mejorar las estrategias de acompañamiento docente en aulas virtuales de inglés como lengua extranjera (EFL) en una universidad pública de Ecuador. La investigación indagó las percepciones docentes, prácticas de implementación, desafíos encontrados y efectos observados en el compromiso estudiantil tras una intervención colaborativa de desarrollo profesional que integró IA en marcos pedagógicos establecidos. Se empleó un diseño de estudio de caso cualitativo con 26 docentes de EFL del Centro de Idiomas de la Universidad Técnica de Babahoyo. La intervención de tres meses (octubre-diciembre 2025) consistió en sesiones de capacitación, talleres colaborativos y desarrollo participativo de estrategias. La recolección de datos incluyó protocolos de reflexión estructurada, cuestionarios exhaustivos con ítems de escala Likert y preguntas abiertas, y artefactos generados por los docentes. El análisis combinó análisis temático de datos cualitativos siguiendo el marco de Braun y Clarke (2006) con análisis estadístico descriptivo de medidas cuantitativas de percepción. Los resultados revelaron percepciones docentes predominantemente positivas sobre la IA como co-tutor, con 96.2% concordando que la IA complementa en lugar de reemplazar la enseñanza humana. Los docentes reportaron mejoras en la confianza estudiantil (65.4%), participación en actividades asincrónicas (73.1%) y calidad de interacciones (73.1%). La retroalimentación de escritura (92.3%), explicación gramatical (88.5%) y apoyo de vocabulario (84.6%). A pesar de los desafíos, 80.8% de los participantes tenían intención de

continuar la implementación de co-tutoría con IA, demostrando fuerte compromiso con la integración sostenida. Esta investigación contribuye evidencia empírica sobre implementación de co-tutoría con IA en un contexto latinoamericano de universidad pública poco estudiado, expandiendo la diversidad geográfica más allá de entornos de investigación predominantemente anglófonos. El estudio avanza marcos teóricos al reconceptualizar el acompañamiento docente en educación en línea como sistema distribuido que combina experticia humana con capacidades computacionales.

Palabras clave: Inteligencia artificial generativa, Co-tutoría, Acompañamiento docente, Educación EFL en línea.

Abstract

This study examined the implementation and effectiveness of generative artificial intelligence (AI) as co-tutor to enhance teacher accompaniment strategies in English as a Foreign Language (EFL) online classrooms at a public university in Ecuador. The research investigated teacher perceptions, implementation practices, challenges encountered, and observed effects on student engagement following a collaborative professional development intervention integrating AI into established pedagogical frameworks. A qualitative case study design was employed with 26 EFL teachers from the Language Center at Universidad Técnica de Babahoyo. The three-month intervention (October-December 2025) consisted of training sessions, collaborative workshops, and participatory strategy development. Data collection included structured reflection prompts, comprehensive questionnaires with Likert-scale and open-ended items, and teacher-generated artifacts. Analysis combined thematic analysis of qualitative data following Braun and Clarke's (2006) framework with descriptive statistical analysis of quantitative perception measures. Results revealed predominantly positive teacher perceptions of AI as co-tutor, with 96.2% agreeing that AI complements rather than replaces human teaching. Teachers reported improvements in student confidence (65.4%), participation in asynchronous activities (73.1%), and quality of interactions (73.1%). Writing feedback (92.3%), grammar explanation (88.5%), and vocabulary support (84.6%). Despite challenges, 80.8% of participants intended to continue AI co-tutoring implementation, demonstrating strong commitment to sustained integration. This research contributes empirical evidence on AI co-tutoring implementation in an understudied Latin American public university context, expanding geographical diversity beyond predominantly Anglophone research settings. The study advances theoretical frameworks by reconceptualizing teacher accompaniment in online education as distributed system combining human expertise with computational capabilities.

Keywords: Generative artificial intelligence, Co-tutoring, Teacher accompaniment, EFL online education.

Sumário

Este estudo examinou a implementação e a eficácia da inteligência artificial (IA) generativa como cotutora para aprimorar as estratégias de apoio ao professor em salas de aula virtuais de inglês como língua estrangeira (EFL) em uma universidade pública no Equador. A pesquisa explorou as percepções dos professores, as práticas de implementação, os desafios encontrados e os efeitos observados no engajamento dos alunos após uma intervenção colaborativa de desenvolvimento profissional que integrou a IA a estruturas pedagógicas estabelecidas. Utilizou-se um estudo de caso qualitativo com 26 professores de inglês como língua estrangeira do Centro de Línguas da Universidade Técnica de Babahoyo. A intervenção, com duração de três meses (outubro a dezembro de 2025), consistiu em sessões de treinamento, oficinas colaborativas e desenvolvimento participativo de estratégias. A coleta de dados incluiu protocolos de reflexão estruturados, questionários abrangentes com itens em escala Likert e questões abertas, além de artefatos gerados pelos professores. A análise combinou

a análise temática dos dados qualitativos, seguindo a estrutura de Braun e Clarke (2006), com a análise estatística descritiva das medidas quantitativas de percepção. Os resultados revelaram percepções predominantemente positivas do corpo docente em relação à IA como cotutora, com 96,2% concordando que a IA complementa, e não substitui, o ensino humano. Os docentes relataram melhorias na confiança dos alunos (65,4%), na participação em atividades assíncronas (73,1%) e na qualidade das interações (73,1%). Também foram relatados feedback sobre a escrita (92,3%), explicações gramaticais (88,5%) e suporte ao vocabulário (84,6%). Apesar dos desafios, 80,8% dos participantes pretendem continuar implementando a cotutoria com IA, demonstrando um forte compromisso com a integração sustentada. Esta pesquisa contribui com evidências empíricas sobre a implementação da cotutoria com IA em um contexto universitário público latino-americano relativamente inexplorado, expandindo a diversidade geográfica para além dos ambientes de pesquisa predominantemente anglófonos. Este estudo avança os referenciais teóricos ao reconceitualizar o apoio ao professor na educação online como um sistema distribuído que combina expertise humana com capacidades computacionais.

