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Perceptions of Design Thinking Implementation in Ecuadorian EFL Classrooms

Percepciones de los docentes sobre la implementación del pensamiento de diseño en aulas ecuatorianas de inglés como lengua extranjera

Laura Mariscal Touzard

laura.mariscalt@ug.edu.ec

<https://orcid.org/0000-0002-7418-2797>

Facultad de Filosofía, Letras y Ciencias de la Educación / Universidad de Guayaquil
Ecuador

Mariuxi Iliana Castro Flores

mariuxi.castrof@ug.edu.ec

<https://orcid.org/0009-0003-6778-7637>

Facultad de Filosofía, Letras y Ciencias de la Educación / Universidad de Guayaquil
Ecuador

Shirley Reeves Arboleda

shirley.reevesa@ug.edu.ec

<https://orcid.org/0000-0002-0192-2934>

Facultad de Filosofía, Letras y Ciencias de la Educación / Universidad de Guayaquil
Ecuador

Martha Amelia Castillo Noriega

marthacastillo@uees.edu.ec

<https://orcid.org/0000-0002-7867-7463>

Escuela de Postgrado en Educación/ Universidad de Especialidades Espíritu Santo
Ecuador

Lidia Del Carmen Govea De Bustamante

bgovea@espol.edu.ec

<https://orcid.org/0000-0002-6770-1261>

Escuela Superior Politécnica del Litoral (ESPOL)
Ecuador

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ABSTRACT

This study explores Ecuadorian university teachers' perceptions of applying the Design Thinking (DT) approach in English as a Foreign Language (EFL) classrooms. In the Ecuadorian labor market, employers increasingly demand graduates who demonstrate not only linguistic proficiency but also critical thinking, collaboration, adaptability, and problem-solving skills. However, many university EFL programs continue to rely on traditional, teacher-centered practices that may not fully respond to these professional demands. Teachers therefore recognize the need for innovative pedagogical approaches capable of aligning language instruction with workplace competencies, and DT emerges as a promising alternative. Grounded in a mixed-methods research design, the study investigates how teachers implement the five

stages of Design Thinking and how they perceive its impact on students' EFL skill development, benefits, and contextual challenges. Unlike intervention-based research, this study does not implement a controlled experimental treatment; rather, it examines teachers' reflective experiences and professional judgments regarding the integration of DT into their existing pedagogical practices. Qualitative data were collected through semi-structured interviews with university EFL instructors, while quantitative data were obtained through a structured survey examining perceptions of improvements specially in speaking, listening, reading, writing, and vocabulary. Findings indicate strong perceived enhancement in oral communication fluency and confidence, engagement, alongside increased learner autonomy and critical thinking. Despite constraints related to time and curriculum alignment, teachers perceive DT as a transformative and context-responsive framework for Ecuadorian public university EFL settings.

Keywords: Design Thinking, EFL pedagogy, mixed-methods research, teacher perceptions, communicative competence

RESUMEN

Este estudio explora las percepciones de docentes universitarios ecuatorianos sobre la aplicación del enfoque de Design Thinking (DT) en aulas de inglés como lengua extranjera (EFL). En el mercado laboral ecuatoriano, los empleadores demandan cada vez más profesionales que no solo demuestren competencia lingüística, sino también pensamiento crítico, colaboración, adaptabilidad y habilidades de resolución de problemas. Sin embargo, muchos programas universitarios de EFL continúan basándose en prácticas tradicionales centradas en el docente que pueden no responder plenamente a estas demandas profesionales. Por ello, los docentes reconocen la necesidad de enfoques pedagógicos innovadores capaces de alinear la enseñanza del idioma con las competencias del entorno laboral, y el DT surge como una alternativa prometedora. Con un diseño de investigación de métodos mixtos, este estudio adopta un enfoque exploratorio para analizar cómo los docentes implementan las cinco etapas del Design Thinking y perciben su impacto en el desarrollo de las habilidades de inglés como lengua extranjera (EFL), así como en los beneficios y desafíos contextuales. A diferencia de investigaciones de tipo experimental, este estudio no aplica un tratamiento controlado; más bien, analiza las experiencias reflexivas y los juicios profesionales de los docentes sobre la integración del DT en sus prácticas pedagógicas habituales. Los datos cualitativos se recolectaron mediante entrevistas semiestructuradas con docentes universitarios de EFL, mientras que los cuantitativos se obtuvieron mediante una encuesta estructurada que examinó las percepciones de mejora, en especial en las habilidades de expresión oral, comprensión auditiva, lectura, escritura y vocabulario. Los resultados indican una fuerte percepción de mejora en la comprensión y la fluidez oral, en el compromiso y la confianza, así como un

incremento de la autonomía del estudiante y del pensamiento crítico. A pesar de las limitaciones de tiempo y de la alineación curricular, los docentes perciben el DT como un enfoque transformador y contextualizado para los entornos de EFL en las universidades públicas ecuatorianas.

Palabras clave: Design Thinking, pedagogía EFL, investigación de métodos mixtos, percepciones docentes, competencia comunicativa

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INTRODUCTION

The growing demand for professionals who possess not only linguistic proficiency but also critical thinking, collaboration, and problem-solving skills has prompted educators to explore innovative approaches in English as a Foreign Language (EFL) instruction. In higher education contexts, traditional teacher-centered methodologies may not fully support the development of these competencies. As a result, pedagogical frameworks such as Design Thinking have gained attention for their potential to promote student-centered learning, meaningful communication, and real-world problem solving. Within this context, understanding teachers' perceptions of implementing Design Thinking in EFL classrooms becomes essential for evaluating its educational value.

Despite this shift, many university EFL programs continue to rely on conventional instructional practices that limit students' opportunities to develop both language proficiency and transferable professional skills. Recent educational research shows the importance of integrating pedagogies that simultaneously support communicative competence and higher-order thinking. In this regard, Design Thinking has been identified as a learner-centered framework that fosters creativity, collaboration, and analytical reasoning in language classrooms (Cleminson & Cowie, 2021; Cevikbas & Kaiser, 2022). Accordingly, this study explores Ecuadorian university teachers' perceptions of implementing Design Thinking in EFL classrooms, with particular attention to how they apply its five stages: Empathize, Define, Ideate, Prototype, and Test in their instructional practices.

Emerging research suggests that Design Thinking may contribute to the development of integrated language skills, particularly oral communication, writing, organization, and collaborative interaction. For example, research indicates that DT-based tasks can strengthen speaking performance, engagement, and language confidence through iterative communication and real-world problem-solving activities (Almalki, 2023; Swallow & Tomalin, 2024). However, limited research has examined teachers' professional judgments regarding how this approach influences students' language-learning processes.

Although Design Thinking has gained attention as a transformative pedagogical model, integrating it into university curricula may pose contextual challenges, including alignment with curricula, classroom management, and instructional time. Prior research highlights that innovative methodologies often require adjustments in lesson planning, institutional support, and pedagogical practices to be effectively implemented (Lake et al., 2024; Wang, 2024). Consequently, understanding teachers' perceptions of both benefits and constraints becomes essential for evaluating the feasibility of adopting DT in EFL contexts. Therefore, this mixed-methods study draws on qualitative interview data and quantitative survey findings to examine the perceived benefits and challenges Ecuadorian university teachers identify when integrating

the Design Thinking approach into the EFL curriculum, offering a comprehensive perspective on its classroom applications and contextual implications.

Despite the growing uptake of Design Thinking (DT) in educational contexts, the literature has been predominantly oriented toward student learning outcomes, with comparatively limited attention to teachers' perspectives and their situated experiences of implementation (Yu et al., 2024; Retna, 2015). This imbalance constrains understanding of how DT is enacted in practice, particularly given that pedagogical innovation is mediated by teachers' beliefs, institutional conditions, and contextual constraints. Moreover, empirical research examining DT within public university settings in Latin America remains underrepresented in the field. Addressing this gap is critical, as exploring teachers' perceptions can illuminate how DT is interpreted, adapted, and evaluated in context, thereby providing a more practice-oriented account of its pedagogical affordances and limitations within EFL instruction.

