Perceptions of Five Costa Rican EFL Teachers
Regarding the Integration of Large Language Models:
An Exploratory Study

(Percepciones de cinco docentes costarricenses
de inglés como lengua extranjera sobre la integración
de modelos de lenguaje de gran escala: un estudio exploratorio)

KARINA BADILLA-RAMOS
https://orcid.org/0000-0003-3707-4890
karinabadilla97@gmail.com
Universidad Nacional, Costa Rica https://ror.org/01t466c14
Universidad Estatal a Distancia, Costa Rica https://ror.org/0529rbt18

Abstract: The present exploratory study aims to assess the perceptions of five Costa Rican English as a Foreign Language (EFL) teachers regarding the benefits of their participation in four workshops on the use of selected Large Language Models (LLMs). Elementary and high school EFL in-service teachers participated in the study. Data collection involved 1) an initial questionnaire to identify EFL teachers' needs and current practices with the LLMs, 2) a focus group to gather the participants' perceptions regarding the use of AI in the classroom and the development of the workshop, and 3) a reflective narrative to test the overall effectiveness of their training. The results showed that in general the workshops benefited the pedagogical practice of the participants since they learned how to use different LLMs, such as Gemini, Grammarly, and NoteGPT, in addition to ChatGPT. However, the pedagogical implications in the use of LLMs, as well as the participants' attitudes towards workshops for professional development, require further study.

Keywords: Artificial Intelligence. English. Large Language Models. Exploratory study.

Resumen: El propósito del presente estudio experimental se centra en valorar la capacitación de cinco profesores de inglés como lengua extranjera (ILE) en Costa Rica sobre el uso de modelos de lenguaje de gran tamaño (LLM por sus siglas en inglés) por medio de cuatro talleres. Participaron en el proyecto docentes de primaria y secundaria que se encuentran en servicio. La recolección de datos se realizó mediante 1) un cuestionario que se distribuyó antes de la capacitación para identificar sus necesidades y sus prácticas actuales con los LLM, 2) un grupo focal que reunía las percepciones de los participantes en relación con el uso de Inteligencia Artificial (IA) y el desarrollo del taller, y 3) una narrativa reflexiva para evaluar la efectividad de la capacitación. Los resultados muestran cómo esta capacitación favoreció la práctica pedagógica de los docentes ya que aprendieron sobre otros LLMs, como Gemini, Grammarly y NoteGPT. No obstante, se requiere analizar las implicaciones pedagógicas sobre el uso de LLMs en la educación y estudiar las percepciones de los participantes sobre talleres de desarrollo profesional.

Palabras clave: Inteligencia artificial. Inglés. Modelos de lenguaje de gran tamaño. Estudio experimental.

1. Introduction

The use of Large Language Models (LLMs) has been considered an integral part of people's daily lives. ChatGPT, Gemini, and Open AI are examples of these so-called LLMs. They have been used in medicine (Telenti *et al.* 2025; Ling *et al.* 2024; Qiu *et al.* 2024), translation (Chen *et al.* 2025; Gao *et al.* 2024), marketing (Arora 2025), and other fields. In language education, they have also become essential for both learners and teachers. However, recent studies have shown that teachers need to be guided to use them effectively and meaningfully (Mohebbi 2025; Songiengchai 2025; Alhusaiyan 2024; Koc and Savaş 2025; Hazaymeh *et al.* 2024).

According to prior research, learners exposed to the use of AI in the language classroom have shown increased motivation, as their learning process becomes personalized when using LLMs (Hazaymeh *et al.* 2024; Mohebbi 2025; Koc and Savaş 2025; Lee and Eronen 2025). Despite these documented benefits, certain drawbacks need to be addressed. Existing studies have focused on enhancing writing skills by using AI, such as ChatGPT, at the expense of other skills such as listening, speaking, and reading, and relatively less research has focused on the students' perceptions regarding the use of LLMs (Durgungoz and Kharrufa 2024; Zhao 2025). Even more important, this scarcity of research on the perceptions of language teachers in Latin America, specifically in Costa Rica,

regarding the benefits of training on the use of LLMs is a significant gap in the field. Therefore, this study aims to fill this gap, by exploring five Costa Rican EFL teachers' opinions about four training sessions on the use of LLMs.

This initiative seeks to contribute to the field of teacher training, as the pedagogical integration of LLMs should be further examined. The results of this work are expected to support EFL teachers who are interested in receiving training to use AI more effectively and meaningfully. The remainder of this article is divided into the following five main sections: literature review, methodology, results, discussion, and conclusion.