Palavras-chave: Inteligência artificial generativa, Cotutoria, Apoio ao professor, Educação de inglês como língua estrangeira online.

Introduction

The advancement of artificial intelligence technologies has developed unprecedented transformations across educational environment, with generative AI emerging as a particularly disruptive force in language learning contexts (Celik, 2023). Within the domain of English as a Foreign Language (EFL) instruction, the integration of AI-powered tools has evolved from peripheral supplementary resources to central pedagogical instruments capable of fundamentally reshaping instructional methodologies and learner engagement patterns (Lara et al., 2023; Sun et al., 2021). This paradigm shift has intensified following the proliferation of online learning environments, where the absence of physical classroom presence and limited real-time instructor availability have created pronounced challenges in maintaining consistent learner support and personalized guidance (Pikhart, 2020). The COVID-19 pandemic accelerated this transition, exposing critical gaps in traditional teacher accompaniment strategies while simultaneously revealing opportunities for technological intervention to enhance pedagogical effectiveness in virtual settings (Popenici & Kerr, 2017).

Generative AI systems, particularly large language models such as ChatGPT, Claude, and specialized educational platforms, possess unique capabilities that align with the multifaceted demands of EFL instruction, including instantaneous feedback provision, adaptive scaffolding, personalized content generation, and sustained learner engagement beyond synchronous class sessions (Nazari et al., 2021). These technological affordances present compelling possibilities for reconceptualizing the instructor's role from sole knowledge provider to orchestrator of AI-enhanced learning ecosystems, wherein generative AI functions as a co-tutor that extends, rather than replaces, human pedagogical expertise (Keezhatta, 2019). However, the theoretical frameworks underpinning effective human-AI collaboration in educational contexts remain nascent, and empirical evidence regarding optimal integration strategies, particularly within EFL online environments, continues to develop (Fahimirad & Kotamjani, 2018).

The concept of teacher accompaniment, deeply rooted in sociocultural learning theories and constructivist pedagogical approaches, emphasizes sustained guidance, emotional support, and adaptive responsiveness to individual learner trajectories throughout the educational process (Zhang & Lin, 2018). In traditional face-to-face EFL contexts, this accompaniment manifests through immediate error correction, contextual explanations, motivational encouragement, and progressive complexity adjustment based on observable learner performance (Fernandez et al., 2013). Online learning modalities, however, introduce temporal and spatial discontinuities that complicate these accompaniment processes, frequently resulting in diminished learner autonomy, increased anxiety, and reduced persistence when confronted with linguistic challenges during asynchronous study periods (Ercan, 2018). Generative AI technologies offer potential solutions to these limitations by providing continuous availability, immediate responsiveness, and individualized support mechanisms that can bridge gaps between synchronous instructional sessions (Zhai & Wibowo, 2023).

Despite the promising potential of generative AI as pedagogical support, critical concerns persist regarding implementation effectiveness, pedagogical alignment, learner autonomy preservation, ethical considerations, and the maintenance of essential human elements in language acquisition processes (Zhai & Wibowo, 2023). Questions emerge regarding optimal task distribution between human instructors and AI systems, the development of learner competencies for effective AI interaction, potential overdependence on automated support systems, accuracy and appropriateness of AI-generated linguistic feedback, and the preservation of sociocultural dimensions essential to communicative language development (Arini et al., 2022). Furthermore, the integration of generative AI within existing pedagogical frameworks necessitates careful consideration of how such tools complement established teaching methodologies, curriculum objectives, and assessment practices without undermining core instructional values or compromising learning outcomes (Salas & Yang, 2022).

This investigation examines the implementation and effectiveness of generative AI as a co-tutoring mechanism within EFL online classrooms, specifically focusing on how these technologies can enhance traditional teacher accompaniment strategies while maintaining pedagogical integrity and fostering authentic language acquisition. Through systematic analysis of integration models, learner engagement patterns, instructional design considerations, and outcome measures, this study seeks to establish evidence-based frameworks for optimizing human-AI collaboration in virtual EFL learning environments. The research addresses critical gaps in current literature by examining practical implementation challenges, identifying effective practices for AI-mediated support, and proposing theoretical models that position generative AI as complementary rather than substitutive educational technology within the broader ecosystem of online language instruction.

Materials and Methods

This study employed a qualitative case study design to examine the implementation and effectiveness of generative AI as co-tutor in enhancing teacher accompaniment strategies within EFL online classrooms. The study was conducted at the Centro de Idiomas (Language Center) of Universidad Técnica de Babahoyo, a

public university located in the Los Ríos province of Ecuador. The Language Center serves students from across the university's academic programs, providing required English instruction as part of general education requirements alongside optional advanced courses and certification preparation programs. Classes are conducted primarily through online modalities, a configuration accelerated by pandemic-related institutional transformations and maintained due to geographical accessibility challenges and resource optimization considerations. The research participants comprised 26 EFL teachers employed at the Language Center during the October-December 2025 period when the study was conducted. This sample represented the complete population of active instructors at the center during the study period, constituting a census sampling approach. Participant demographics reflected diversity in teaching experience, ranging from early-career instructors with fewer than three years of experience to veteran educators with over fifteen years in EFL instruction. Participation in the study was voluntary, though all Language Center instructors were invited and encouraged to engage given the institutional priority placed on pedagogical innovation and professional development.