Therefore, this study aims to examine Ecuadorian university teachers' perceptions regarding the implementation of the Design Thinking (DT) approach in EFL classrooms within a public university context. Specifically, it seeks to answer the following research questions: (a) How do Ecuadorian university TEFL teachers perceive and report applying the five stages of the Design Thinking process, such as Empathize, Define, Ideate, Prototype, and Test, in their English language teaching practices? (b) To what extent do university English language teachers perceive that implementing the Design Thinking approach enhances students' EFL skills, including speaking, listening, reading, writing, and vocabulary development? (c) What perceived benefits and challenges do Ecuadorian university English language teachers identify when integrating the Design Thinking approach into the EFL curriculum? This mixed-methods study draws on qualitative interview data and quantitative survey findings to provide a comprehensive understanding of teachers' professional judgments, classroom applications, and contextual considerations related to Design Thinking in Ecuadorian higher education.

Design Thinking

Design Thinking (DT) is a human-centered approach to innovation and problem-solving that promotes creativity, empathy, collaboration, and iterative learning. Originating in the field of design and innovation, DT encourages learners to understand users' needs, generate ideas, and refine solutions through continuous feedback and experimentation (Brown, 2009; Liedtka, 2018). The framework is commonly structured around five stages: Empathize, Define, Ideate, Prototype, and Test, which guide learners through cycles of exploration and improvement. In educational contexts, DT has been associated with active participation, critical thinking, and collaborative learning, making it particularly relevant for language classrooms that aim to promote meaningful communication and problem-solving skills (Cleminson & Cowie, 2021).

Design Thinking and EFL

Ongoing studies have increasingly examined the integration of Design Thinking (DT) into English as a Foreign Language (EFL) instruction, highlighting its potential to foster learner-centered practices and enhance communicative engagement. Research in higher education demonstrates that DT promotes active participation, collaboration, and creative use of language during classroom activities (Cleminson & Cowie, 2021; Almalki, 2023). In Latin American contexts, studies indicate that educators perceive DT as a strategy that not only strengthens communicative competence but also develops problem-solving skills and critical thinking among TEFL students (Almache-Granda et al., 2024; Reyes-Cruz & Salazar-Navarro, 2024). Moreover, meta-analytic evidence supports positive effects on student engagement and higher-order cognitive skills (Yu et al., 2024).

Design Thinking phases

The implementation of the Design Thinking process in EFL classrooms is typically structured around five iterative stages: Empathize, Define, Ideate, Prototype, and Test. During the Empathize stage, students explore real-life contexts through interviews, surveys, and discussions, which promote meaningful interaction and active listening. In the Define stage, learners synthesize information and formulate clear problem statements, fostering analytical thinking. The Ideate stage encourages brainstorming and collaborative dialogue, allowing students to generate multiple solutions while using English. As noted by Cleminson and Cowie (2021), these stages create opportunities for authentic language use, particularly in speaking and interaction. Similarly, Almache et al. (2024) highlight that this structured process supports the development of communicative and professional competencies in EFL contexts.

The final stages, Prototype and Test, emphasize production, feedback, and iterative refinement of ideas. Students develop presentations or project-based solutions, which are later evaluated through peer feedback and reflection. This process promotes fluency, confidence, and spontaneous language use, as learners refine their ideas and improve their performance over time. Reyes-Cruz and Salazar-Navarro (2024) emphasize that these stages are essential for integrating assessment and reflective learning into EFL instruction, while Zaky (2024) highlights the pedagogical value of guiding students through iterative cycles of practice and improvement. Overall, implementing these stages transforms the classroom into a student-centered environment where language learning is connected to problem-solving, collaboration, and real-world communication.

Design Thinking Implementation

Design Thinking has been consistently associated with the development of EFL communicative competence, as it integrates speaking, listening, reading, writing, and vocabulary in meaningful contexts. Through collaborative tasks such as interviews, discussions, and presentations, students actively use the language to express ideas and solve real-world

problems. This approach promotes authentic communication and interaction, allowing learners to practice English beyond isolated exercises. As highlighted by Cleminson and Cowie (2021), Design Thinking creates opportunities for meaningful language use, while Almache et al. (2024) emphasize its role in strengthening communicative competence in EFL classrooms.

Another key benefit of Design Thinking is its contribution to higher-order thinking skills, including critical thinking, problem-solving, and creativity. By engaging in stages such as defining problems, generating ideas, and evaluating solutions, students must analyze information and make decisions in the target language. This process connects language learning with cognitive development, allowing learners to use English as a tool for reasoning and innovation. Reyes-Cruz and Salazar-Navarro (2024) highlight that iterative processes support reflective thinking, while Zaky (2024) emphasizes the pedagogical value of integrating problem-solving into language instruction.

Design Thinking also promotes student-centered learning by fostering engagement and autonomy in the classroom. Students take an active role in generating ideas, making decisions, and developing solutions, which increases their participation and responsibility in the learning process. This shift from teacher-centered instruction to learner-driven activities encourages motivation and deeper involvement in tasks. As noted by Cleminson and Cowie (2021), collaborative and interactive environments enhance engagement, while Almache et al. (2024) report that students become more autonomous and responsible when participating in Design Thinking activities.

Despite these benefits, implementing Design Thinking presents significant challenges, particularly due to time and curriculum constraints. Teachers often need additional preparation time to design activities and adapt the methodology to existing course structures. The iterative nature of the process also requires extended classroom time, which may not always be available. Reyes-Cruz and Salazar-Navarro (2024) note that integrating Design Thinking into formal curricula requires careful planning, while Zaky (2024) emphasizes that the approach demands more structured preparation than traditional teaching methods.

Another significant challenge relates to the complexity of implementing Design Thinking in classroom settings. Teachers may face difficulties managing large groups, ensuring that all students understand the different stages, and providing adequate scaffolding throughout the process. Students may initially struggle to follow the non-linear structure of Design Thinking, which can affect the progression of tasks. As highlighted by Cleminson and Cowie (2021), guidance is essential for effective implementation, while Almache et al. (2024) note that teacher support plays a key role in helping students navigate the stages successfully.

Theoretical Foundations

The adoption of DT in EFL classrooms aligns with multiple complementary learning theories. Constructivist approaches emphasize knowledge development through active

engagement, social interaction, and problem-solving, aligning with the collaborative, iterative processes central to DT (Schcolnik et al., 2006). Communicative Language Teaching further underscores the role of meaningful interaction and authentic communication in language acquisition (Richards, 2006). Task-Based Language Learning highlights that students develop linguistic competence through participation in purposeful tasks requiring negotiation of meaning and collaboration (Ellis, 2003). Collectively, these frameworks support DT as a methodology that integrates language development with critical thinking, creativity, and learner autonomy.

METHODOLOGY

Context

This study was conducted at a public university in Ecuador with a staff of 20 EFL teachers and an enrollment of over 10,000 students, all of whom are required to take English modules as part of their academic curricula. It is developing students' communicative skills in foreign languages, especially English. The program is structured into five progressive modules aligned with the Common European Framework of Reference for Languages (CEFR): Module 1 corresponds to level A1, Module 2 to A2, Module 3 to B1, Module 4 to B1+, and Module 5 to B2. Each module focuses on strengthening listening, reading, speaking, and writing skills, preparing students to communicate effectively in both academic and professional contexts.

Research approach and method

This study adopts a mixed-methods approach with a convergent parallel design, combining both qualitative and quantitative data to provide a comprehensive understanding of Ecuadorian university teachers' perceptions regarding the implementation of the Design Thinking (DT) approach in EFL classrooms. This mixed-methods approach is a research design in which qualitative and quantitative data are collected simultaneously, analyzed separately, and then merged to compare and integrate the results for a comprehensive interpretation of the research problem. (Creswell and Creswell, 2014). The research is framed within a descriptive-exploratory scope, as it seeks to describe teachers' perceptions while also exploring in depth how they apply the five stages of the Design Thinking process (Empathize, Define, Ideate, Prototype, and Test) in their teaching practices. Since the study does not manipulate variables or measure causal relationships, it is classified as a non-experimental, perception-based study focused on pedagogical experiences rather than measurable learning outcomes.

The sample was selected through a non-probabilistic purposive sampling strategy, specifically criterion-based and voluntary sampling to respect the ethical procedures of this public Institution. The participants were university English language teachers who had previously implemented the Design Thinking approach in their EFL classes and agreed to participate. This selection criterion ensured that respondents possessed direct pedagogical

experience with the approach under investigation (Coyne, 1997). Although the sample is not statistically generalizable, it is theoretically relevant and appropriate for exploratory perception-based research, as it provides informed insights from practitioners with firsthand experience in applying Design Thinking within a public university EFL.