2. Literature Review

AI is increasingly being integrated into language classrooms. However, there is a necessity for guiding and supporting EFL teachers on how to use AI (Mohebbi 2025; Songiengchai 2025; Alhusaiyan 2024; Koc and Savaş 2025; Hazaymeh *et al.* 2024; Kerr 2025; Liu *et al.* 2025). Providing teachers with training is crucial for maximizing the benefits of LLMs in education. To better understand this issue, gaps in language education and training have been outlined in the section below, followed by a discussion of the effectiveness of workshops on LLMs for EFL teachers in general and of the training that EFL teachers in Latin America have experienced.

2.1. Gaps in Language Education and Training: The Role of LLMs

According to Mohebbi (2025), there is an evident shift toward the use of AI in education, especially by learners who are now personalizing their educational experiences depending on their needs, goals, proficiency level, learning context, and motivation (Mohebbi 2025). One example of the role of AI in this transformation is the use of chatbots and conversational agents, which provide learners with immediate, personalized feedback, thus keeping them motivated to gain knowledge and improve.

Although these benefits exist, certain challenges are associated with AI (Mohebbi 2025). First, the fact that many people still do not have access to technology hinders their education opportunities. Second, given the complexity of technological advances, educators need to receive appropriate training that enables them to guide learners toward a more independent and self-regulatory use of AI. As Mohebbi (2025) explained: "human instructors remain central to guiding learners through complex, nuanced aspects of the language that AI tools struggle to address" (2025: 14). A teacher's guidance is key because language learners are currently relying too much on AI; they need to take charge of their own learning process to avoid hindering their cognitive processes. Third, ethical

concerns related to data privacy and reinforcement of "linguistic and cultural biases" (Mohebbi 2025: 6) are still prevalent.

Mohebbi (2025) analyzed studies on the role of AI from 2009 to 2024. He listed 18 studies: six focused on enhancing speaking skills, five on grammar, three on grammar and writing, one on vocabulary and conversation, one on vocabulary, one on writing and vocabulary, and one on academic writing. Mohebbi's meta-analysis revealed that grammar and writing prevailed but listening and reading have been relatively unexplored.

A recent study by Alhusaiyan (2024) showed that despite the benefits of AI in language learning, certain gaps in testing its effectiveness in L1 and L2 learners remain. The researcher conducted a content analysis of articles on the Web of Science and identified positive and negative effects of using AI in the classroom. Among the benefits, Alhusaiyan (2024) examined the effectiveness of intelligent tutoring systems, the use of AI-supported automatic feedback systems, and the use of AI-supported computer models. The analysis showed that tutoring systems "enhance writing quality, increase accuracy in scoring systems, and decrease error rates" (Alhusaiyan 2024: 7). In addition, the author argued that writing quality was not the only skill to benefit from AI integration; conversational agents enhanced learners' speaking proficiency as well.

Despite these advantages, cognitive engagement with the feedback given by AI will depend on the learners. For example, vocabulary retention and recall are not necessarily boosted by AI; they depend on the learners' willingness and engagement to learn. Therefore, teacher involvement plays a significant role in "maximizing [learners'] pedagogical effectiveness" (2024: 10).

In another study, Songiengchai (2025) stated that Thai EFL learners need to use the language for international communication and business. For her, using the language more meaningfully rather than relying on memorization is vital. Therefore, in the study, AI was used to tailor Thai high school learners' language needs and engage them in more meaningful learning opportunities. She combined the Input Hypothesis and Interaction Hypothesis with the use of Chat GPT to "facilitate language learning and deliver personalized, interactive, and contextually relevant language experiences" (Songiengchai 2025: 305). She tested and compared the effectiveness of traditional methods with the use of AI in the classroom. After testing vocabulary, grammar, conversation skills, and reading comprehension, Songiengchai (2025) noticed that Chat GPT motivated learners. It provided compelling learning experiences since immediate feedback was given to the learners, refining their learning outcomes. She emphasized the importance of incorporating the use of AI into the curriculum and urged policymakers and institutions to explore its implications in the classroom.

Koc and Savaş (2025) emphasize the importance of providing guidance and support to English language teachers worldwide. This is essential not only to keep them up to date with technological advancements and AI, but also to enhance their pedagogical practice when using voice-based chatbots for language learning. In their meta-synthesis study, the researchers discussed the strengths and challenges associated with using chatbots designed for language learners, including Alexa, Google Assistant, Enskill English, Cleverbot, Replika, Ellie, HALEF, IVELL, TPBOT, Smart UEnglish, PengTalk, Indigo, and Elbot, TextElvator.