The intervention consisted of a three-phase professional development program designed collaboratively with Language Center leadership to integrate generative AI co-tutoring strategies into existing EFL online instruction. The intervention extended across the October-December 2025 period, encompassing initial training sessions, collaborative workshop activities, and ongoing implementation support as teachers experimented with AI integration in their courses. Phase One, conducted during October 2025, consisted of foundational training sessions introducing participants to generative AI technologies, their capabilities and limitations, and potential applications for language teaching. Training was delivered through synchronous online workshops utilizing modeling, demonstration, and guided practice.

Phase Two, spanning November 2025, involved collaborative workshops where participants worked in small groups to design specific AI co-tutoring strategies and tools aligned with their instructional contexts and student needs. Workshop activities included identification of accompaniment challenges in current online teaching practices, brainstorming of AI-supported solutions, development of student-facing AI prompts and guidance materials, and peer review of proposed strategies. Phase Three, conducted throughout December 2025, involved implementation of designed strategies in participants' actual courses with ongoing support and reflective practice activities. Teachers were encouraged to experiment with various AI co-tutoring configurations, document their experiences, and share insights through informal peer discussions and structured reflection protocols.

Data collection employed multiple methods to capture diverse dimensions of teacher experiences, perceptions, and practices related to AI co-tutoring implementation. Data collection occurred concurrently with intervention implementation, allowing capture of real-time experiences and evolving perceptions as participants progressed through training, strategy development, and classroom implementation phases. Primary data sources included structured reflection prompts completed by participants at key junctures throughout the intervention period. Additionally, participants completed a

comprehensive end-of-intervention questionnaire examining multiple dimensions of their AI co-tutoring experiences and perceptions. The questionnaire incorporated both closed-ended items utilizing Likert-scale response formats and open-ended questions inviting detailed explanations and examples. Closed-ended items addressed constructs including perceived usefulness of AI as co-tutor, ease of integration into existing pedagogical practices, observed changes in student engagement, confidence in using AI tools, and intentions for continued use beyond the study period.

Qualitative data from reflection prompts, open-ended questionnaire responses, and artifacts underwent thematic analysis. Initial familiarization involved reading all textual data multiple times to develop comprehensive understanding and noting preliminary observations. Quantitative data from closed-ended questionnaire items were analyzed using descriptive statistics including frequency distributions, measures of central tendency, and measures of variability. Descriptive statistical analysis was conducted using SPSS software, with results presented through tables and graphs facilitating interpretation and comparison across different questionnaire items. While the relatively small sample size precluded robust inferential statistical analyses, descriptive statistics offered valuable information about the distribution and central tendencies of teacher perceptions within this specific case context.

Results and Discussion

The implementation of generative AI as co-tutor within the EFL online classrooms at Universidad Técnica de Babahoyo's Language Center yielded multifaceted findings regarding teacher perceptions, implementation practices, and observed effects on student engagement.

Data collected across the three-month intervention period (October-December 2025) through structured reflections, questionnaires, and collaborative workshop activities revealed predominantly positive teacher attitudes toward AI co-tutoring alongside recognition of significant challenges requiring careful navigation.

Table 1. *Demographic and Professional Characteristics of Study Participants (N = 26)*

Characteristic	Category	n	%
Gender	Female	18	69.2
	Male	8	30.8
Teaching Experience	1-3 years	7	26.9
	4-7 years	9	34.6
	8-12 years	6	23.1
	13+ years	4	15.4
Educational Level	Bachelor's degree	3	11.5
	Master's degree	21	80.8
	Doctoral degree	2	7.7
Prior AI Experience	None	11	42.3
	Minimal (used once or twice)	9	34.6
	Moderate (regular personal use)	6	23.1
	Extensive (integrated in teaching)	0	0.0
Teaching Modality	Fully online	14	53.8
	Hybrid	12	46.2
Course Level Taught	Basic (A1-A2)	8	30.8
	Intermediate (B1-B2)	13	50.0
	Advanced (C1-C2)	5	19.2

Source: Own elaboration

Table 1 presents demographic and professional characteristics of the 26 EFL teachers who participated in this study, revealing a diverse group in terms of experience, educational background, and technological familiarity. The participant group was predominantly female (69.2%), reflecting broader gender patterns in language teaching professions documented in literature. Teaching experience ranged widely, with over one-quarter (26.9%) representing early-career educators with 1-3 years of experience, while the majority (58.0%) fell within the 4-12 year range, and a smaller

proportion (15.4%) represented veteran instructors with over 13 years of experience.