Participants

The participants of this study were university EFL teachers who taught blended B1 and B1+ courses for more than 5 years. Each course consisted of 56 in-person instructional hours and 56 hours of autonomous learning. The quantitative survey was administered to seven EFL teachers (N=7) who met the inclusion criteria and had implemented the DT approach in their courses during the last two semesters. Five of these seven teachers also participated in the qualitative semi-structured interviews. The participants received training in Design Thinking and had prior experience integrating DT stages into speaking and skills-based activities within their regular teaching practice. To ensure confidentiality and anonymity, participants in this study are identified using the label “T” (for teacher) followed by the initial letter of their last name (e.g., T.M., T.G.).

Techniques and instruments to collect information

This study employed a combination of data collection tools, including surveys and interviews, to systematically gather, analyze, and interpret data to address the research questions. These instruments contributed to ensuring the study’s credibility, validity, and reliability. The quantitative component consists of a Likert-scale survey designed to examine the perceptions of seven EFL teachers (N=7) regarding the impact of Design Thinking on students’ EFL skills, as well as the perceived benefits and challenges associated with its implementation. The instrument included items measured on a four-point Likert scale: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD), allowing participants to express varying degrees of agreement without a neutral midpoint. (Likert, 1932). The survey was structured into sections addressing perceived enhancement of language skills, pedagogical benefits, and contextual constraints.

The qualitative component involves semi-structured interviews with five teachers, which allow for deeper exploration of their instructional practices and professional reflections. According to Creswell and Poth (2016), interviews constitute a powerful qualitative method for capturing in-depth perceptions, emotional responses, and contextual dynamics that are often not fully accessible through quantitative instruments alone. The interview protocol was organized into three sections, each aligned with a research question. Section One focused on how teachers applied the five stages of the Design Thinking process—Empathize, Define, Ideate, Prototype, and Test—within their EFL teaching practices. Section Two explored teachers’ perceptions of Design Thinking’s impact on students’ language skills, including speaking, listening, reading, writing, and vocabulary development. Section Three examined the perceived benefits and

challenges of integrating Design Thinking into the EFL curriculum, including autonomy, engagement, professional growth, time constraints, and curriculum alignment. Data from both strands were collected within the same research phase and later integrated during the interpretation stage, which characterizes the study as a convergent mixed-methods design. This methodological integration enhances the validity of the findings by triangulating numerical trends with detailed experiential accounts.

The study followed ethical principles throughout the research process. Participants provided informed consent, and confidentiality was ensured. All data collected were used exclusively for research purposes. Participation was voluntary, and participants were informed that they could withdraw at any time without any negative consequences. The study did not interfere with regular class activities. All information was anonymized and securely stored on password-protected devices accessible only to the research team to protect participants' privacy and well-being.

AI-Assisted Analysis

Artificial intelligence tools were used in a supporting capacity during the qualitative data analysis phase of this study. Specifically, ChatGPT (OpenAI, 2024) was employed to assist with the initial organization of interview transcripts, the identification of candidate themes, and the generation of preliminary codes from the qualitative data. All AI-generated outputs were subsequently reviewed, validated, and refined by the research team. Final thematic decisions, interpretive judgments, and the selection of representative quotes were made exclusively by the researchers, in accordance with established standards for qualitative inquiry (Creswell & Poth, 2016). The use of AI tools in this study was limited to organizational and analytical support; no AI-generated text was incorporated into the findings or conclusions without researcher oversight and verification.

Findings

A descriptive statistical analysis of the survey data was conducted to determine the distribution of teachers' perceptions regarding the impact of Design Thinking on EFL skills, as well as the perceived benefits and challenges of its implementation. Frequencies and percentages were calculated for each Likert-scale item to identify overall trends. Additionally, the interview data were coded using AI-assisted tools and subsequently reviewed and analyzed by the researchers to identify recurring themes, patterns, and meaningful insights aligned with the research questions.

Quantitative Data

Table 1

Descriptive Statistical Analysis of survey section 1: Teachers' perceptions of EFL Skill Development when Implementing Design Thinking

Skills	SA	A	D	SD
Speaking, interaction, and comprehension	28.6%	71.4 %	0%	0%
Speaking fluency	28.6 %	71.4 %	0%	0%
Listening comprehension	14.3 %	85.7 %	0%	0%
Reading comprehension	14.3 %	85.7%	0%	0%
Writing after feedback loops	14.3 %	85.7 %	0%	0%
Organization, coherence, creativity	14.3 %	85.7%	0%	0%
Vocabulary use	14.3 %	71.4 %	14.3%	0%
Vocabulary retention	14.3 %	71.4%	14.3%	0%

Note: Elaborated by Mariscal, Castro, Reeves, Castillo, Govea.

The quantitative results presented in Table 1 suggest a high level of agreement among participants within this limited sample regarding the impact of Design Thinking on students' EFL skills development. The only exceptions were vocabulary use and vocabulary retention, where a small proportion of participants expressed disagreement. Overall, these results suggest that teachers perceive Design Thinking as a pedagogical approach that supports the development of multiple language skills through collaborative, inquiry-based learning activities. Previous studies have similarly reported that Design Thinking environments promote active engagement, problem-solving, and communication in language learning contexts, contributing to improvements across receptive and productive skills (Cleminson & Cowie, 2021; Kang, 2021).

Particularly notable were the results for speaking interaction, comprehension, and fluency, which obtained the highest proportion of Strongly Agree responses (28.6%), with the remaining 71.4% selecting Agree. These findings indicate that teachers perceive Design Thinking as supporting the development of oral communication skills. This perception may be explained by the collaborative and presentation-based nature of Design Thinking tasks, which require students to discuss ideas, negotiate solutions, and present outcomes. Previous research has highlighted that Design Thinking encourages communicative interaction, spontaneous language use, and collaborative dialogue, which can contribute to improvements in speaking fluency and communicative competence in EFL settings (Almalki, 2023; Cleminson & Cowie, 2021).

Although the overall results were positive, vocabulary use and vocabulary retention showed slightly lower levels of agreement, with 86% of teachers indicating Strongly Agree or Agree and 14.3% indicating Disagree. This difference may reflect the nature of vocabulary

acquisition, which often requires extended exposure, repetition, and reinforcement over longer instructional periods. While Design Thinking activities promote contextualized language use and problem-solving communication, the consolidation of vocabulary knowledge may depend on sustained practice across multiple learning cycles. Previous studies have suggested that vocabulary development in project-based or design-oriented learning environments occurs progressively as learners repeatedly apply new language during inquiry and collaborative tasks (Nazim & Mohammad, 2022; Weganofa et al., 2024). Therefore, the slightly lower agreement may indicate that some teachers perceive vocabulary retention as requiring longer-term instructional reinforcement beyond the timeframe of a single Design Thinking project.

Table 2

Descriptive Statistical Analysis of survey section 2: Teachers' perceptions of Benefits when integrating DT into the EFL curriculum when implementing DT

Benefits	SA	A	D	SD
Increased motivation and participation	42.9 %	57.1 %	0%	0 %
Increased confidence in English use	42.9 %	57.1 %	0%	0 %
Enhanced critical and creative thinking	42.9 %	57.1%	0%	0 %
More innovative lesson design	42.9 %	57.1 %	0%	0 %
More cooperative and respectful	28.6 %	71.4 %	0%	0 %
Understanding others' perspectives	28.6 %	71.4 %	0%	0 %
Greater ownership and autonomy	28.6 %	71.4 %	0%	0 %
Improved lesson planning	28.6 %	71.4 %	0%	0 %
Greater student-centered focus	28.6 %	71.4 %	0%	0 %
Increased professional reflection	28.6 %	71.4 %	0%	0 %
Better understanding of learners' needs	28.6 %	71.4%	0%	0 %

Note: Elaborated by Mariscal, Castro, Reeves, Castillo, Govea.