The benefits included the development of language skills, the enhancement of effective communication, the facilitation of communicative competence, an increase in pragmatic awareness, a reduction in anxiety, an improvement of motivation, and heightened attention. The challenges, in contrast, focused on "low intelligibility of learner utterances due to problems with speech recognition (n = 15), the unnaturalness of AI chatbot–human interaction (n = 9), and a lack of explicit corrective feedback (n = 5)" (Koc and Savaş 2025: 12). They also pointed out that "several studies in AI chatbot–integrated language learning research had a basis in the interaction hypothesis" (Koc and Savaş 2025: 14). For them, language teachers must employ AI chatbots to aid language learners' anxiety, and they can use CASA or CoI frameworks to plan their lessons. Language learning autonomy can be improved since teachers can provide different AI tools for their learners to practice the target language.

Hazaymeh *et al.* (2024) studied the perceptions of EFL teachers in the United Arab Emirates regarding their use of AI. They found that the participants considered that it is beneficial that AI provides personalized feedback, supports adaptative learning, enhances language acquisition, engages students, and motivates learning. However, they suggested that EFL teachers require training to use AI applications in their classrooms. For them, modifying instructors' perspectives about AI is essential. They still need to motivate those who are hesitant to use AI.

Traga and Rocconi (2025) explored teachers' confidence and professional development needs in the use of LLMs. For them, if teachers do not understand how to use LLMs responsibly, they will misuse them. They believe that acquiring the necessary competencies to understand and develop their knowledge of LLMs cannot be done through informal practice. Therefore, in this study, Traga and Rocconi (2025) surveyed 242 teachers. They found that the best-known AI tool used by teachers is ChatGPT—93% of the teachers recognized it. Regarding their familiarity with the AI concept in education, around 47.9% reported being somewhat familiar, and 37.1% rated having a low or very low understanding of

AI in education. Concerning their feelings about using AI, they claimed that teachers understand that AI is timesaving, but they are concerned about the "misuse of AI, ethical issues, and academic dishonesty" (13). Traga and Rocconi (2025) conclude that educators' trust in LLMs may influence their understanding of AI technologies; therefore, supporting teachers' use of AI is a necessity so that they can increase their professional development

These studies have shown that LLMs are transforming how language teachers teach and language students learn. However, it is still debatable how LLMs can deepen the students' critical thinking, improve the EFL language skills, enhance the teachers' pedagogical practices, and promote the correct and ethical use of LLMs. Although the literature review has pointed out these challenges, how EFL teachers can address them is not fully explored, especially in Latin American countries, such as Costa Rica. The following section presents some studies that focus on teachers' training through workshops on LLMs.

2.2. LLMs: Workshops in Education and Training

In 2024, Kerr conducted his study with Korean in-service teachers who found the use of LLMs appealing. From this study, he highlighted that exclaty how to *train* in-service teachers is not yet clear. To bridge that gap, he evaluated the workshops' effect on GAI adoption and its underlying mechanisms in secondary EFL classrooms (2024: 148). The aim was to study the teachers' perceptions of usefulness, confidence, and attitudes towards GAI (2024: 148). The results showed this workshop enhanced the teachers' confidence and willingness to incorporate technology in their teaching practices. For him, shorter programs are better than longer ones, although there is no clear evidence that people may receive the same benefits.

Bopp *et al.* (2024) conducted three workshops of three hours each with faculty members at St. Bonaventure University, located in the United States. They engaged the faculty in ethical concerns regarding the use of LLMs and an actional plan to be put into practice in their teaching after the workshop ended. Overall, the results indicated that 73% of the participants had never used LLMs in their teaching. The participants benefited from the workshop since they learned what LLMs are and how their colleagues from different disciplinary backgrounds perceive them (Bopp *et al.* 2024).

Dixon and Cox (2025) studied the perceptions of higher educators in fiction writing workshops using AI. Participants wrote fictional scenarios by following the scenario-based technique in three workshops. The first two focused on chatbots and the third one on the AI assistant. The aim of the workshop was to explore the perceptions, assumptions, and judgements of AI through fiction.

Data revealed that participants imagined a variety of uses of AI in the educational environment.

These findings indicate that workshops have primarily been employed to examine educators' perceptions regarding the use of LLMs. However, no study has addressed the opinions, attitudes, or perceptions of Latin American EFL teachers. The following section aims to present a review of studies conducted in this area.

2.3. Studies on LLMs in Latin America

Few studies have addressed the effective, meaningful, and ethical use of LLMs in Latin America. Charpentier-Jiménez (2024) conducted a qualitative, quasi-experimental study with TESOL students at Universidad de Costa Rica. The aim was to examine the role of calibration in writing evaluations. Barreda Median (2025) did a comparative analysis of the use of AI among Mexican, Colombia, Brazilian, and Argentinian teachers in different rural and university environments. The analysis highlighted the challenges these participants face in Latin America, such as poor technological infrastructure, lack of training, and limited use of AI in rural areas. It is not clear if EFL professors were part of the study.