Table 2. Teacher Perceptions of Generative AI as Co-Tutor: Usefulness and Effectiveness Dimensions

Dimension	M	SD	Strongly Disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)
AI provides valuable support for student learning outside class hours	4.42	0.64	0 (0.0)	0 (0.0)	2 (7.7)	11 (42.3)	13 (50.0)
AI helps maintain continuous teacher presence in online environments	4.19	0.75	0 (0.0)	1 (3.8)	3 (11.5)	13 (50.0)	9 (34.6)
AI-generated feedback is accurate and pedagogically appropriate	3.73	0.87	0 (0.0)	3 (11.5)	6 (23.1)	13 (50.0)	4 (15.4)
AI enhances personalization of learning experiences	4.08	0.80	0 (0.0)	2 (7.7)	3 (11.5)	14 (53.8)	7 (26.9)
AI reduces teacher workload effectively	3.54	1.03	1 (3.8)	4 (15.4)	5 (19.2)	11 (42.3)	5 (19.2)
AI complements rather than replaces human teaching	4.54	0.58	0 (0.0)	0 (0.0)	1 (3.8)	10 (38.5)	15 (57.7)
AI improves immediate feedback availability for students	4.35	0.69	0 (0.0)	0 (0.0)	3 (11.5)	11 (42.3)	12 (46.2)
AI helps students develop language autonomy	3.92	0.93	0 (0.0)	3 (11.5)	4 (15.4)	13 (50.0)	6 (23.1)

Source: Own elaboration

Table 2 documents teacher perceptions across eight dimensions of AI co-tutor usefulness and effectiveness, revealing predominantly positive attitudes with important variations across specific dimensions. The highest-rated dimension was agreement that AI complements rather than replaces human teaching (M = 4.54, SD = 0.58), with 96.2% of participants agreeing or strongly agreeing with this statement. Similarly high agreement emerged for perceptions that AI provides valuable support for student learning outside class hours (M = 4.42, SD = 0.64) and improves immediate feedback availability (M = 4.35, SD = 0.69), reflecting recognition of AI's capacity to extend temporal boundaries of teacher accompaniment beyond synchronous instructional periods. This pattern indicates that while teachers recognized

AI's potential for extending student support, they maintained realistic assessments of current limitations regarding feedback quality and questioned assumptions about straightforward workload reduction, possibly reflecting experiences where AI integration initially required substantial time investment for prompt design, student training, and output validation.

Table 3. Observed Changes in Student Engagement After AI Co-Tutor Implementation (N = 26)

Engagement Indicator	Decreased n (%)	No Change n (%)	Slightly Increased n (%)	Moderately Increased n (%)	Substantially Increased n (%)	M	SD
Student participation in asynchronous activities	0 (0.0)	3 (11.5)	8 (30.8)	11 (42.3)	4 (15.4)	3.62	0.90
Time students spend practicing English outside class	1 (3.8)	5 (19.2)	9 (34.6)	8 (30.8)	3 (11.5)	3.27	1.04
Quality of student questions and interactions	0 (0.0)	4 (15.4)	10 (38.5)	9 (34.6)	3 (11.5)	3.42	0.90
Student confidence in using English	0 (0.0)	2 (7.7)	7 (26.9)	13 (50.0)	4 (15.4)	3.73	0.83
Completion rates for homework assignments	2 (7.7)	8 (30.8)	9 (34.6)	6 (23.1)	1 (3.8)	2.85	1.01
Student requests for additional support	1 (3.8)	10 (38.5)	8 (30.8)	5 (19.2)	2 (7.7)	2.88	1.00
Students' independent problem-solving attempts	0 (0.0)	6 (23.1)	7 (26.9)	10 (38.5)	3 (11.5)	3.38	0.98

Source: Own elaboration

Table 3 presents teacher observations of changes in various student engagement indicators following AI co-tutor implementation, revealing predominantly positive but modest improvements across most dimensions. The highest-rated improvement involved student confidence in using English (M = 3.73, SD = 0.83), with 65.4% of teachers reporting moderate or substantial increases and only 7.7% observing no change. Similarly, increases were observed in student participation in asynchronous activities (M = 3.62, SD = 0.90), quality of student questions and interactions (M = 3.42, SD = 0.90), and

students' independent problem-solving attempts (M = 3.38, SD = 0.98), suggesting that AI co-tutoring may support development of learner autonomy and more sophisticated engagement with course content.

Table 4. Types of AI Co-Tutoring Strategies Implemented and Perceived Effectiveness

Strategy Type	Implemented n (%)	Perceived Effectiveness M (SD)	Most Common Use Cases
Writing feedback and revision support	24 (92.3)	4.25 (0.68)	Essay drafting, grammar checking, style improvement
Conversational practice partner	21 (80.8)	4.10 (0.83)	Oral fluency practice, dialogue simulation, pronunciation
Grammar explanation and clarification	23 (88.5)	4.35 (0.65)	On-demand grammar rules, example generation, error explanation
Vocabulary expansion and contextualization	22 (84.6)	4.18 (0.73)	Word meaning, usage examples, contextual application
Reading comprehension support	18 (69.2)	3.89 (0.90)	Text summarization, unfamiliar vocabulary, concept clarification
Translation assistance with pedagogical framing	16 (61.5)	3.56 (1.03)	L1-L2 comparison, idiomatic expression explanation
Practice exercise generation	19 (73.1)	3.95 (0.85)	Customized drills, exam preparation, skill-specific practice
Cultural context and pragmatics guidance	14 (53.8)	3.71 (0.94)	Sociolinguistic appropriateness, cultural norms, register
Motivation and emotional support	12 (46.2)	3.33 (1.07)	Encouragement, learning strategies, anxiety reduction
Assessment preparation and feedback	17 (65.4)	3.82 (0.88)	Practice tests, rubric explanation, performance feedback

Source: Own elaboration

Table 4 documents the diverse types of AI co-tutoring strategies implemented by participants and their perceived effectiveness ratings, revealing both widespread adoption of certain applications and considerable variation in implementation breadth. The most commonly implemented strategies involved writing feedback and revision support (92.3%), grammar explanation and clarification (88.5%), and vocabulary expansion and contextualization (84.6%), reflecting traditional priorities in EFL instruction and alignment with generative AI's demonstrated strengths in linguistic analysis and explanation. These frequently implemented strategies also received high effectiveness ratings, with grammar explanation rated highest (M = 4.35, SD = 0.65), followed by writing feedback (M = 4.25, SD = 0.68) and vocabulary support (M = 4.18, SD = 0.73). Conversational practice partner

applications were implemented by 80.8% of participants with favorable effectiveness ratings (M = 4.10, SD = 0.83), suggesting recognition of AI's potential for providing low-pressure speaking practice opportunities addressing common challenges of limited authentic interaction in EFL contexts.