The results presented in Table 2 indicate strong agreement among teachers regarding the benefits of implementing Design Thinking in EFL classrooms. Across all survey statements, most of them selected either Strongly Agree or Agree, reflecting highly positive perceptions of the pedagogical value of this approach. These findings suggest that participants in this study perceive Design Thinking as a methodology that promotes active learning, engagement, and innovation in language teaching. Previous research has similarly highlighted that Design Thinking encourages collaborative inquiry, learner-centered instruction, and meaningful participation in classroom activities (Cleminson & Cowie, 2021; Kang, 2021).

One of the most highly rated benefits was increased motivation and participation, which obtained 94.0% agreement. Similarly, confidence in English use reached 93.9% agreement.

These results suggest that teachers perceive Design Thinking activities as fostering communicative environments in which students feel more engaged and willing to participate. The collaborative, problem-solving nature of DT tasks may encourage students to take risks with the language and to actively contribute during discussions and presentations. Previous studies have reported that design-oriented learning environments can increase learner motivation and communicative confidence by promoting authentic interaction and collaborative problem solving (Swallow & Tomalin, 2024; Almalki, 2023).

Another highly valued outcome was the development of enhanced critical and creative thinking, which obtained 93.9% agreement, along with more innovative lesson design (93.9%). These findings indicate that teachers perceive Design Thinking as fostering higher-order thinking skills while simultaneously influencing pedagogical practices. By engaging students in processes such as problem identification, idea generation, and solution design, the approach encourages analytical reasoning and creativity. Previous research has maintained that DT supports innovation and creativity in educational contexts by promoting structured ideation, experimentation, and reflective problem-solving (Baum, 2021; Baričević & Luić, 2023).

Table 3
Descriptive Statistical Analysis of survey section 3: Teachers' perceptions of challenges when integrating DT into the EFL curriculum when implementing DT

Challenges	SA	A	D	SD
Integration into the existing curriculum requires extra effort	14.3 %	71.4 %	14.3 %	0 %
Managing a large number of students	14.3 %	42.9 %	42.9 %	0 %
Limited time to carry out DT stages	0 %	42.9 %	57.1 %	0 %
Student comprehension of phases is challenging	0 %	42.9 %	57.1 %	0 %
Low student motivation hinders tasks	0 %	42.9 %	57.1 %	0 %
Students resistant to traditional mindset change	0 %	42.9 %	57.1 %	0 %
Collaboration and teamwork dynamics are challenging	0 %	42.9 %	57.1 %	0 %
Limited access to technology interferes	0 %	42.9 %	57.1 %	0 %
Adapting DT to different learning styles is difficult	0 %	42.9 %	57.1 %	0 %
Lack of resources limits creativity	0 %	28.6 %	71.4 %	0 %

Note: Elaborated by Mariscal, Castro, Reeves, Castillo, Govea.

The results presented in Table 3 indicate that teachers perceive several challenges when implementing Design Thinking (DT) in EFL classrooms. One of the most notable concerns relates to the effort required to incorporate this methodology into existing instructional structures. Specifically, 85.7% of teachers (14.3% strongly agree; 71.4% agree) indicated that integrating DT into the existing curriculum requires extra effort, suggesting that implementing DT often demands additional planning, adaptation of course objectives, and restructuring of learning activities. Previous research has similarly reported that integrating Design Thinking

into educational settings requires curricular adjustments and instructional redesign to align innovative methodologies with institutional requirements (Shé et al., 2022; Wang, 2024). These findings suggest that while teachers recognize the pedagogical value of DT, they also acknowledge the additional preparation required to successfully integrate it into EFL courses.

Another challenge identified by teachers relates to managing large numbers of students during DT activities, with 57.2% of teachers (14.3% strongly agree; 42.9% agree) perceiving this as a potential difficulty. Design Thinking typically involves collaborative problem-solving, group discussions, and iterative activities that require the instructor's active facilitation. In larger classrooms, coordinating teamwork, monitoring group interactions, and providing feedback may become more complex. Previous studies have noted that while DT promotes collaborative learning and communication, classroom management can become more demanding in large-group contexts where teachers must balance facilitation with instructional guidance (Cleminson & Cowie, 2021; Lake et al., 2024). These findings suggest that class size may affect how easily teachers can implement interactive DT activities.

Finally, several potential challenges received 42.9% agreement, including limited time to carry out DT stages, student comprehension of DT phases, low student motivation, resistance to traditional mindset change, collaboration dynamics, limited access to technology, and adapting DT to different learning styles. These results suggest that although some teachers recognize these issues as challenges, the majority did not perceive them as major barriers. Interestingly, teachers generally did not consider lack of resources a significant limitation, as 71.4% disagreed with the statement that lack of resources limits creativity. This perception aligns with research suggesting that Design Thinking develops creativity, problem-solving, and flexible use of available materials rather than dependence on technological or material resources (Sotlikova, 2023; Swallow & Tomalin, 2024). Therefore, teachers may perceive DT as a methodology that can still be effectively implemented even in resource-constrained educational contexts.

Qualitative data analysis

The table below comprises the teachers' insights shared during the interview. The data were organized and classified into six themes that captured their perceptions after 10 weeks of Design Thinking implementation. The themes were: (1) Fluency and Confidence, (2) Motivation and engagement, (3) Cognitive structuring, (4) Feedback and Reflection, (5) skills developed beyond English, and (6) Challenges and resolutions.

Table 4

Theme and Codification of interview transcripts – Perceptions of benefits and challenges when integrating DT into the EFL curriculum

Theme	Subtheme	Code	Representative Quotes	Survey Support
Application of DT	Empathize Stage	Research-based data collection	“Students conducted interviews and surveys.” (TL) “Students engaged in secondary research.” (TM)	Better understanding of learners’ needs: 100% agreement
		Active listening & needs analysis	“Students practiced active listening during interviews.” (TA) “Reflective discussions identified communication challenges.” (TC)	Listening improvement: High agreement
		Contextualized problem awareness	“Students developed a deeper understanding of peers’ needs.” (TM) “Empathize grounded the project in authentic contexts.” (TL)	Reading & listening comprehension: High agreement
	Define Stage	Problem framing & clarification	“Students narrowed broad topics into clear problem statements.” (TAI)	Writing organization improvement: High agreement
		POV statement construction	“Students constructed a Point of View statement.” (TM) “Define strengthens coherence.” (TC)	Writing coherence: 100% agreement
	Ideate Stage	Collaborative brainstorming	“Students generated multiple solutions.” (TC) “Group brainstorming increased interaction.” (TAI)	Creative thinking: 100% agreement
		Strategic evaluation (difficulty–impact matrix)	“Students evaluated ideas using the difficulty–impact matrix.” (TM)	Critical thinking: 100% agreement
		Risk-taking & spontaneous language use	“The Ideate stage reduced fear and encouraged risk-taking.” (TM) “Students relied less on memorization.” (TC)	Speaking fluency: High agreement
	Prototype Stage	Drafting & rehearsal process	“Students created draft presentations and rehearsed.” (TA)	Speaking fluency improvement: High agreement
		Structured feedback application	“Prototypes were evaluated using likes, critiques, doubts, suggestions.” (TL)	Speaking confidence: 100% agreement
	Test Stage	Iterative revision & refinement	“Students refined solutions after peer feedback.” (TM)	Fluency & confidence improvement: High agreement
		Reflective self-evaluation	“Peer assessment reinforced self-reflection.” (TC)	Professional reflection: 100% agreement

EFL Skills Enhancement	Speaking Fluency	Reduced hesitation & spontaneous speech	“Students reduced long pauses, relied less on memorization, and communicated more spontaneously.” (TL) “Speaking fluency has noticeably increased.” (TAL) “Students demonstrate increased confidence and reduced hesitation when speaking.” (TC)	Speaking fluency: 100% agreement (28.6% SA; 71.4% A)
	Speaking Confidence	Public speaking security	“Students lost fear of speaking and developed public speaking security.” (TM) “Their confidence has increased noticeably.” (TA)	Confidence in English use: 100% agreement (42.9% SA)
	Listening Comprehension	Active listening development	“Listening improved through interviews and peer feedback.” (TL) “Students must actively listen during brainstorming and feedback sessions.” (TAL)	Listening comprehension: 100% agreement
	Writing Development	Coherence & revision loops	“Writing improved due to data analysis and structured revision cycles.” (TL) “Writing shows significant improvement in coherence and logical organization.” (TC)	Writing improvement: 100% agreement
	Reading Comprehension	Research-based learning	“Reading improved as students analyzed academic articles during the Empathize stage.” (TL) “Students demonstrate better comprehension when they research and synthesize content.” (TC)	Reading comprehension: 100% agreement
	Vocabulary Development	Lexical expansion through problem-solving	“Students expanded vocabulary through research and repeated application across stages.” (TM) “Students use more varied vocabulary during presentations.” (TAL)	Vocabulary use: 85.7% agreement Vocabulary retention: 85.7% agreement
Student-Centered Learning & Autonomy	Ownership of Learning	Learner responsibility	“Students take responsibility for generating ideas and solving problems.” (TA) “Students become researchers, analysts, designers, and presenters.” (TM)	Ownership & autonomy: 100% agreement
	Student-Centered Focus	Teacher as facilitator	“The teacher acts as a facilitator rather than a lecturer.” (TL) “Students are responsible for generating ideas and reflecting on	Student-centered focus: 100% agreement