In another study, Kundu and Bej (2025) conducted a PRISMA-guided systematic review to study the autonomy of EFL learners in using AI in Asia (specifically India, China, and Indonesia), Africa (Nigeria, South Africa, and Kenya), Latin America (Brazil, Mexico, and Colombia), and in the Middle East (Iran, Turkey, and Saudi Arabia). They used different academic databases to identify articles related to AI in educational contexts and EFL teaching methodologies to identify how AI is used to enhance EFL instruction.

Kundu and Bej's (2025) findings showed that AI tools are mostly used to refine grammar and enhance writing, speaking, listening and reading skills. The AI applications are used to personalize materials, such as flashcards and to deliver real-time, corrective feedback on the students' oral speech by targeting their pronunciation and fluency mistakes. According to the authors, interaction with these tools effectively enable learners to improve their overall language proficiency.

Concerning writing, Kundu and Bej's (2025) mentioned that the students received feedback through automatic scoring mechanisms. Collectively, this feedback has been found to be engaging and motivating, mostly when interactive and gamification AI tools are incorporated in the classroom. Studies revel that students who use AI have shown great improvement in "vocabulary acquisition, grammatical accuracy, peaking fluency, and overall language comprehension

compared to traditional learning methods" (2025: 25). Nevertheless, the successful adoption and implementation of AI in EFL teaching have been challenging. EFL teachers need to receive adequate training since it might limit their professional pedagogical practice.

Studies on the perceptions of EFL teachers towards the use of AI are limited as well as those related to training teachers to use LLMs in EFL in Latin America. Guerrero Ayora (2024) examined the perceptions of EFL teachers in a language institute in Loja, Ecuador. The results showed that teachers use AI tools to reduce their workload and personalize learning. Ethical concerns were addressed, but the persistent challenge of academic integrity needs to be studied since the use of AI enables plagiarism.

What is evident from this literature review is the lack of studies that have addressed the necessity of training language teachers to use LLMs effectively, meaningfully, and ethically specifically in Costa Rica. This study aims to address this gap by answering the following research questions:

1. What are the perceptions of five Costa Rican EFL teachers toward the use of LLMs in the classroom?
2. How do five Costa Rican EFL teachers reflect on their experiences with LLMs through a reflective narrative?

3. Method

This study adopts an exploratory, qualitative design. According to Cohen *et al.*, an exploratory study aims "to investigate the interpretations of the situation made by the participants themselves, to understand their attitudes, behaviours and interactions" (2018: 20). In this study, the qualitative findings might highlight areas to explore in further investigations. To ensure clarity, the methodology section is divided into four main sections. The first defines the sampling criteria followed to conduct the study. The second one describes the participants in the study. The third one focuses on the course of action to conduct the investigation. The final section outlines the data interpretation procedure, which employed a *thematic analysis* approach. To ensure trustworthiness in this investigation, *credibility*, *transferability*, and *authenticity* were taken into account.

3.1. Sampling

This study follows a criterion-based selection with a list of attributes to guide the participant selection. These criteria include the following:

1. In-service EFL teachers working in a Costa Rican institution
2. EFL elementary school teachers
3. EFL high school teachers

4. EFL teachers who have used LLMs
5. EFL teachers who have not used LLMs.

3.2. Participants

Four elementary school teachers and one high school teacher from a private Costa Rican institution participated in the study. These five participants graduated from two programs: *Bachillerato en la Enseñanza del Inglés para I y II ciclos de la Escuela General Básica* [Bachelor of English Teaching for Primary School Education] and *Bachillerato en la Enseñanza del Inglés* [Bachelor of English Teaching]. These degrees authorize the participants to work as English teachers in academic institutions in Costa Rica. To participate in the study, all the participants completed an informed consent document before the workshops.

3.3. Procedure

The findings discussed in this paper emerged from a pilot study conducted to "assess the feasibility and usefulness" (Mackey and Gass 2005: 43) of materials created to improve teacher's digital competence. This research adopted a qualitative, experimental approach to examine the participants' perceptions regarding the use of LLMs during the workshops. To carry out the pilot test, the researcher prepared the materials, which were reviewed and validated by a linguist and researcher. Then, the researcher presented this proposal to the principal of a private school in Heredia, Costa Rica. He agreed to have his EFL elementary school and high school teachers trained in the use of LLMs. After he granted permission, the elementary and high school EFL teachers consented to be trained in the use of LLMs.