Table 5. Challenges Encountered in AI Co-Tutor Implementation and Frequency of Occurrence

Challenge Category	Never n (%)	Rarely n (%)	Sometimes n (%)	Often n (%)	Very Often n (%)	M	SD
Technical Challenges							
Students lack access to AI tools	8 (30.8)	10 (38.5)	6 (23.1)	2 (7.7)	0 (0.0)	2.08	0.93
AI platforms experiencing downtime or errors	3 (11.5)	12 (46.2)	9 (34.6)	2 (7.7)	0 (0.0)	2.38	0.80
Difficulty integrating AI into LMS	5 (19.2)	9 (34.6)	8 (30.8)	4 (15.4)	0 (0.0)	2.42	0.99
Pedagogical Challenges							
AI generates inaccurate or inappropriate responses	1 (3.8)	7 (26.9)	13 (50.0)	5 (19.2)	0 (0.0)	2.85	0.78
Difficulty designing effective prompts	2 (7.7)	11 (42.3)	9 (34.6)	4 (15.4)	0 (0.0)	2.58	0.84
Students over-rely on AI without learning	0 (0.0)	5 (19.2)	10 (38.5)	9 (34.6)	2 (7.7)	3.31	0.88
Students use AI to complete work without effort	0 (0.0)	4 (15.4)	9 (34.6)	10 (38.5)	3 (11.5)	3.46	0.90
Difficulty monitoring student AI use	1 (3.8)	6 (23.1)	8 (30.8)	9 (34.6)	2 (7.7)	3.19	1.02
Training and Support Challenges							
Insufficient time to learn AI tools	3 (11.5)	8 (30.8)	10 (38.5)	5 (19.2)	0 (0.0)	2.65	0.94
Students need more guidance on AI use	0 (0.0)	3 (11.5)	8 (30.8)	12 (46.2)	3 (11.5)	3.58	0.86
Lack of institutional guidelines on AI	2 (7.7)	5 (19.2)	7 (26.9)	8 (30.8)	4 (15.4)	3.27	1.18
Ethical and Policy Challenges							
Concerns about academic integrity	1 (3.8)	6 (23.1)	9 (34.6)	8 (30.8)	2 (7.7)	3.15	0.97
Privacy and data security concerns	4 (15.4)	10 (38.5)	8 (30.8)	3 (11.5)	1 (3.8)	2.50	1.00
Equity issues due to unequal access	6 (23.1)	9 (34.6)	7 (26.9)	3 (11.5)	1 (3.8)	2.38	1.06

Source: Own elaboration

Table 5 presents the frequency with which participants encountered various challenges across technical, pedagogical, training, and ethical dimensions, revealing that pedagogical concerns predominated over technical obstacles. Among pedagogical challenges, the most frequently encountered issue involved students using AI to complete work without genuine effort (M = 3.46, SD = 0.90), with 50.0% of teachers reporting this occurred often or very oftenClosely related was concern about student over-reliance on AI without actual learning (M = 3.31, SD = 0.88), reported as occurring sometimes, often, or very often by 80.8% of participants. These patterns underscore the critical importance of explicit instruction about strategic AI use and assessment design that requires demonstration of understanding rather than mere production of correct answers. Teachers also frequently encountered difficulty monitoring student AI use (M = 3.19, SD = 1.02) and navigating students' need for more guidance on appropriate AI use (M = 3.58, SD = 0.86), the latter occurring often or very often for 57.7% of participants. Finally, Table 6 presents prompts developed by teacher that could be useful for other academics,

Table 6. *Collaboratively Designed AI Prompts for EFL Student Use Across Learning Activities (N = 26)*

