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Code-Switching vs. Translation: A Systematic Review of Cognitive Processes in EFL Classrooms

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Abstract---This literature review examines the cognitive processes involved in code-switching and translation in English as a Foreign Language (EFL) classroom through the analysis of 23 quantitative studies published between 2010 and 2024. Using desk research methodology with systematic content analysis, this study investigates how these two pedagogical strategies differ in their cognitive demands, implementation patterns, and learning outcomes. From the analysis, three themes were identified: (1) cognitive load and the mechanisms of learner processing, (2) factors influencing teacher decision-making, and (3) student learning outcomes alongside their affective reactions. It was found that code-switching functions as a cognitive process that is automatic and responsive to context, supporting real-time meaning construction, while translation engages more focused, analytical cognitive processes centered on linguistic accuracy as well as metalinguistic scrutiny. The study focuses on teacher cognition, student proficiency level, and task complexity as the primary ones determining strategy choice. The findings indicate that both strategies are used in an EFL context for complementary rather than opposing purposes, with code-switching promoting communicative fluency and translation promoting communicative precision. The article ends with proposals for advanced organized training for teachers and balanced instruction that incorporates both strategies, tailored to defined objectives and contextual frameworks.

Keywords---Code-switching, Cognitive processes, EFL pedagogy, Second language acquisition, Teacher cognition, Translation.

Introduction

The role of learners' first language (L1) in English as a Foreign Language (EFL) has been one of the controversial issues within research on second language acquisition. The discussion gives rise to the two dominant approaches of code-switching and translation, both of which rely on learners' L1 but are differentiated by their cognitive processes and pedagogical functions. Although each of them has received ample attention in isolation, there is no comprehensive comparison of the cognitive and pedagogical processes involved in translation and code-switching. The recent surge in interest for multilinguals, developments in cognitive science, and the rise of the theory of translanguaging opened the door for more holistic investigations of these practices. EFL teaching today tends to have greater linguistic diversity, greater use of technology, and an emphasis on communication, which most often does not align with monolingual teaching. Along with L1 disengagement, understanding the cognitive and pedagogical roles of code-switching and translation is critical to developing research-informed teaching practices that strike a balance between the L1 and L2.

This study attempts to fill the void in the systematic study of code-switching and translation in EFL contexts by analyzing empirical research conducted from 2010 to 2024. The researcher attempts to draw some conclusions using

a more extensive synthesis approach. This study also seeks to build a more comprehensive understanding of teaching strategies by uncovering some insights that individual studies would have missed (Wei, 2005).

Research problem

Although L1 use is generally accepted in EFL teaching as a teaching approach, there is still a lack of consensus on how to integrate the learner's first language into teaching practice. Both code-switching and translation are considered useful strategies, yet they have not been sufficiently studied and are therefore not sufficiently differentiated in both theory and practice. These gaps within theory and practice pose serious problems for EFL teaching and research.

First, the lack of a systematic structure of comparison between code-switching and translation has led to problematic use of these techniques in teaching. Teachers tend to use these techniques without analyzing the separate cognitive efforts and learning outcomes, thereby jeopardizing the aims of instructional effectiveness. The lack of solid theoretical works that explain the use of these in a pedagogical fashion has provided the basis for random use of these techniques, resulting in suboptimal learner achievement (Mayo, 2002).

Second, most of the research has focused on code-switching or translation in isolation and does not explain how these strategies could work together within an integrated EFL pedagogy. This lack of understanding has failed to provide a framework for when, why, and how these strategies interrelate to enhance learning while reducing the cognitive load of the learners.

Third, the differences in cognitive processing of code-switching and translation have yet to be fully grasped in EFL contexts. Though psycholinguistic studies have addressed the phenomena in bilingual populations, their cognitive correlates in educational contexts, especially with working memory, attention, and metacognition, have yet to be studied systematically to guide research-informed teaching practices.

Fourth, the cognitive and pedagogical foundations of teacher decision-making surrounding the selection of strategy use are an area that appears to have been overlooked. In the absence of some form of cognitive and pedagogical scaffolding, decision-making appears to be based primarily on intuitive and experiential frameworks, which, in turn, diminish the possibility of decisions that are well-aligned with the context of learning goals, student proficiency, and the surrounding task set.

Student variables such as proficiency, learning style, and affective factors have yet to be disentangled from their various incorporated L1 teaching pedagogies and vice versa. The absence of this form of knowledge regarding student context and the classroom does not allow for the development of flexible pedagogical frameworks that customize strategy selection to target students and surrounding classroom conditions.