The workshop was divided into four sessions of one hour and twenty minutes each. In each session, the participants completed four main tasks: 1) writing prompts, 2) generating reading comprehension tasks, 3) writing and editing paragraphs, and 4) creating listening and speaking tasks. The participants used different LLMs, such as ChatGPT, Gemini, Grammarly, and NoteGPT, to elaborate their classroom materials. However, since the work schedule of the participants varied, the researcher was asked to conduct the workshop three times each day. In the first session, two elementary school teachers working with fourth, fifth, and sixth graders participated. In the second one, two elementary school teachers working with first, second, and third graders attended the workshop. The last session was focused on only one high school teacher.

To collect data, a Google Drive folder was shared with the participants before the workshop started. The participants had their own folders to gather and analyze the samples during the research process. In each session, a data collection

instrument was implemented to collect both qualitative and quantitative information for further analysis. These instruments also helped to assess the workshop. These instruments were reviewed and validated by a linguist.

To address the ethical implications of using LLMs as pedagogical practice, ethical concerns were integrated into the workshop. In each workshop, a segment was dedicated to discussing and presenting relevant dilemmas, such as data privacy, misinformation, the risk of over-reliance in the use of AI, and authorship and attribution of AI-generated documents.

3.4. Thematic Analysis

This thematic analysis was divided into three main steps. First, the researcher transcribed the oral information (from the focus group and the reflective narrative) into a *Word* document by using a transcription tool. The written information from the questionnaire was also organized in a separate document, ensuring that all the data was prepared for the analysis. Moreover, each participant was given a number; for example, Participant 1.

Second, a coding template was used to arrange the data. The template was structured into five columns:

1. Column 1 served to identify the line and page number of the transcribed segment.

2. Column 2 contained the verbatim segment.

3. Column 3 was used for identifying the quote and applying a descriptive approach to the coding process. The researcher "summarize[d] in a word or short phrase – most often as a noun – the basic topic of a passage of qualitative data" (Saldaña 2016: 70).

4. Column 4 recorded the code.

5. Column 5 was designed for analytical notes.

The third document was a coding book. The codes and themes emerged directly from the data (Braun & Clarke 2012) and were reviewed and validated by a second researcher to ensure the reliability.

4. Results

The results of this study were divided into three categories: the initial questionnaire, a focus group, and a reflective narrative. Questionnaires are instruments that help the researcher collect information without the presence of the researcher (Cohen *et al.* 2018). The participants received this instrument via email. The focus group was the second instrument administered. The aim was to have the EFL Costa Rican teachers discuss as a group their perceptions regarding the use of LLMs. The focus group was conducted before one of the workshops.

Finally, a reflective narrative was administered to the participants. The objective was to make them think about their previous experiences by answering a question. In this study, the data collected through these instruments was systematically coded, and their thematic patterns were identified through the coding procedure. To ensure reliability and validity of the data collection tools, the instruments were validated by both a linguist-researcher and the principal of the institution.

4.1. Initial questionnaire

Two weeks before the workshop began, the school administrator received a questionnaire to give to the participants. This instrument was composed of ten questions, and only four participants completed it.

The results of the first instrument showed that all the participants use ChatGPT in their professional practice, as it is the only LLM they knew about. The participants rely on ChatGPT because of its ease of use, its popularity, and their limited awareness of other LLMs. These participants use ChatGPT to plan their lessons, look for information, generate dynamic activities, and write formal emails to parents.

Two out of two allow their students to use ChatGPT in the classroom. While one participant claimed that parents do not like having their children use LLMs, another one preferred to have his students look for the information themselves rather than having the LLM do the tasks for them. For him, students are not developing their critical thinking skills when they use a LLM.

4.2. Focus group

The second instrument focused on answering three main questions: (a) What are your initial thoughts about using AI in your classroom? (b) How do you think AI can support your teaching and your students' learning? and (c) How do you believe that you will benefit from receiving training to use LLMs? These questions were answered before the workshop began and the answers were recorded. Only four participants shared their opinions.

Categories	Codes
Perceptions towards LLM	Useful
	Helpful
	Reduces the workload
LLMs in Teaching	Curricular adaptations
	Easy to use

Perceptions towards workshops	Useful Helpful

Table 1: Opinions reported

As shown in Table 1, the participants consider that LLMs are *useful* and *helpful* in their teaching practice, and their use also reduces their workload. One participant stated that LLMs are used "to avoid doing the 'boring' part of this job; that is, preparing materials." Additionally, they believed that LLMs can be used to prepare curricular adaptations. One participant stated that she has a student diagnosed with Down Syndrome. She said, "I am not a special education teacher. There are some things that I don't know how to do, so I ask ChatGPT to adapt the content for this student." Finally, they feel that training is *useful* and *helpful* for their teaching practice.