Learning Activity	Prompt Category	Designed Prompt Template	Pedagogical Rationale	Developed by n Teachers
Writing Practice	Essay Feedback	"I am an [proficiency level] English learner writing an essay about [topic]. Please read my draft below and provide feedback by: 1) Identifying three strengths in my writing, 2) Explaining two areas where I can improve with specific examples from my text, 3) Asking me questions to help me think deeper about my ideas. Do NOT rewrite my essay. Help me understand how to improve it myself. Here is my draft: [student paste draft]"	Encourages reflective revision rather than passive acceptance of corrections; maintains student ownership of writing process	24
Writing Practice	Grammar Self-Correction	"I am practicing English grammar at [level]. I wrote this sentence: '[student sentence]'. I think there might be a grammar error related to [student's hypothesis, e.g., verb tense]. Can you: 1) Tell me if my hypothesis is correct, 2) Explain the grammar rule in simple terms, 3) Show me how to correct it, 4) Give me two similar practice sentences to try?"	Promotes metalinguistic awareness by requiring students to hypothesize about errors before receiving answers	23
Speaking Practice	Conversation Partner	"Act as a conversation partner for an English learner at [level]. Start a conversation about [topic of interest]. Keep your responses to 2-3 sentences. Ask me follow-up questions based on what I say. If I make grammar or vocabulary mistakes, gently correct me by restating what I said correctly, then continue the conversation. Adjust your vocabulary to match my level."	Provides low-anxiety speaking practice with natural conversation flow and implicit error correction	21
Speaking Practice	Pronunciation Guidance	"I am learning English pronunciation. I want to practice saying: '[target word/phrase]'. Can you: 1) Break down the word into syllables and show me the stress pattern, 2) Describe how to position my mouth and tongue for difficult sounds, 3) Give me similar words to practice with the same sound patterns, 4) Suggest tongue twisters or sentences for practice?"	Offers detailed phonetic guidance unavailable in traditional text-based materials	18
Vocabulary Development	Contextual Usage	"I am learning the English word '[target word]' at [level]. Please help me understand it by: 1) Defining it in simple English, 2) Showing it in three different example sentences that demonstrate different contexts, 3) Teaching me 2-3 common collocations with this word, 4) Telling me if this word is formal, informal, or neutral, 5) Giving me a short story (4-5 sentences) that uses this word naturally."	Moves beyond dictionary definitions to develop rich, contextualized word knowledge	22
Vocabulary Development	Synonym Differentiation	"I know the English word '[word 1]' but I learned a similar word '[word 2]'. I am confused about when to use each one. Can you: 1) Explain the difference in meaning between them, 2) Tell me which situations are appropriate for each word, 3) Give me example sentences showing the difference, 4) Create a practice exercise where I choose between them?"	Addresses common confusion between near-synonyms requiring nuanced understanding	19
Reading Comprehension	Text Scaffolding	"I am reading this English text at [level]. Before I answer my teacher's questions, please help me understand it better by: 1) Summarizing the main idea in one simple sentence, 2) Identifying 3-5 key vocabulary words I should understand, 3) Explaining any cultural references or idioms, 4) Asking me 2-3 comprehension questions to check my understanding. Do NOT answer my teacher's assignment questions for me."	Provides comprehension support while maintaining academic integrity by avoiding direct assignment completion	18
Reading Comprehension	Vocabulary in Context	"I am reading an English text and I don't understand this sentence: '[paste sentence]'. The word '[target word]' is confusing to me. Can you: 1) Explain what this word means in THIS specific sentence, 2) Show me if this word has other meanings in different contexts, 3) Rewrite the sentence in simpler English keeping the same meaning, 4) Help me understand why the author chose this particular word?"	Develops context-based meaning inference skills rather than isolated vocabulary memorization	20
Grammar Practice	Rule Explanation	"I am learning about [grammar structure, e.g., present perfect tense] in English at [level]. Can you: 1) Explain this grammar in simple terms with the basic rule, 2) Show me when native speakers use this grammar, 3) Show me 5 example sentences, 4) Explain common mistakes learners make with this grammar, 5) Give me a short practice exercise (5 questions) and then check my answers with explanations?"	Provides comprehensive grammar instruction with practice opportunities and immediate feedback	23
Grammar Practice	Error Pattern Analysis	"I keep making the same grammar mistake in my writing. Here are three sentences where my teacher marked errors: [paste sentences]. Can you: 1) Identify what grammar pattern I am struggling with, 2) Explain the correct rule, 3) Show me the corrected sentences, 4) Create personalized practice exercises targeting my specific problem, 5) Give me strategies to remember this rule?"	Addresses individual error patterns with targeted intervention	19
Cultural Competence	Pragmatic Appropriateness	"I want to say '[student's intended message]' in English to [describe situation and relationship, e.g., 'my professor in an email']. Is my way of saying this appropriate for this situation? Can you: 1) Tell me if my phrasing is too formal, too informal, or appropriate, 2) Explain why, 3) Suggest alternative ways to express the same idea with different levels of formality, 4) Teach me cultural norms for this type of communication in English-speaking countries?"	Develops sociolinguistic competence and pragmatic awareness	14
Cultural Competence	Idiomatic Expression	"I heard this English expression: '[idiom/colloquialism]' and I don't understand it. Can you: 1) Explain its literal meaning versus its actual meaning, 2) Tell me in what situations people use this expression, 3) Give me examples in sentences, 4) Teach me if this is formal or casual language, 5) Share similar expressions with the same meaning?"	Bridges cultural gaps in understanding non-literal language	16
Exam Preparation	Practice Test Creation	"I am preparing for [specific exam, e.g., TOEFL writing section]. I need to practice [skill area]. Can you: 1) Create a practice question similar to the real exam, 2) Give me 20 minutes to complete it, 3) After I submit my answer, evaluate it using the official exam rubric, 4) Provide specific feedback on strengths and areas for improvement, 5) Suggest strategies for better performance?"	Simulates authentic exam conditions with constructive feedback	17
Exam Preparation	Strategy Development	"I am taking [exam name] and I struggle with [specific section/skill]. Can you: 1) Explain common question types in this section, 2) Teach me time management strategies, 3) Share tips for avoiding common mistakes, 4) Give me a step-by-step approach for answering these questions, 5) Create mini-practice exercises for each strategy you teach me?"	Develops test-taking strategies alongside language skills	15
Listening Practice	Transcript Analysis	"[After student listens to audio] I listened to an English audio about [topic]. Here is what I understood: [student summary]. Can you help me check my comprehension by: 1) Confirming what I understood correctly, 2) Pointing out important information I missed, 3) Explaining vocabulary or phrases I might not have caught, 4) Asking follow-up questions to deepen my understanding? Do NOT give me the transcript unless I specifically ask for it."	Encourages active listening and comprehension checking without immediately providing answers	12
Self-Assessment	Learning Progress Reflection	"I am learning English at [level]. This week I practiced [activities completed]. Can you help me reflect on my progress by: 1) Asking me questions about what I found easy and difficult, 2) Helping me identify patterns in my mistakes, 3) Suggesting what I should focus on next week, 4) Creating a personalized mini study plan based on my specific needs?"	Promotes metacognitive awareness and learner autonomy	16
Translation Analysis	Contrastive Analysis	"In my native language [specify language], we say '[phrase in L1]' to express [meaning/function]. In English, I translated it as '[student's English translation]'. Can you: 1) Tell me if my English translation captures the same meaning and tone, 2) Explain any differences between how my language and English express this idea, 3) Suggest more natural English ways to say this, 4) Teach me about any cultural differences in how this concept is expressed?"	Uses L1 as resource for contrastive analysis while avoiding over-reliance on direct translation	16
Motivation Support	Learning Strategy Coaching	"I am feeling [frustrated/overwhelmed/discouraged] about learning English because [specific challenge]. Can you: 1) Help me understand that this challenge is normal for language learners, 2) Suggest 3-4 specific strategies to overcome this challenge, 3) Share encouraging facts about language learning, 4) Help me set a small, achievable goal for this week, 5) Remind me of progress I've likely already made?"	Provides emotional support and strategic guidance during challenging learning periods	12