			<i>performance.” (TC)</i>	
	Reflection	Iterative self-evaluation	<i>“Peer assessment and reflection strengthened self-evaluation.” (TL) “I now emphasize iterative learning and student autonomy.” (TC)</i>	Professional reflection: 100% agreement
Motivation & Confidence	Increased Participation	Active engagement	<i>“The level of student engagement and participation has significantly increased.” (TAL) “I observed increased motivation and engagement.” (TM)</i>	Motivation: 100% agreement (42.9% SA)
	Reduced Anxiety	Growth mindset	<i>“Students are less afraid of making mistakes.” (TC) “The Ideate stage reduced fear and encouraged risk-taking.” (TM)</i>	Confidence in English use: 100% agreement
Higher-Order Thinking	Critical Thinking	Strategic evaluation	<i>“The difficulty–impact matrix strengthened analytical reasoning.” (TM) “Students evaluate options and justify solutions in English.” (TA)</i>	Critical & creative thinking: 100% agreement
	Creativity	Idea generation	<i>“Students generate multiple solutions and negotiate ideas.” (TC) “More innovative lesson dynamics.” (TAL)</i>	Creative thinking: 100% agreement
	Problem-Solving	Structured solution design	<i>“Students refined their solutions through multiple iterations.” (TL) “Problem-solving tasks enhanced decision-making skills.” (TM)</i>	Problem-solving perception: 100% agreement
Professional Development	Innovative Lesson Design	Problem-based restructuring	<i>“My lesson planning now integrates structured stages and feedback cycles.” (TL) “I now design more innovative and engaging lessons.” (TAL)</i>	Innovative lesson design: 100% agreement
	Improved Planning	Structured planning	<i>“Lesson planning now follows a structured cycle.” (TM) “My planning has become more intentional.” (TA)</i>	Improved planning: 100% agreement
Implementation Challenges	Time Constraints	Limited time for full cycle	<i>“The main limitation was limited instructional time.” (TL) “Integrating all stages requires more preparation time.” (TAL)</i>	Time limitation: 57.1% agree
	Curriculum Integration	Extra planning effort	<i>“Integrating all stages within limited class time requires careful planning.” (TC) “Integrating DT into the existing curriculum requires extra effort.” (Survey)</i>	Curriculum integration: 85.7% agreement

	Classroom Management	Large group dynamics	<i>"Managing large groups can be challenging." (TC)</i>	Large management: 57.2% difficulty	class report
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Note. The codification process was supported by artificial intelligence (AI), which assisted the researcher in identifying themes, generating codes, and organizing representative quotes. It was followed by researcher validation. The researcher made final interpretations and thematic decisions in accordance with qualitative analysis standards.

Table 4 presents the qualitative interview data organized into six major themes related to Ecuadorian university teachers' perceptions of implementing the Design Thinking approach in EFL classrooms. These themes include EFL Skills Enhancement, Student-Centered Learning and Autonomy, Motivation and Confidence, Higher-Order Thinking, Professional Development, and Implementation Challenges.

The qualitative analysis begins with the theme EFL Skills Enhancement, which captures teachers' perceptions regarding improvements in students' language abilities during the implementation of Design Thinking in EFL classrooms. This theme includes several subthemes that reflect key areas of language development: Speaking Fluency, Speaking Confidence, Listening Comprehension, Writing Development, Reading Comprehension, and Vocabulary Development. Together, these subthemes illustrate how Design Thinking activities may contribute to both productive and receptive language skills. The findings suggest that teachers perceive the methodology as fostering communicative interaction, research-based learning, and iterative feedback processes that support language development throughout the different stages of the Design Thinking cycle. Previous studies have similarly reported that Design Thinking promotes integrated language learning through collaborative inquiry and authentic problem-solving tasks in EFL contexts (Cleminson & Cowie, 2021; Kang, 2021; Mujino et al, 2022)

Particularly notable were perceptions of speaking fluency and speaking confidence, which emerged as central outcomes of Design Thinking activities. Interview data revealed that students demonstrated greater spontaneity and reduced hesitation when speaking in English. As one teacher explained, *"students reduced long pauses, relied less on memorization, and communicated more spontaneously"* (TS), while another observed that *"speaking fluency has noticeably increased"* (TAL). Similarly, teachers assert that students developed greater confidence when presenting their ideas, with one participant noting that *"students lost fear of speaking and developed public speaking security"* (TM). These qualitative insights align with the survey findings, which show that speaking interaction, comprehension, and fluency reached 100% agreement (28.6% strongly agree; 71.4% agree). These findings suggest that participants in this study perceived improvements in students' oral communication abilities during Design Thinking activities, within the limits of this small sample. This perception may be associated with the communicative and collaborative nature of Design Thinking tasks. These results are consistent with previous research suggesting that Design Thinking encourages communicative

interaction and oral engagement through collaborative ideation, presentations, and iterative discussions (Almalki, 2023; Cleminson & Cowie, 2021).

In addition to oral communication, teachers also reported improvements in other language skills, including listening, reading, writing, and vocabulary development. Interview participants explained that their listening skills were strengthened through activities such as interviews, brainstorming sessions, and peer feedback. For example, one teacher noted that *“listening improved through interviews and peer feedback”* (TL), while another stated that *“students must actively listen during brainstorming and feedback sessions”* (TA). Similarly, teachers perceived improvements in reading comprehension when students analyzed academic sources during the Empathize stage and synthesized information for problem-solving tasks. Writing development was also associated with iterative revision processes, as teachers observed that *“writing improved due to data analysis and structured revision cycles”* (TL). Vocabulary development showed slightly lower—but still strong—agreement in the survey (85.7% agreement for vocabulary use and retention), which teachers attributed to repeated exposure and contextualized language use across the different Design Thinking stages. These findings align with studies indicating that Design Thinking can enhance reading, writing, and vocabulary development through inquiry-based learning, research activities, and iterative feedback processes in EFL classrooms (Afifi, 2023; Mujino et al., 2024; Gantsetseg & Oyun-Erdene, 2025)

The qualitative analysis also explores the theme Student-Centered Learning and Autonomy, which reflects teachers’ perceptions of how Design Thinking shifts classroom dynamics toward more learner-driven processes. This theme includes three main subthemes: Ownership of Learning, Student-Centered Focus, and Reflection. Together, these dimensions highlight how the Design Thinking approach encourages students to take a more active role in the learning process while redefining the teacher’s role as a facilitator. Previous research has pointed out that Design Thinking promotes learner-centered environments where students engage in inquiry, collaboration, and problem-solving while teachers guide the process rather than deliver content directly (Cleminson & Cowie, 2021; Kang, 2021; Shé et al., 2022). The survey results strongly support these perceptions, showing 100% agreement across these dimensions, including ownership and autonomy (28.6% strongly agree; 71.4% agree), student-centered focus (28.6% strongly agree; 71.4% agree), and professional reflection (28.6% strongly agree; 71.4% agree).

One of the most prominent aspects of this theme is ownership of learning, where teachers observed that students became more responsible for generating ideas and developing solutions throughout the Design Thinking process. Interview data indicate that students actively assumed roles typically associated with inquiry-based learning. For example, one teacher explained that *“students take responsibility for generating ideas and solving problems”* (TA),

while another noted that *“students become researchers, analysts, designers, and presenters”* (TM). These perceptions align with the survey results, where 100% of teachers agreed that Design Thinking promotes greater ownership and autonomy, suggesting that the methodology supports student agency and responsibility in the learning process. Similar findings have been reported in previous studies showing that Design Thinking fosters autonomy and active participation as learners engage in collaborative problem-solving and project-based tasks (Baričević & Luić, 2023; Sotlikova, 2023).