4.3. Reflective Narrative

The aim of the reflective narrative was to identify how five participants from a private institution perceived the process of being exposed to workshops to be trained in the use of LLMs. Through audio recording, participants described how they experienced the workshop and reflected on how they might approach training differently in the future. Participants answered the following question through an audio: *How have you perceived these workshops to learn about LLMs?* Then, they sent the audio via email to the researcher's email address.

The results from this instrument revealed that participants considered time a constraint. Participant 1 said, "I would prefer to make [participate in] one workshop that takes two hours instead of having small workshops. It might be more useful." Participant 3 stated something similar: "We did not have enough time to do a deep practice." Participant 4 said that "Maybe, our schedule is a bit complicated, and having so many things to do makes us arrive late or sometimes not be able to attend."

Regarding their recommendations, they explained that the materials, the activities, and the explanations were useful. According to Participant 1, "It was easy to learn because of the clear information provided by the person who gave us the workshops." Participant 2 said, "So good! I felt excited to apply them [what I learned] in my lessons. I won't change anything." Participant 5 said, "I would leave it just as it is." However, Participant 4 had a different point of view. She mentioned that "workshops should be shorter because taking four sessions make this [the workshop] feel endless; we have too many things to do here [school]." She also said that "the platforms sometimes failed, so we were not able

to do the tasks" and "the institution did not provide the necessary equipment for us to use it in the workshop."

5. Discussion

This study aimed to identify the perceptions of five Costa Rican EFL teachers toward the use of LLMs in the classroom. As has been documented in previous research, LLMs are beneficial in language education since they contribute to the development of language skills, the provision of personalized feedback, and the motivation of language students to learn (Mohebbi 2025; Alhusaiyan 2024; Songiengchai 2025; Koc and Savaş 2025; Hazaymeh *et al.* 2024). The participants in the present study added that these LLMs help them plan their lessons more dynamically and modify their lesson plans for students who need specific adaptations for students with special needs, allowing them to reduce their workload.

Consistent with reports from other studies (Songiengchai 2025; Traga and Rocconi 2025), the findings also suggest that ChatGPT was the only LLM that these participants had used before the workshop. However, in this study, they learned to use three more: Gemini, Grammarly, and NoteGPT. The participants were able to implement the new strategies by creating activities that also allowed them to develop digital skills. Prior studies have highlighted the importance of developing technological competence, and this could be done through workshops (Kerr 2024; Vik 2023; Bopp et al 2024).

Another aspect to emphasize was the need for implementing teacher training on LLMs as a pedagogical tool. It was clear that all five participants found LLMs *useful* and *helpful*. They repeatedly claimed they did not know how to use these four LLMs effectively before the workshop; these comments align with the findings of the studies conducted by Alhusaiyan (2024), Hazaymeh *et al.* (2024), Mohebbi (2025), Songiengchai (2025), Koc and Savaş (2025), and Karr (2025). This not only allows teachers to improve their digital competence, but it also helps them transfer best practices to their students by promoting ethical literacy.

Concerning the attitudes towards the workshops, this investigation explored the teachers' opinions regarding the application of LLMs in the classroom. Although the five participants seemed willing to participate in the workshop, in each session, at least one participant was absent due to parent-teacher meetings or late for unknown reasons. This situation affected the development of the training since the workshop was reduced to forty minutes with the primary school teachers. Lastly, one participant claimed that the workshop seemed to last forever. This feeling might have been a result of the institution changing the schedule of one of our sessions.

Lastly, a major limitation of the present study is the sample size. These findings cannot be generalized; thus, conclusions can be drawn only from this group of participants. Future research should be implemented with larger groups of participants to analyze their perceptions regarding the use of LLMs through workshops. The perceptions of the students and the ethical use of LLMs should also be studied. In Costa Rica, this field could be further developed by analyzing long-term efficacy and the ethical practices.

Conclusions

This study has shown that LLMs are considered a significant tool in education. These five EFL Costa Rican teachers have been using them to modify their lesson plans, improve their writing, and adapt their classes for students with special needs. As a result, using LLMs has allowed them to personalize learning materials while reducing the time used to create them. However, a potential over-reliance on these tools could be identified as problematic if these professionals do not check what the LLM created. Regarding ethical practice, facilitating reflection on the use of LLMs after each workshop was essential. Requiring participants to declare the utilization of LLMs in their documents was crucial for promoting academic integrity.

Regarding the studies on LLMs in Latin America, this study aims to contribute by providing empirical evidence of the perceptions of five EFL Costa Rican teachers. Studying the perceptions of EFL teachers can provide insights into policymakers since they can identify (1) current practices, (2) challenges, (3) ethical practices. Additionally, future research should focus on attitudes towards workshops since one participant showed a resistance towards the training. Research on long-term effects of LLM as a pedagogical tool should also be studied, as well as the related issues of teachers' burnout and how LLMs can mitigate.