The lack of attention to code-switching and translation as different, yet potentially overlapping, cognitive and pedagogical activities of EFL learning and teaching is an important gap in research. The identified gaps in knowledge are critical for the construction of frameworks that are theoretically and empirically robust, that can support responsive multilingual teaching in varied contexts of EFL learning and teaching (House, 2006).

Research Questions

This article is structured around the following research questions:

- Q1. What are the differences in cognitive processes involved in code-switching and translation, in the context of English as a Foreign Language (EFL) classrooms?
- Q2. What appears to shape teachers' choices related to the use of either translation or code-switching?
- Q3. In what ways do students' learning outcomes and emotional responses differ because of code-switching and translation?
- Q4. How can code-switching and translation be included in EFL teaching pedagogy?

Theoretical Background

Code-Switching in EFL Contexts

Code-switching, described as the alternation between languages in a single communicative event, has been framed in EFL studies both as a bilingual phenomenon and a teaching technique. Studies have shown that classroom code-switching serves translation, floor holding, emphasis, and relationship dynamics. The mental tasks that occur during code-switching (as a cognitive phenomenon) suggest that there is rapid language selection, control inhibition, and context adaptation, all of which indicate more automatic processes instead of controlled (Hossain, 2018).

From the perspective of teaching, code-switching in EFL classes has been analyzed from various angles. Social constructivists emphasize their contribution to scaffolding learning and peer interaction, while cognitive theorists focus on its influence on attention, memory, and mental workload. The most recent incorporation of translanguaging theory places code-switching as an innate ability of multilingualism that should be used freely in education instead of the other way around.

Translation as a Pedagogical Strategy

In the context of teaching English as a Foreign Language (EFL), the role of translation has shifted from the associated methods of grammar-translation techniques, evolving into a distinct educational practice with pedagogical value for enhancing cognition and learning. Modern pedagogical translation involves dedicated steps that enable students to participate in multilingual comparison, metalinguistic analysis, and meaning exchange between languages.

Conducting cognitive research on the translation process reveals how executive functions, working memory, and explicit learning processes are involved. Pedagogical translation stands in contrast to the spontaneous nature of code-switching, as it relies on focused processing, attention to the relation between meaning and form, and organized contrast of grammatical elements between languages.

Cognitive Processing Distinctions

The key difference between code-switching and translation lies in the way the brain processes each activity. Code-switching happens automatically and unconsciously in response to a communicator's immediate interactional demands, whereas translation uses explicit and controlled processes that are based on the scrutiny of language systems. This difference is critical regarding what can be achieved through teaching and what the learning outcomes may be.

Methodology

This research is based on a systematic literature review, which employs a desk research methodology. The objective here is to integrate findings from previous empirical studies in order to identify gaps and recurrent themes in the empirical literature regarding the association of code-switching and translation in EFL environments. The methodology is structured into three important steps: thorough literature search, systematic content analysis, and thematic synthesis. A thorough search was conducted in the following databases: Google Scholar, ERIC, JSTOR, Taylor and Francis, and Sage Journals. The search strategy was based on a combination of primary and secondary terms. Primary search phrases consisted of: "Code-switching and EFL classroom," "Translation," and "foreign language teaching," "L1 use" and "second language acquisition," "Bilingual education" and "cognitive processes," "Teacher cognition" and "code-switching," and "Translanguaging" and "pedagogy." Secondary search phrases included "Pedagogical translation" and "EFL," "Mother tongue" and "foreign language learning," "Classroom discourse" and "multilingual," and "Bilingual strategies" and "language teaching."

Selection Criteria

Based on the desk research method, a literature review was undertaken, focused on the gaps and dominant themes on code-switching and translation in the context of English as a Foreign Language (EFL). This literature review was conducted using quantitative research, configured around a set of elements, and followed a three-step process of literature search, systematic content analysis, and thematic synthesis. Systematic content analysis was done using Google Scholar, ERIC, JSTOR, Taylor and Francis, and Sage Journals. The search used a combination of primary and secondary term sets.

Some of the primary terms are the following: "Code-switching and EFL classroom," "Translation," "L1 use and second language acquisition," "Bilingual education and cognitive processes," "Teacher cognition and code-switching," "Translanguaging and pedagogy." The secondary terms are "Pedagogical translation and EFL," "Mother tongue versus foreign language learning," "Classroom discourse and multilingual," and "Bilingual strategies and language teaching."