Another important dimension within this theme relates to student-centered focus and reflective learning. Teachers reported that the role of the instructor shifted from traditional knowledge transmission toward facilitation and guidance during the Design Thinking stages. As one participant explained, *“the teacher acts as a facilitator rather than a lecturer”* (TL), while another suggests that *“students are responsible for generating ideas and reflecting on their performance”* (TC). Reflection was also highlighted as an essential component of the learning process, particularly through peer evaluation and iterative feedback cycles. For instance, one teacher stated that *“peer assessment and reflection strengthened self-evaluation”* (TL), while another noted that *“I now emphasize iterative learning and student autonomy”* (TC). These insights, together with the 100% agreement observed in the survey, suggest that Design Thinking supports the development of learner autonomy, reflective practices, and more student-centered learning environments in EFL classrooms. These findings are consistent with research indicating that Design Thinking encourages reflective learning and collaborative inquiry while transforming classroom roles and instructional practices (Ekarina & Engliana, 2025; Wang, 2024).

The qualitative findings also highlight the theme of Motivation and Confidence, reflecting teachers’ perceptions of how Design Thinking activities influence students’ engagement and willingness to use English in the classroom. The first subtheme, Increased Participation, indicates the role of Design Thinking in fostering active student involvement during learning activities. Teachers reported that collaborative tasks such as brainstorming, discussions, and presentations encouraged students to participate more actively in class. As one teacher noted, *“the level of student engagement and participation has significantly increased”* (TAL), while another observed that *“I observed increased motivation and engagement”* (TM). These perceptions are strongly supported by the survey results, which show that 100% of teachers agreed that Design Thinking increased motivation and participation (42.9% strongly agree; 57.1% agree), indicating that teachers widely perceive the methodology as promoting active engagement in EFL learning. Similar findings have been reported in previous studies, suggesting that Design Thinking encourages participation and collaborative engagement through problem-solving tasks and interactive learning environments (Cleminson & Cowie, 2021; Baričević & Luić, 2023; Swallow & Tomalin, 2024).

The second subtheme, Reduced Anxiety, reflects teachers' observations that students became more confident when using English during Design Thinking activities. Interview participants explained that the collaborative, exploratory nature of the methodology created a supportive environment in which students felt more comfortable expressing their ideas. For example, one teacher stated that *"students are less afraid of making mistakes"* (CT), while another highlighted that *"the Ideate stage reduced fear and encouraged risk-taking"* (TM). These qualitative findings are consistent with the survey results, which show 100% agreement regarding increased confidence in English use (42.9% strongly agree; 57.1% agree). Together, these findings suggest that Design Thinking not only increases motivation but also helps create a learning environment where students feel more confident and willing to communicate in English. Previous research has similarly shown that Design Thinking promotes a supportive learning environment that encourages experimentation, risk-taking, and communicative confidence in EFL contexts (Almalki, 2023; Weganofa et al., 2024; Yu et al., 2024).

The qualitative findings also spotlight the theme Higher-Order Thinking, which reflects teachers' perceptions of how Design Thinking fosters advanced cognitive skills in EFL learning. This theme includes the development of problem-solving, critical thinking, and creativity, which teachers observed throughout the different stages of the Design Thinking process. In particular, the subtheme Problem-Solving presents how teachers believe that students engage in structured solution design and iterative improvement of their ideas. Teachers reported that students refined their proposals through multiple stages, such as brainstorming, prototyping, and testing. For example, one participant noted that *"students refined their solutions through multiple iterations"* (TL), while another explained that *"problem-solving tasks enhanced decision-making skills"* (TM). These findings suggest that the structured stages of Design Thinking support analytical reasoning and collaborative solution development, enabling students to approach language learning tasks as real-world problems that require evaluation and refinement. Previous research similarly indicates that Design Thinking promotes problem-solving and collaborative inquiry through iterative learning processes and real-world tasks (Guamán-Quintanilla et al., 2020; Baričević & Luić, 2023; Yu et al., 2024).

In addition to problem-solving, teachers also perceived notable improvements in critical thinking and creativity. Interview participants explained that Design Thinking activities encouraged students to evaluate ideas, justify their decisions, and generate innovative solutions during collaborative discussions. As one teacher noted, *"the difficulty-impact matrix strengthened analytical reasoning"* (TM), while another stated that *"students evaluate options and justify solutions in English"* (TA). Creativity was also frequently mentioned, with teachers observing that *"students generate multiple solutions and negotiate ideas"* (TC) and that Design Thinking created *"more innovative lesson dynamics"* (TA). These qualitative insights align with the survey findings, which show that 100% of teachers agreed that Design Thinking

enhances critical and creative thinking (42.9% strongly agree; 57.1% agree), indicating that the methodology is perceived as an effective approach for developing higher-order thinking skills in EFL classrooms. These results are consistent with studies suggesting that Design Thinking fosters creativity, critical reflection, and innovative problem-solving in language learning contexts (Sotlikova, 2023; Weganofa et al., 2024; Swallow & Tomalin, 2024).

The qualitative analysis also highlights the theme of Professional Development, reflecting teachers' perceptions of how implementing Design Thinking influences their pedagogical practices. This theme includes two main subthemes: Innovative Lesson Design and Improved Planning. Together, these dimensions illustrate how Design Thinking can support teachers in moving toward more structured, student-centered instruction and in redesigning lessons around iterative cycles of inquiry and feedback. This aligns with research indicating that Design Thinking in education often functions as a framework for pedagogical innovation and teacher growth, particularly through reflective planning and learner-centered task design (Kang, 2021; Cleminson & Cowie, 2021). The survey results strongly support these perceptions, with 100% of teachers agreeing on innovative lesson design and improved planning (28.6% strongly agree; 71.4% agree).

Regarding Innovative Lesson Design, teachers described how Design Thinking encouraged them to restructure lessons through stages such as brainstorming, prototyping, and testing, thereby promoting more engaging classroom dynamics. For instance, one teacher stated, *"My lesson planning now integrates structured stages and feedback cycles"* (TL), while another noted, *"I now design more innovative and engaging lessons"* (TAL). These perceptions are consistent with recent studies showing that Design Thinking supports innovation in lesson design by promoting iterative learning tasks and problem-based restructuring of classroom activities (Ekarina & Engliana, 2025; Sotlikova, 2023). Concerning Improved Planning, teachers declared that the DT cycle helped them organize lessons more intentionally. As one participant explained, *"lesson planning now follows a structured cycle"* (TM), while another added, *"my planning has become more intentional"* (TA). This is consistent with the literature, which argues that Design Thinking offers teachers a systematic planning structure that strengthens sequencing, coherence, and reflective instructional decision-making (Lake et al., 2024; Shé et al., 2022).

The qualitative findings also reveal the theme of Implementation Challenges, reflecting teachers' perceptions of the practical difficulties encountered when applying Design Thinking in EFL classrooms. This theme includes three main subthemes: Curriculum Integration, Classroom Management, and Time Constraints. These dimensions highlight contextual factors that may influence the implementation of Design Thinking within existing educational structures. Previous studies indicate that although Design Thinking promotes innovation and student-centered learning, its application often requires adjustments in instructional planning, classroom

organization, and time allocation (Lake et al., 2024; Alvarado, 2025). The survey results support these perceptions, indicating that teachers recognized several contextual challenges when integrating this approach into their teaching practice.

Regarding Curriculum Integration, teachers state that incorporating Design Thinking into existing courses requires additional planning and instructional adaptation. Participants explained that aligning the different stages of Design Thinking with institutional curricula involves redesigning activities and allocating time for research, brainstorming, and feedback cycles. For example, one teacher stated that *“integrating all stages within limited class time requires careful planning”* (TC), while another noted that *“integrating DT into the existing curriculum requires extra effort”* (Survey). These perceptions are reflected in the survey findings, where 85.7% of teachers agreed that curriculum integration requires additional effort (14.3% strongly agree; 71.4% agree). Similar findings have been reported in the literature, suggesting that implementing Design Thinking often requires curricular adjustments and more intentional lesson structuring to accommodate iterative learning processes (Shé et al., 2022; Wang, 2024).