References

ALHUSAIYAN, Eman, "A systematic review of current trends in artificial intelligence in foreign language learning." In: *Saudi Journal of Language Studies,* 5, 1, 2024, pp. 1-16. Accessed at: https://doi.org/10.1108/SJLS-07-2024-0039

ARORA, Neeraj; CHAKRABORTY, Ishita; NISHIMURA, Yohei, "AI-human hybrids for marketing research: Leveraging Large Language Models (LLMs) as collaborators." In: *Journal of Marketing,* 89, 2, 2025, pp. 43-70. Accessed at: https://doi.org/10.1177/00222429241276529

BARREDA MEDINA, Remy Felipe, "Education 4.0 in Latin America: Comparative analysis of the use of artificial intelligence in innovative teaching practices." In: *Journal of Information Systems Engineering and Management,* 10, 36, pp. 2468-4376. Accessed at: https://doi.org/10.52783/jisem.v10i36s.6635

BOPP, Chris; FOERST, Anne; KELLOGG, Brian, "The case for LLMs workshops." In: *SIGCSE 2024: The 55th ACM Technical Symposium on Computer Science Education,* 2024, pp. 130-136. Accessed at:
https://doi.org/10.1145/3626252.3630941

BRAUN, Virginia; CLARKE, Victoria, "Thematic analysis." In: *APA Handbook of Research Methods in Psychology,* 2, 2012, pp. 57-71.

COHEN, Loius; MANION, Lawrence; MORRISON, Keith, *Research methods in education.* New York: Routledge, 2018.

CHARPENTIER-JIMENEZ, William, "Evaluación de la inteligencia artificial y de la calibración de docentes en los cursos de escritura de inglés como lengua extranjera en una universidad pública costarricense." In: *Revista Actualidades Investigativas en Educación,* 24, 1, 2024, pp. 1-25. Accessed at:
https://doi.org/10.15517/aie.v24i1.55612

CHEN, Andong; CHEN, Kehai; XIANG, Yang; BAI, Xuefeng; YANG, Muyun; FREN, Yang; ZHAO, Tiejun; ZHANG, Min, "LLM-based translation inference with interactive bilingual understanding." In: *arXiv,* 3, 2025, pp. 1-17. Accessed at: https://arxiv.org/abs/2410.12543

DIXON, Neil; COX, Andrew, "Fiction writing workshops to explore staff perceptions of artificial intelligence (AI) in higher education." In: *AI & Society* 40, 2025, pp. 3983-3998. Accessed at:
https://link.springer.com/article/10.1007/s00146-024-02157-x#citeas

DURGUNGOZ, Ahmet; KHARRUFA, Ahmed, "'ChatGPT is like a study buddy, a teacher and sometimes just a friend': A longitudinal exploration of students' interactions, perception and acceptance." In: *Interactive Learning Environments,* 2025, pp. 1-20. Accessed at:
https://doi.org/10.1080/10494820.2025.2509276

FLORIDI, Luciano. "AI as agency without intelligence: On ChatGPT, large language models, and other generative models." In: *Philosophy & Technology,* 35, 15, 2023, pp. 1-7. Accessed at: https://doi.org/10.1007/s13347-023-00621-y

GAO, Dehong; CHEN, Kaidi; CHEN, Ben; DAI, Huangyu; JIN, Linbo; JIANG, Wen; NING, Wei; YU, Shanqing; XUAN, Qi; CAI, Xiaoyan; YANG, Libin; WANG, Zhen, "LLMs-based machine translation for E-commerce." In: *Expert Systems with Applications,* 258, 2024. Accessed at:
https://doi.org/10.1016/j.eswa.2024.125087

HAZEYMEH, Wafa A; BOUZENOUN, Abdeldjalil; REMACHE, Abdelghani, "ELF instructors' perspective on using AI application in English as a foreign language teaching and learning." In: *Emerging Science Journal,* 8, 2024, pp. 73-87. Accessed at: http://dx.doi.org/10.28991/ESJ-2024-SIED1-05

LEE, Saeun; ERONEN, Juuso, "Transforming English education in Japan by utilizing large language models for tailoring leaning and diverse skill development." In: *Discovery Education,* 4, 403, 2025, pp. 1-19. Accessed at: https://doi.org/10.1007/s44217-025-00856-1

LING ONG, Jasmine Chiat; YIN-HIS CHAN, Shelley; WILLIAM, Wasswa; BUTTE, Atul, NIGAM, Shah; TJIEN Chew, Lita Sui; NAN, Liu, DOSHI-VELAZ, Finale; LU, Wei; SAVULESCU, Julián; WEI TING, Daniel Shue, "Ethical and regulatory challenges of large language models in medicine." In: *Lacet Digit Health,* 6, 6, 2024, pp. 428-432. Accessed at: 10.1016/S2589-7500(24)00061-X