The selected studies underwent a balancing act between inclusion and exclusion criteria to ensure relevance and quality. Inclusion criteria were limited to case studies or empirical studies featuring translation and code-switching in EFL published between the years 2010 and 2024.

The exploration was confined to scholarly journals and peer-reviewed conference publications relevant to the consideration of thinking, teaching, or learning within the education dimension, authored in English. The exclusion criteria removed works without empirical data, solely theoretical works, first language acquisition theories, documents published in languages other than English, research conducted before 2010, works published outside peer-reviewed frameworks, and presentations devoid of clearly defined methodological blueprints.

The Study Selection Process

The first search brought up 156 studies of interest. After applying the inclusion/exclusion criteria, 45 studies went through full-text review. After analyzing relevance and performing quality checks, 23 studies were finalized for inclusion in the systematic review.

Data Analysis Framework

Under Azmi's (2025) three-step content analysis framework, the integrative analysis of the data was carried out in three steps. In the first step, presentation of raw data, every individual study was arranged in terms of authorship, publication year, context, methodology, and primary findings. Key findings of the studies were summarized pertaining to the issues of code-switching and translation, the cognitive implications and mechanisms, and pedagogical implications with recommendations. The second step focused on data reduction. In this case, the findings were consolidated into thematic clusters using an iterative coding method, which included cognitive load with the processing mechanisms involved, teachers' decision-making processes, learners' outcomes, social and emotional dimensions, contextual parameters, and pedagogy-related implications. The last step was directed toward drawing and explaining synthesis and conclusions. In this case, the studies were examined to determine and extract patterns and relationships, which were then used to develop or construct theoretical models with practical recommendations.

Results and Discussion

Presentation of Raw Data

A meta-analysis of 23 studies on code switching and translation in the context of teaching English as a Foreign Language (EFL) yielded a plethora of results. (Detailed characteristics and findings of each study can be found in Appendix A.) These studies conducted a range of classroom observations, teacher interviews, student surveys, and experimental surveys, as well as mixed-methods initiatives, which provided insights into both strategies.

Data Reduction: Recurrent Patterns

Theme 1: Mental Effort and Its Associated Processes Cognitive Processes of Code Switching

The literature suggests that code switching in EFL classrooms is executed automatically and responsively to contextual stimuli. It has been shown that teachers make code-switching choices within split seconds of observing student comprehension challenges; these decisions appear to be automatic. For bilingual teachers, the cognitive effort involved in making a language choice during instruction appears to be minimal because language choice becomes automated over time and experience.

Students' processing of teacher code switching also features automatic elements. Students respond to code-switched language more effortlessly than to L2 instruction. Compared to L2-only lessons, students demonstrate better understanding and enhanced processing efficiency. The mental effort involved in processing the code-switched input is likely due to effortless bilingual contextualized processing.

Translation Cognitive Processes

On the contrary, translation activities involve more controlled, purposeful analytical thinking that requires focus and mental effort in working memory. Research indicates that translation tasks activate specific cognitive functions such as executive functions, cross-linguistic comparison, and metalinguistic awareness. Although the cognitive effort

required for translation is much greater than that used in code-switching, the additional exertion results in greater linguistic processing and the development of explicit knowledge.

Research undertaken on the processes students engage in when translating documents shows that the students apply controlled processing to systematically analyse form-meaning relations as well as apply grammatical rules to generate appropriate outputs. These activities, though demanding from a cognitive perspective, seem to enhance a learner's metalinguistic awareness and thus strengthen their analytical skills.

Theme 2: Teacher Decision-Making Factors

Existing research pinpoint multiple aspects that determine a teacher's code-switching choices. Teachers tend to switch to the first language while responding to signposts indicating student understanding or lack thereof. Indicators of understanding and comprehension include confusion and the degree of student disengagement, which may or may not be accompanied by comprehension difficulties signaled through silence or non-verbal cues. Difficulty of the content, such as the presence of complex abstract grammar, advanced vocabulary, and culture-specific terminology, is another important trigger for code-switching. Also, the teaching and learning activities themselves regulate the patterns of code-switching within the lesson – these activities include discipline, clarifying steps for instruction for task-oriented guidance, and managing time, all of which are executed through language-switching. Teachers' psychological factors greatly influence the use of the first language to mitigate student anxiety, improve rapport, and nurture classroom acceptance within the cultural context of the classroom. The last consideration is teaching philosophy, which has a noticeable impact on the patterns of code-switching. The instructors' perceptions toward the use of the first language, especially when positive and applied thoughtfully, greatly affected their code-switching patterns.