Source: Own elaboration

The findings from this case study provide empirical evidence that generative AI can function effectively as co-tutor within EFL online classrooms, enhancing teacher accompaniment strategies while simultaneously revealing significant pedagogical, technical, and ethical challenges requiring careful research (Hwang et al., 2020; Salas & Yang, 2022). The predominantly positive teacher perceptions documented in this research, particularly regarding AI's capacity to extend temporal boundaries of instructional support and provide immediate feedback, align with theoretical predictions from distributed cognition frameworks suggesting that effective learning environments can emerge from strategic coordination between human expertise and computational capabilities (Sumakul et al., 2022).

However, the nuanced pattern of findings;where teachers simultaneously endorsed AI's value while expressing concerns about academic integrity, accuracy limitations, and potential erosion of human connection,underscores that successful AI integration depends not merely on technological capability but on thoughtful pedagogical orchestration that preserves essential human elements while leveraging computational affordances (Braiki et al., 2020; Jiang, 2022). These results contribute to emerging literature on educational AI by documenting implementation processes and perception patterns within an understudied Latin American public university context, thereby expanding geographical and institutional diversity of empirical evidence beyond predominantly Anglophone and East Asian settings that have dominated existing research (Chen et al., 2020).

The strong agreement among participants that AI complements rather than replaces human teaching (96.2% agreement) represents a particularly significant finding, suggesting that the intervention's deliberate framing of AI as collaborative tool rather than instructor substitute successfully mitigated potential resistance rooted in professional identity threats. This outcome aligns with (Wang, 2022) argument that educational technologies should be designed for empowerment rather than replacement, supporting human capabilities instead of substituting them. The collaborative, participatory design approach employed in this study; where teachers actively shaped AI integration strategies rather than receiving top-down mandates, likely contributed to this positive framing by positioning educators as professional decision-makers exercising agency over technology adoption (Wang, 2019).

The diversity of AI co-tutoring strategies implemented by participants, ranging from highly adopted applications like writing feedback (92.3%) and grammar explanation (88.5%) to less common uses such as cultural pragmatics guidance (53.8%) and motivational support (46.2%), reveals how teachers exercised professional judgment in selecting applications aligned with their pedagogical priorities and students' needs (Lara et al., 2023). The pattern wherein frequently implemented strategies also received highest effectiveness ratings suggests that teachers gravitated toward applications where AI demonstrated clear capabilities while showing appropriate caution about domains requiring nuanced cultural understanding or emotional sensitivity (Sun et al., 2021). The finding that pedagogical challenges predominated over technical obstacles represents an important contribution to educational technology literature, which sometimes overemphasizes infrastructure and access issues while underattending to more fundamental questions about appropriate use

and pedagogical integration (Lu, 2019). However, this finding should not be interpreted as inherent limitation of AI technology but rather as indicator that implementation requires explicit instruction about strategic use, assessment design preventing gaming, and cultivation of learning dispositions valuing understanding over mere task completion (Feuerriegel et al., 2022). The collaboratively designed prompts documented in Table 6 represent a significant practical contribution, demonstrating how pedagogical principles can be embedded within AI interaction structures to scaffold appropriate use and maintain learning objectives. The emphasis in these prompts on encouraging student thinking rather than providing direct answers, requiring students to articulate hypotheses before receiving corrections, and explicitly prohibiting completion of teacher-assigned work reflects sophisticated understanding that AI's educational value depends critically on how interactions are structured (Wang, 2022; Zawacki et al., 2019b).