LIU, Jing; BIN SIHES, Ahmad Johari; LU, Ye, "How do generative artificial intelligence (AI) tools and large language models (LLMs) influence language learners' critical thinking in EFL education? A systematic review." In: *Smart Learning Environments,* 12, 48, 2025, pp. 1-35. Accessed at: https://slejournal.springeropen.com/articles/10.1186/s40561-025-00406-0

KERR, Robert, "The effects of a short-term workshop on in-service language teachers' perceptions and use of generative AI." In: *The Journal of Modern British & American Language & Literature*, 42, 3, 2024, pp. 147-170. Accessed at: 10.21084/jmball.2024.08.42.3.147

KUNDU, Arnab; BEJ, Tripti, "Transforming EFL teaching with AI: A systematic review of empirical studies." In: *International Journal of Artificial Intelligence in Education,* 2025, pp. 1-34. Accessed at: https://doi.org/10.1007/s40593-025-00470-0

KOC, Fatma; SAVAS, Petihan, "The use of artificially intelligent chatbots in English language learning: A systematic meta-synthesis study of articles published between 2010 and 2024." In: *ReCALL,* 37, 1, 2025, pp. 4-21. Accessed at: 10.1017/S0958344024000168

MERRIAM, Sharan, *Qualitative Research.* San Francisco: Jossey-Bass, 2009.

MOHEBBI, Ahmadreza, "Enabling independence and self-regulation in language education using AI tools: A systematic review." In: *Cogent Education,* 12, 1, 2025, pp. 1-18. Accessed at: https://www.tandfonline.com/doi/epdf/10.1080/2331186X.2024.2433814?needAccess=true

MORENO ORDÓÑEZ, Rosa Paola, *EFL teacher's perceptions toward using artificial intelligence (AI) in English teaching practice at a private language institute in Loja, cycle*

February – Jine 2024. Thesis. Bandera de la Loja Loja: Universidad Nacional de la Loja.

ONG, Jasmine; CHANG, Shelley; WILLIAM, Wasswa; BUTTE, Atul; SHAH, Nigam; CHEW, Lita Sui Tjien; LIU, Nan; DOSHI-VELEZ, Finale; LU, Wei; SAVULESCU, Julian; TING, Daniel, "Ethical and regulatory challenges of large language models in medicine." In: *The Lancet Digital Health,* 6, 6, 2024, pp. e428-432. Accessed at: 10.1016/S2589-7500(24)00061-X

QIU, Jianing; LAM, Kyle; ACHARYA, Amish; WONG, Tien Yin; DARZI, Ara; YUAN, Wu; TOPOL, Eric J., "LLM-based agentic systems in medicine and healthcare." In: *Nature Machine Intelligence,* 6, 12, 2024, pp. 1418-1420. Accessed at: https://doi.org/10.1038/s42256-024-00944-1

SALDAÑA, Johnny, *El manual de codificación para investigadores cualitativos.* Los Angeles/ London/ NewDelhi/ Singapore/ Washinton DC: Sage Publications, 2016.

SONGIENGCHAI, Saifon, "Implementation of artificial intelligence (AI): Chat GPT for learning among Thai students in higher education". In: *International Journal of Education and Literacy Studies,* 13, 1, 2025, pp. 302-312. Accessed at: http://dx.doi.org/10.7575/aiac.ijels.v.13n.1p.302

TELENTI, Amalio; AULI, Michael; HIE, Brian L.; MAHER, Cyrus; SARIA, Suchi; IOANNIDIS, John A., "Large language models for science and medicine." In: *European Journal of Clinical Investigation,* 54, 6, 2025. Accessed at: https://doi.org/10.1111/eci.14183

TRAGA, Philippakos, Z. A.; ROCCONI, L., "AI Literacy: Elementary and secondary teachers' use of AI-tools, reported confidence, and professional development needs." In: *Education Sciences,* 15, 9, 2025, pp. 2-25. Accessed at: https://www.mdpi.com/2227-7102/15/9/1186

VIK, Bendik, "Large language models in L2 English upper secondary teaching: Exploring teacher's understanding and utilisation." In: *Universitas Bergenesis,* 2023. Accessed at: https://bora.uib.no/bora-xm/handle/11250/3140892

ZHAO, Huan, "EFL students' perceptions of large learning and assessment: Pre and in generative AI (GenAI) era." In: *Lenguaje,* 53, 1, 2025, pp. 1-15. Accessed at: https://doi.org/10.25100/lenguaje.v53i1S.14603