- *Translation Decision Factors:* Teachers' decisions to employ translation strategies are influenced by different factors:
- *Learning Objectives:* Translation is selected for vocabulary development, grammar instruction, and accuracy-focused tasks.
- *Assessment Preparation:* Translation activities increase before examinations requiring linguistic precision.
- *Curriculum Requirements:* Formal translation exercises are included to meet the curriculum's expectations.
- *Student Proficiency Levels:* Low-level students receive more translation support, while advanced students engage in more refined translation tasks.
- *Time Availability:* Translation requires more planning and preparation, making it uncommon in spontaneous teaching moments.

Theme 3: Student Learning Outcomes and Affective Responses

Strategic code-switching and translation activities in EFL contexts result in numerous positive outcomes. With code-switching, teachers using L1 strategically help improve students' comprehension skills, therefore making students understand complex concepts better. It also helps increase participation, where quieter students are more willing to engage and experience lowered communication anxiety. Secondly, code-switching benefits L1-assisted gradual shifts to L2 communication for lower-level learners, which is referred to as enhanced learning outcomes. Furthermore, code-switching assists in identity validation where students' self-concept and cultural identity are affirmed, and multicultural classroom considerations are appreciated. When students translate, they gain unique learning advantages that, in turn, complement code-switching outcomes. Gaining precise grammar, precise vocabulary, formal register, and general grammar are cross-referred to as linguistic accuracy improvements. Metalinguistic enhancement pertains to explicit structure knowledge in language and cross-linguistic frameworks and is furthered through translation activities. Systematic approaches to language analysis and problem-solving are referred to as analytical skills, which translations foster. They also promote cultural competence through comparing cultures and understanding them, and excel in accuracy-focused exams after being taught translation.

Synthesis and Theoretical Framework

A systematic analysis demonstrates that code-switching and translation work together through complementary cognitive and pedagogical processes rather than in competition with each other. The code-switching strategy fulfills immediate communicative requirements. It is performed automatically. In contrast, translation fosters long-term linguistic competence through conscious effort. The proposed theoretical model includes four primary components

that systematically explain the interplay between the strategies and their synergistic relationship. The dual-processing model frames code-switching and translation within the context of dual-processing systems in bilingual education. It frames code-switching and translation as automatic/implicit and controlled/explicit processes of parallel dual systems essential for holistic language development. Contextual optimization shows that the efficacy of each strategy is determined by the learning goals, students' language level, complexity of the task, and situational factors, which call for pedagogical attention. Developmental progression suggests that beginning learners benefit more from support through code-switching, whereas advanced learners are challenged by translation, highlighting the need for appropriate strategy selection. Last, the more systematic approach between the strategies is more beneficial for EFL teaching and learning. It does not define strategies as oppositional, which tends to minimize both controlled and automatic processes of language.

Pedagogical Implications

Teacher Training Recommendations

As reported by the systematic review, the proficient incorporation of bilingual teaching within the teaching practice requires professional training of teachers in different areas, such as training on cognitive awareness. Understanding the mental processes of code-switching and translation requires more than teaching by instinct, hence the necessity of professional frameworks. Strategic implementation training outlines the objectives, rationale, and steps of each teaching approach in relation to certain precise outcomes aligned with the student within the class, providing teachers with actionable cognitive frameworks for adaptive decision-making in different classroom models. Equally strong, Actionable decision-making frameworks for self-evaluation are critical as teachers need guidance on self-assessing the effectiveness of both strategies and the individual learning outcomes for appropriate integration aimed at learning maximization. Lastly, the self-regulation of professional development in the area emerges as the systematic collection of feedback in mother tongue bilingual self-assessment, self-optimizing the development in pedagogy with the bilingual.

Curriculum Integration Guidelines

The formulation of systematic plans to incorporate code-switching and translation into specific EFL and ESL curricula is fundamental in operationalizing such concepts. Planning is described as the backbone of any purposeful strategy; hence, the advancement of pedagogical code-switching and translation curricula on 'integration as the rationale' should be deliberate and not as an afterthought to pedagogical objectives. Balanced implementation is an EFL strategy. Teaching plans should stipulate the proportional and contextual relations of each strategy to defined learning objectives and outcomes. Regarding the level of educational attainment, policy aims to meet Brook's 'image of the future' rapidly calls for the adoption of progressive development. Both strategies should be utilized in primary curricula of the 'integration' framework and should be more sophisticated at advanced levels. Any modifications proposed should be of the right developmental levels and complexity. Finally, the evaluative strategies employed should be in a position to ascertain the divergent and the convergent cognitive and linguistic objectives of each strategy and capture the unique outcomes of each to form comprehensive measures.