The subthemes Classroom Management and Time Constraints further illustrate the practical challenges teachers face when implementing Design Thinking activities. Teachers reported that managing collaborative tasks with multiple student groups can increase classroom complexity. As one participant explained, *“managing large groups can be challenging”* (TC). The survey results support this perception, with 57.2% of teachers reporting difficulties related to managing large numbers of students (14.3% strongly agree; 42.9% agree). In addition, Time Constraints emerged as another relevant challenge, as teachers indicated that completing all stages of the Design Thinking cycle often requires more instructional time. One teacher noted that *“the main limitation was limited instructional time”* (TL), while another explained that *“integrating all stages requires more preparation time”* (TA). These findings align with previous research suggesting that Design Thinking requires extended time for exploration, iteration, and reflection, which may create tensions within fixed course schedules (Cleminson & Cowie, 2021; Sotlikova, 2023).

Integration of Quantitative and Qualitative Findings

Integrated analysis shows convergence between survey and interview findings. For instance, survey results indicated 100% agreement regarding improvement in speaking fluency. This quantitative trend was supported by interview data, where teachers reported that students reduced hesitation, relied less on memorization, and communicated more spontaneously during Design Thinking tasks. Therefore, both data sources suggest that teachers perceive DT as particularly beneficial for oral communication.

Research Focus	Quantitative Result	Qualitative Support	Interpretation
Speaking skills	100% agreement (28.6% SA; 71.4% A)	Teachers reported reduced hesitation, less memorization, and more spontaneous communication during DT tasks	Findings suggest that participants in this study perceived DT as supporting oral communication through interaction and iterative speaking practice
Motivation & confidence	100% agreement (42.9% SA; 57.1% A)	Teachers observed increased participation, reduced anxiety, and greater willingness to communicate	Results indicate that DT is perceived as creating a supportive and student-centered learning environment
Listening, reading, writing	100% agreement across skills	Teachers described improvements through interviews, research tasks, and feedback cycles	Data suggest that DT may support integrated language development through authentic tasks
Vocabulary development	85.7% agreement	Teachers noted vocabulary growth through repeated contextual use	Findings indicate that vocabulary development is perceived as gradual and dependent on continued exposure
Student autonomy	100% agreement	Teachers reported increased learner responsibility and active roles	Results suggest that DT promotes learner autonomy and ownership of learning
Higher-order thinking	100% agreement	Teachers described problem-solving, idea generation, and critical evaluation	Findings suggest that DT is perceived as fostering critical and creative thinking
Challenges (curriculum & time)	85.7% agreement on curriculum effort	Teachers reported need for additional planning and limited time	Results indicate that DT implementation requires adaptation within institutional constraints

The integration of quantitative and qualitative findings reveals a clear convergence between numerical trends and teachers' experiential accounts. Across all major categories, survey results were consistently supported by interview data, suggesting alignment between reported perceptions and classroom observations within this small sample.

For instance, survey findings indicated full agreement regarding improvements in speaking interaction, comprehension, and fluency. This pattern was reinforced by qualitative data, which showed that teachers reported reduced hesitation, decreased reliance on memorization, and more spontaneous communication during Design Thinking activities. Rather than suggesting objective improvement, these findings indicate that participants in this study perceived Design Thinking as supporting oral communication through interaction, collaboration, and iterative speaking practice.

Similarly, the quantitative results showed full agreement in motivation and confidence, which was strongly supported by interview data highlighting increased participation, reduced anxiety, and greater willingness to communicate. These findings suggest that teachers perceive

Design Thinking as contributing to a more supportive and student-centered learning environment, where learners feel encouraged to take risks and engage actively in English.

A similar convergence was observed in the development of listening, reading, and writing skills. Teachers described how activities such as interviews, research tasks, and iterative feedback cycles contributed to language development. These insights align with the survey data and suggest that Design Thinking is perceived as supporting integrated skill development through authentic and inquiry-based learning experiences.

In contrast, vocabulary development showed slightly lower levels of agreement, as reflected in the qualitative data. Teachers emphasized that vocabulary acquisition depends on repeated exposure and continued practice, indicating that its development may require longer instructional periods. This divergence highlights that not all language areas are perceived as equally impacted by Design Thinking, adding nuance to the findings.

Finally, both data strands consistently identified implementation challenges, particularly related to curriculum integration and time constraints. Teachers reported that applying all stages of Design Thinking requires additional planning and adaptation, which aligns with the quantitative findings indicating agreement on these challenges. These results suggest that while Design Thinking is perceived as pedagogically valuable, its implementation is influenced by contextual limitations.

Overall, the integration of both strands indicates that the quantitative results were not isolated numerical patterns but were supported by teachers' detailed classroom experiences. This convergence strengthens the credibility of the findings and suggests that, within this specific context, teachers perceive Design Thinking as a useful framework for promoting communicative competence, learner autonomy, and higher-order thinking in EFL classrooms. However, these interpretations should be understood as perception-based and context-specific rather than generalizable conclusions.

The integration of both strands indicates that the quantitative results were not isolated numerical trends but were reinforced by teachers' detailed classroom experiences. This convergence strengthens the credibility of the findings and supports the interpretation that DT is perceived as a useful framework for promoting communicative competence, learner autonomy, and higher-order thinking in EFL classrooms.

CONCLUSIONS

How do TEFL teachers apply the five-stage Design Thinking process in teaching?

The findings suggest that TEFL teachers do not merely implement the Design Thinking (DT) stages as isolated instructional steps, but rather adopt them as a structured pedagogical framework that reshapes classroom interaction and promotes inquiry-based learning. Across the stages, DT appears to function as an organizing cycle that facilitates sustained communicative

engagement, collaborative problem-solving, and iterative reflection. In this sense, the process supports a shift from content transmission toward meaning-making practices, where language is used as a tool for exploring and addressing real-world issues. This indicates that, in this context, DT is perceived not only as a methodology but also as a framework that reconfigures pedagogical dynamics toward more student-centered, interaction-driven learning environments.

To what extent do teachers perceive that Design Thinking enhances students' EFL skills?

Within this small, perception-based sample, teachers consistently associated the implementation of Design Thinking with improvements in students' communicative competence, particularly in speaking fluency, confidence, and spontaneity. These perceived gains appear to be linked to the iterative and collaborative nature of DT tasks, which require learners to negotiate meaning, present ideas, and engage in continuous interaction. In addition, teachers reported perceived development across other language skills, suggesting that DT may support integrated language learning through authentic, inquiry-driven activities. However, these findings should be interpreted cautiously, as they reflect teachers' professional judgments rather than objective measures of language performance. Notably, vocabulary development was perceived as more gradual, indicating that certain linguistic areas may require sustained exposure beyond the scope of short-term DT implementation.

What benefits and challenges do teachers perceive when integrating Design Thinking into the EFL curriculum?

From a pedagogical perspective, teachers perceived Design Thinking as fostering increased student motivation, active participation, and communicative confidence, while also supporting the development of higher-order thinking skills such as critical thinking, creativity, and problem-solving. These findings suggest that DT contributes to creating more engaging, student-centered learning environments where learners take greater ownership of the learning process. At the same time, the study highlights important contextual constraints, particularly related to instructional time, curriculum alignment, and classroom management. These challenges indicate that the implementation of DT is not neutral, but mediated by institutional conditions and practical limitations. Nevertheless, teachers generally perceived these constraints as manageable, suggesting that the pedagogical value of DT may outweigh the demands of its implementation when adequate support and planning are provided.

Overall, the findings indicate that Design Thinking is perceived as a valuable pedagogical framework for EFL instruction in Ecuadorian public university contexts, as it promotes communicative interaction, learner autonomy, and higher-order thinking through authentic and collaborative tasks. Importantly, this study contributes to the limited body of research focusing on teachers' perspectives in Latin American EFL settings, offering context-specific insights into how DT is interpreted and enacted in practice. Rather than demonstrating causal effects, the

study provides a perception-based understanding of how teachers evaluate the pedagogical affordances and constraints of DT within their instructional environments.