The integration of AI co-tutoring within the theoretical framework of teacher accompaniment in online education represents an important conceptual contribution of this research. Traditional conceptualizations of teaching presence (Kumar et al., 2023) and teacher accompaniment (Gutierrez et al., 2022) focused exclusively on human instructor actions, treating technology as passive medium rather than active participant in pedagogical relationships. This study's findings suggest value in expanding these frameworks to acknowledge AI as potential co-participant in distributed accompaniment systems, where continuous support emerges not from heroic individual teacher effort to be always available but from strategic orchestration of human expertise during synchronous interactions and

AI support during asynchronous periods (Canhoto & Clear, 2020). This reconceptualization aligns with ecological perspectives on educational technology viewing learning environments as complex systems where multiple actors; human and computational,interact to create emergent educational experiences (Zawacki et al., 2019a). However, this expanded framework must preserve recognition that certain dimensions of accompaniment require uniquely human capabilities. The qualitative data revealing teacher concerns about loss of human connection, combined with moderate effectiveness ratings for AI-provided motivational and emotional support, suggest that socio-emotional accompaniment remains primarily human domain (Haryanto & Ali, 2019). Future research should examine how to optimize complementarity between AI's strengths in immediate, consistent, scalable support and human teachers' capacities for empathy, contextual understanding, relationship building, and nuanced pedagogical judgment, potentially developing design principles for hybrid accompaniment systems that strategically deploy each actor's distinctive capabilities.

Conclusiones

This case study investigation of generative AI as co-tutor in EFL online classrooms at Universidad Técnica de Babahoyo provides compelling evidence that AI technologies can meaningfully enhance teacher accompaniment strategies when implemented through collaborative, pedagogically grounded approaches that position technology as complement rather than substitute for human expertise. The predominantly positive teacher perceptions documented across multiple dimensions—particularly regarding AI's capacity to extend temporal boundaries of

support, provide immediate feedback, and enhance learning personalization—demonstrate that generative AI possesses genuine affordances for addressing persistent challenges in online language education, including limited opportunities for individualized attention, delayed feedback, and insufficient practice beyond synchronous class sessions (Borup et al., 2020; Hrastinski, 2019). However, the nuanced pattern of findings, wherein enthusiasm coexisted with substantial concerns about academic integrity, accuracy limitations, student over-reliance, and potential erosion of essential human connection, underscores that realizing AI's educational potential requires far more than technological deployment; it demands thoughtful pedagogical orchestration, explicit student preparation for critical and strategic use, ongoing teacher professional development, and institutional policies providing clear guidance while preserving educator agency (Haryanto & Ali, 2019; Zawacki et al., 2019a).

The collaborative design approach employed in this study, where teachers actively shaped integration strategies through participatory workshops rather than receiving prescriptive implementation mandates, proved instrumental in fostering positive attitudes and sustainable adoption intentions. The diversity of AI co-tutoring applications developed by participants—from writing feedback and grammar explanation to conversational practice and cultural pragmatics guidance—illustrates how professional educators, when provided appropriate support and autonomy, exercise sophisticated judgment about which technological affordances align with their pedagogical values and students' needs. The collection of carefully designed prompts created through this collaborative process represents a significant practical contribution,

demonstrating how pedagogical principles can be embedded within AI interaction structures to scaffold appropriate use, maintain cognitive engagement, and prevent superficial task completion without genuine learning. These prompts exemplify what effective human-AI collaboration in education might entail: strategic division of labor where computational capabilities handle immediate, scalable support functions while human expertise focuses on higher-order pedagogical activities requiring contextual understanding, emotional sensitivity, and nuanced professional judgment (Luckin et al., 2016; Roll & Wylie, 2016).

The challenges documented in this research; particularly the prevalence of concerns about students using AI to complete work without effort, difficulties monitoring AI use, and AI's occasional generation of inaccurate or culturally inappropriate responses, highlight that current implementations remain imperfect and require ongoing refinement. These findings should not be interpreted as reasons to reject AI integration but rather as indicators of where additional effort is needed: developing assessment approaches that require demonstration of understanding rather than mere production of correct answers, cultivating critical AI literacy among both students and teachers, establishing institutional guidelines providing clear direction on appropriate use, and ensuring equitable access so that technological advantages do not accrue disproportionately to already-privileged students (Hwang & Nurtantyana, 2022). The study's grounding in an Ecuadorian public university context provides important empirical evidence that meaningful AI integration is achievable even in resource-constrained settings characteristic of many developing country institutions, provided that implementation is context-responsive and realistic about limitations rather than attempting

to replicate models developed in resource-rich environments.

This finding has significant implications for educational equity at both institutional and global levels, suggesting that thoughtfully designed AI co-tutoring could help address quality gaps in contexts where teacher-student ratios are high and resources for individualized support are limited, though careful attention to access barriers and digital divides remains essential (Selwyn et al., 2020). The strong teacher intentions for continued use (80.8% planning to continue implementation) and willingness to recommend AI co-tutoring to colleagues (88.5%) provide encouraging evidence about sustainability prospects, though longitudinal research will be necessary to determine whether initial enthusiasm translates into durable practice transformation. As generative AI technologies continue their rapid evolution, the educational community faces critical decisions about how to harness their capabilities while preserving essential human elements and addressing legitimate concerns about equity, integrity, and learning quality. This research suggests that productive pathways forward involve neither uncritical technology adoption nor reflexive rejection but rather thoughtful, evidence-informed integration emphasizing teacher agency, pedagogical grounding, collaborative knowledge construction, and ongoing critical evaluation. The co-tutoring framework explored in this study; positioning AI as collaborative partner extending rather than replacing human capacities, offers one promising model for navigating this complex terrain, though continued research across diverse contexts and populations will be essential for developing robust, generalizable principles.

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