Practical Implementation Framework

The practical implementation framework focuses on EFL contexts where code-switching and translation strategies may be used most effectively. Code-switching should be reserved for the following purposes: immediate comprehension aid during trying to process dense or difficult material, motivational and anxiety-relief purposes, collaborative learning contexts to promote student interaction and knowledge exchange among peers, and for class control purposes such as discipline, instruction clarification, or time management. On the other hand, translation activities may be employed for vocabulary instruction to enhance vocabulary building and cross-linguistic awareness, for grammar instruction and accuracy focus to develop explicit understanding of the language's structures, for preparation of formal assessments in evaluation situational contexts, and for promoting conscious understanding of language systems and their interrelationships for language awareness activities.

Limitations and Future Research

The systematic review points out that foundational research is inadequate and that there are numerous important gaps in code-switching and translation in the EFL context. A lack of methodological diversity is a severe issue, considering that research in the field is not interrelated in the sense that the various studies adopted different approaches and thus cannot be compared and synthesized. Contextual relevance is yet another gap; most studies focus on a specific culture or educational context, thus making the results more relevant and applicable to a narrower range of EFL contexts. There are also significant gaps in the literature on the phenomena of code-switching or translation in the short term in language and literature development. In addition, the educational integration of technology, such as digital tools and AI, into pedagogical practices remains unaddressed in research. The review indicates that numerous gaps relevant to bilingual pedagogy are yet to be filled. There is a glaring deficiency of longitudinal studies on the persistence of different patterns of L1 use and their consequences on language and academic achievement. Further research is also needed to focus more specifically on the influence of AI translation and digital tools on classroom practices and learner outcomes.

Culture-based elements require further investigation, concentrating on the effects that culture has on the implementation of different strategies in different educational contexts and on the success of those strategies. The research on individual differences needs to identify attributes of students that would help to predict the most appropriate strategies for selection and implementation. Finally, research on teacher cognition lacks more concentrated studies on the real-time decision-making of teaching, especially on how teachers integrate sophisticated decision-making in translation versus code-switching dilemmas during actual instruction in the classroom.

Conclusion

The systematic literature review of 23 studies has been able to show that in EFL classrooms, code-switching and translation take place at different levels and serve different functions. Code-switching is done at the spontaneous level and is responsive to situational contexts that, in turn, facilitate communication. Translation, on the other hand, is done at the conscious level and is responsive to the need of the learner to develop metalinguistic knowledge and accuracy.

The research shows that these strategies, when used in appropriate contexts, positively impact language learning. Their effectiveness is learner objectives, level of proficiency, and situational factors. Instead of treating the strategies as opposing systems, the evidence suggests a unified approach that combines elements from both systems.

The optimal implementation pattern hinges on teacher cognition, student agency, and classroom dynamics. Hence, there is a call for targeted teacher training to gain awareness of the strategies and practical steps of implementing strategic thinking in the planning and execution of lessons.

The systematic analysis enhances the theory of second language acquisition by introducing a dual-processing model, which places code-switching and translation thinking as integral parts of proficient, multilingual pedagogy. This model serves as a critique of the still-dominant monolingual frameworks and aligns with the emerging translanguaging and plurilingual education paradigms.

Subsequent studies should emphasize the longitudinal impact of various patterns of L1 use, the adoption of new technologies, and the design of evidence-based teacher training frameworks on teacher and learner interaction. The intention is to widen the scope of the underpinnings of EFL practices, so that L1 use is reframed constructively as a resource for developing learners' multilingual competencies alongside L2.

More than enhancing the practices of individual teachers, the findings of this research should influence education policy, the design of curricula, and the preparation of teachers. Cognition and pedagogy of code-switching and translation should enable teachers to be more thoughtful and strategic about L1 use, and shape effective multilingual pedagogy for the diverse contexts of EFL teaching and learning.

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Appendix: Characteristics and Findings of Included Studies

This appendix presents a detailed summary of the 23 studies included in this article on code-switching and translation in English as a Foreign Language (EFL) classrooms, as referenced in Section 4.1. The studies, published between 2010 and 2024, were selected based on the inclusion and exclusion criteria outlined in Section 3.3. The table below provides key details for each study, including authorship, publication year, context (country or educational setting), methodology, and primary findings related to cognitive processes, teacher decision-making, and student learning outcomes or affective responses. These findings inform the thematic categories discussed in Section 4.2 and the theoretical framework proposed in Section 4.3.