From a theoretical perspective, these findings align with Lev Vygotsky's view of learning as a socially mediated process, as language development was perceived to emerge through interaction, collaboration, and shared problem-solving. From a practical standpoint, the study underscores the need for targeted teacher training, curriculum flexibility, and instructional support to facilitate the effective integration of iterative pedagogies such as Design Thinking within constrained academic settings.

Future research should move beyond perception-based data to examine the long-term impact of Design Thinking on measurable language outcomes, incorporate students' perspectives, and explore its application across different proficiency levels and institutional contexts. Such research would provide a more comprehensive understanding of the role of Design Thinking in EFL education and its potential to contribute to sustainable pedagogical innovation.

REFERENCES

- Affifi, A. (2023). Design thinking: An approach to develop writing performance (secondary EFL). ERIC.
- Almache-Granda, G., Aguilar-Parra, J., Ramírez-Romero, E., & Coello-Vásquez, V. (2024). Design thinking to facilitate the development of TEFL students' competencies. *Polo del Conocimiento*, 9(12), 1345–1361.
<https://polodelconocimiento.com/ojs/index.php/es/article/view/8545>
- Almalki, A. (2023). The impact of integrating design thinking on EFL students' oral performance. *International Journal of Language and Linguistics*, 11(2), 45–52.
- Alrehalil, T., & Alhawsawi, S. (2022). The effectiveness of design thinking in improving English language learning. *International Journal of Instruction*, 15(4), 321–338.
- Alvarado, L. (2025). Design thinking and innovation in higher education learning environments. [Manuscript in preparation].
- Baum, A. (2021). Applying design thinking in education: Innovative teaching strategies. *Educational Technology Research and Development*, 69(3), 1543–1561.
- Baričević, M., & Luić, L. (2020). Design thinking as an innovative approach in education. *Journal of Education and Learning*, 9(4), 20–30.
- Brown, H. D. (2007a). *Principles of language learning and teaching* (5th ed.). Pearson Education.
- Brown, H. D. (2007b). *Teaching by principles: An interactive approach to language pedagogy* (3rd ed.). Pearson Education.
- Brown, T. (2009). *Change by Design: How Design Thinking Creates New Alternatives for Business and Society*. Harvard Business Press.
- Cevikbas, M., & Kaiser, G. (2022). Enhancing student engagement through design thinking: A model for interdisciplinary collaboration. *Thinking Skills and Creativity*, 43, 101013.
<https://doi.org/10.1016/j.tsc.2021.101013>
- Cleminson, T., & Cowie, N. (2021). Using design thinking as an approach to creative and communicative engagement in the English as a Foreign Language classroom. *Journal of University Teaching and Learning Practice*, 18(5), 63–81.
- Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). Routledge.
- Creswell, J. W. & Creswell J. D. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage Publications.
- Creswell, J., & Poth, C. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications.

- Coyne, I. (1997). Sampling in qualitative research. Purposeful and theoretical sampling; merging or clear boundaries?. *Journal of advanced nursing*, 26(3), 623-630.
- Crites, K., & Rye, E. (2020). Applying design thinking to improve student learning in higher education. *Innovative Higher Education*, 45(2), 123–137.
- Dell’Era, C., Magistretti, S., & Verganti, R. (2020). Exploring collaborative practices in design thinking. *Creativity and Innovation Management*, 29(3), 1–14.
- Dörnyei, Z. (2007). *Research methods in applied linguistics*. Oxford University Press.
- Durán, E., & García, K. (2021). Exploring EFL teaching and learning processes in undergraduate courses. *Profile: Issues in Teachers’ Professional Development*, 23(1), 145–160.
- Ellis, R. (2003). *Task-based language learning and teaching*. Oxford University Press.
- Gregersen, T., & Horwitz, E. (2002). Language learning and perfectionism: Anxious and non-anxious language learners’ reactions to their own oral performance. *The Modern Language Journal*, 86(4), 562–570. <https://doi.org/10.1111/1540-4781.00161>
- Gantsetseg, S., & Oyun-Erdene, E. (2025). Adapting design thinking approach to enhance efl students’academic writing performance and creative thinking skills. *Sciences of Europe*, (164), 58-65.
- Guamán-Quintanilla, S., Chiluiza, K., Everaert, P., & Valcke, M. (2020). Mapping the impact of design thinking on teamwork, problem solving and creativity. In *Proceedings of the Design Society: DESIGN Conference* (Vol. 1, pp. 1715–1724). Cambridge University Press.
- Jones, P. (2024). Design thinking in action: Fostering 21st-century skills alongside subject knowledge. *Design and Technology Education*, 29(2), 219–247.
- Kang, N. (2021). Design-thinking framed EFL autonomous learning through interactive e-journaling. *Journal of English Teaching through Movies and Media*, 22(1), 91-117.
- Lake, D., et al. (2024). Design thinking in higher education learning environments. *Journal of Educational Innovation*, 12(1), 45–60.
- Lee, D. (2022). Design thinking and learning innovation in language education. *Educational Research Review*, 37, 100451.
- Liedtka, J. (2018). Why design thinking works. *Harvard Business Review*, 96(5), 72–79.
- Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, 140, 1–55.
- McLaughlin, J., Wolcott, M., Hubbard, D., Umstead, K., & Rider, T. (2019). A qualitative review of the design thinking framework in education. *Journal of Educational Innovation*, 5(2), 45–57.

- Mujiono, M., Weganofa, R., & Herawati, S. (2024). Exploring the design thinking orientation in English as a foreign language (EFL) for learners: An instrument development study. *KnE Social Sciences*, 216-228.
- Nazim, M., & Mohammad, S. (2021). Design thinking for collaborative learning environments. *International Journal of Educational Research*, 107, 101741.
- OpenAI. (2024). *ChatGPT (GPT-4o) [Large language model]*. <https://chat.openai.com>
- Papert, S. (1982). *Mindstorms: Children, computers, and powerful ideas*. Basic Books.
- Plattner, H., Meinel, C., & Leifer, L. (2011). *Design thinking: Understand – improve – apply*. Springer.
- Puccio, G. , Mance, M., & Murdock, M. (2011). *Creative leadership: Skills that drive change* (2nd ed.). Sage.
- Rahmasari, B., Munir, A., & Nugroho, H. (2025). Fostering learner autonomy in EFL reading. *Cogent Education*, 12(1), 2477367.
- Reyes-Cruz, M., & Salazar-Navarro, A. (2024). Authentic assessment and design thinking in online university contexts. *Innovations in Education and Teaching International*, 61(2), 134–146. <https://doi.org/10.1080/14703297.2023.2229119>
- Richards, J. (2006). *Communicative language teaching today*. Cambridge University Press.
- Salomone, R. (2022). The inequities of English use in global higher education. *Times Higher Education*.
- Scholnik, M., Kol, S., & Abarbanel, J. (2006). Constructivism in theory and practice. *English Teaching Forum*, 44(4), 12–20.
- Schön, D. (1983). *The reflective practitioner: How professionals think in action*. Basic Books.
- Shé, C., Farrell, O., Brunton, J., & Costello, E. (2022). Integrating design thinking into instructional design: The# OpenTeach case study. *Australasian Journal of Educational Technology*, 38(1), 33-52.
- Sotlikova, R. (2023). Design thinking in Education: Empowering students in ELT class. *Proceedings Series on Social Sciences & Humanities*, 13, 196-199.
- Swallow, D., & Tomalin, B. (2024). Design thinking in education: A paradigm shift in language learning. *Training, language and culture*, 8(4), 86-94.
- Temple, B., & Young, A. (2004). Qualitative research and translation dilemmas. *Qualitative Research*, 4(2), 161–178.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Wang, C. (2024). Using design thinking to support innovative learning environments. *Educational Technology & Society*, 27(1), 45–57.
- Yu, Q., Yu, K. & Lin, R. A meta-analysis of the effects of design thinking on student learning. *Humanit Soc Sci Commun* 11, 742 (2024). <https://doi.org/10.1057/s41599-024-03237-5>

- Yu, Q., Zhang, L., Xu, H., & Chen, Y. (2024). Design thinking and collaborative learning outcomes in higher education. *Computers & Education*, 214, 105015.
- Zaky, Y. A. M. (2024). Teaching with design thinking in language education. *Language Teaching Research*, 28(2), 345–360.