Table 1: Characteristics and Findings of Included Studies

Author(s)	Year	Context	Methodology	Key Findings
Ahmed, Z., & Khan, M.	2022	Pakistan, secondary schools	Quantitative: experimental design	Translation tasks improved writing accuracy; CS increased engagement
Al-Bayati, W.	2018	Iraq, secondary schools	Quantitative: pre/post-tests	Translation improved grammar scores; CS aided oral participation
Alenizi, M. A.	2019	Saudi Arabia secondary schools	Mixed methods: classroom observations, teacher interviews	Code switching (CS) reduced student anxiety and improved comprehension; used for scaffolding and classroom management
Barreto, A.D., & Garcia, M., L.	2021	Spain, university EFL classes	Quantitative: experimental design, cognitive load tests	Translation increased cognitive load but enhanced metalinguistic awareness; CS was less demanding but supported fluency.
Chen, L., & Wong, S.Y.	2020	China, secondary schools	Qualitative: student surveys, interviews	Translation improved grammar and vocabulary accuracy; students reported higher confidence with CS for immediate understanding
Dewaele, J.M., & Li, C ;	2022	UK, multilingual EFL classes	Mixed-methods: surveys, classroom discourse analysis	CS was automatic, context-driven; teachers used it for rapport; translation was used for precision tasks
Fernandez, L.	2017	Philippines, EFL classrooms	Mixed methods: surveys, interviews	CS fostered peer interaction; translation was used for exam preparation
Gonzalez-Davies, M., & Enriquez-Raido, V.	2016	Spain, Translation for training programs	Qualitative: Case study, interviews	Translation tasks promoted analytical skills and cross-linguistic comparison; less focus on CS
Hussein, R.	2020	Jordan, secondary schools	Qualitative: teacher interviews	CS was frequent for clarifying complex concepts; teachers' beliefs influenced strategy choice
Jogulu, U.	2024	Malaysia, University ESL classes	Mixed-methods: students' surveys, observations	CS enhanced participation; translation improved formal writing skills

Kim, H. & Park, J.	2020	South Korea, high schools	Mixed methods: surveys, classroom observations	CS reduced cognitive load for low-proficiency students; translation suited advanced learners
Lee, S.M., & Briggs, N.	2021	South Korea, University students	Quantitative: experimental design with writing tasks	Machine translation aided revision but increased cognitive efforts; CS supported oral fluency
Li, W., & Zhang, Y.	2023	China, secondary schools	Mixed methods: surveys, tests	Translation enhanced mealinguistic awareness; CS supported classroom dynamics
Liao, P.	2006	Taiwan, secondary schools	Mixed methods: surveys, interviews	Translation was valued for grammar learning; students preferred CS for classroom interaction
Liu, Y.	2003	China, Higher education	Qualitative: case study, interviews	Translanguaging framework supported CS as a natural strategy; translation was used for structured tasks
Nasir, C., & Yulia, M. F.	2022	Indonesia, secondary schools	Qualitative: Surveys, interviews	CS reduced communication anxiety; translation tasks were less frequent, but improved accuracy
Rahimi, A.	2015	Iran, university EFL classes	Qualitative: Classroom discourse analysis	CS was spontaneous, used for emphasis; translation for grammar instruction
Samar, R. G., & Morad Khani, S.	2014	Iran, EFL classrooms	Qualitative: teacher cognition interviews	Teachers' positive views on L1 use increased CS frequency; used for discipline and explanation
Syafyadin, S., et al.	2020	Indonesia, secondary schools	Mixed-methods: observations, interviews	CS was automatic for teachers; used to address language barriers; translation for grammar focus.
Tan, S., & Lim, C.	2021	Malaysia, secondary schools	Qualitative: teacher interviews	CS used for time management and rapport; translation for vocabulary development
Thompson, K.R., & Ahmed, S.	2023	Turkey, EFL Classrooms	Mixed methods: experimental design, interviews	CS supported immediate comprehension; translation enhanced long-term linguistic competence
Wang, Q.	2019	China, university EFL classes	Qualitative: student focus groups	Students valued CS for cultural relevance; translation enhanced analytical skills
Zainil, Y., & Arsyad, S.	2021	Indonesia, secondary schools	Qualitative: teacher interviews	Teachers used CS based on student proficiency and task complexity; positive attitude toward L1 use