

COLLABORATIVE PROJECT-BASED TRANSLATION IN BILINGUAL MENU BOOKLETS: METACOGNITION AND CULTURAL CHALLENGES

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ABSTRACT

This study investigated collaborative project-based translation of bilingual Indonesian – English menu booklets as a pedagogical context where linguistic, cultural, and cognitive demands intersect. Central to this process was students' metacognitive awareness, which regulates how they plan, monitor, negotiate, and revise translation decisions when confronting culturally embedded culinary texts. Although menu translation plays a crucial role in culinary tourism and intercultural communication, its pedagogical implementation particularly through collaborative Project-Based Learning (PjBL) frameworks foregrounding metacognitive strategy use remains underexplored in translation studies. Addressing this gap, the study adopted a qualitative case study design grounded in constructivist pedagogy and PjBL. Twenty vocational higher education students were purposively selected and divided into five collaborative groups, each assigned to translate a themed Indonesian menu (vegan, fusion food, sweets, street food, and seafood) into a bilingual booklet. Data were triangulated from student-produced menu booklets, non-participant classroom observations, and semi-structured interviews, and analyzed using thematic and document analysis. The findings reveal persistent challenges related to culture-specific culinary terms, lexical gaps, and tensions between cultural authenticity and communicative clarity. To address these challenges, students employed metacognitive strategies such as strategic planning, peer negotiation, self-monitoring, and reflective revision, alongside translation techniques including descriptive equivalence, borrowing, amplification, and literal translation. However, uneven application of these strategies exposed conflicts between domestication and foreignization, and between linguistic accuracy and audience accessibility. Despite limitations such as inconsistent terminology, unequal participation, and absence of authentic client feedback, collaborative project-based translation enhanced students' translation competence by fostering metacognitive awareness, intercultural sensitivity, and multimodal design skills.

Keywords: *Bilingual Menu Booklet; Collaborative Translation; Cultural Challenge; Metacognitive Strategy; Project-Based Learning (PjBL)*

INTRODUCTION

Translation is the process of re-expressing meaning from a source language (L1) into a target language (L2) as a culturally embedded socio-cognitive communicative act, in which translators may face difficulties when culture-specific terms in the source language lack direct equivalents in the target language, necessitating negotiation, interpretation, and adaptation of meaning across cultures (Hanim, 2022; Sari et al., 2022; Setiani, 2020; Suharjono, 2018),

requiring translators to possess not only linguistic proficiency but also cultural knowledge (Sinaga & Jayantini, 2023), including in menu translation. Menus function as multimodal linguistic and cultural texts central to culinary tourism and cultural identity, reflecting traditional ingredients, preparation techniques, religious dietary norms, and sociohistorical contexts (Setyaningsih, 2022), making literal translation insufficient and necessitating culturally sensitive localization and intercultural mediation. Despite this relevance, bilingual menu translation remains underexplored as a genre in translation studies, particularly within pedagogical contexts that foreground collaborative learning and cognitive processes. The cognitive and cultural challenges of collaboratively translating menus are also rarely addressed in translator training curricula, even though vocational education aims to prepare graduates for evolving workforce demands (Putri, 2025). In this regard, Project-Based Learning (PjBL), which emphasizes authentic, collaborative, and reflective learning, offers strong potential to integrate linguistic competence, cultural literacy, and practical skills, yet empirical research linking PjBL with bilingual menu translation remains scarce.

Responding to this gap, the present study investigates how collaborative project-based translation activities shape students' metacognitive strategy use and their engagement with cultural challenges in producing bilingual menu booklets. Misinterpretations in menu translation may result in miscommunication, consumer dissatisfaction, and financial losses (Li, 2018), with broader implications for culinary diplomacy and cultural tourism, underscoring the need for pedagogical approaches that prepare student translators to manage culturally complex texts. Grounded in constructivist learning theory, PjBL promotes real-world tasks that foster inquiry, problem-solving, peer negotiation, and self-reflection which are essential competencies for professional translation practice (Hastürkoğlu & Bayraktar Özer, 2020) and facilitates the deployment of cognitive and metacognitive strategies by integrating linguistic and cultural knowledge in meaningful contexts (Vera, 2022). Metacognitive awareness, defined as the conscious regulation of planning, monitoring, revising, and evaluating translation decisions (Pietrzak, 2021; Saputri, Sari, & Amaliah, 2025), is therefore central to navigating culturally embedded translation tasks. However, while previous studies have reported PjBL's positive effects on general translation performance (Putra, Retnaningsih, & Nugroho, 2021) and critical thinking (Kuswandari & Setyaningrahayu, 2025), and Al-Batineh (2024) has examined menu localization in digital contexts, limited empirical attention has been given to how metacognitive strategies are collaboratively enacted during project-based translation of culturally and genre-specific texts such as bilingual menu booklets. To address this gap, the present study examines (1) the metacognitive and cultural challenges students encounter during collaborative bilingual menu booklet translation, (2) the metacognitive and translation strategies they employ to address these challenges, and (3) the pedagogical impact of collaborative project-based translation on students' translation competence, particularly in terms of problem-solving abilities, intercultural awareness, and multimodal design skills.

Metacognitive and Cultural Challenges in Culinary Translation

Culinary translation transcends literal transfer by embedding linguistic meaning within cultural identity, traditions, and culinary practices, requiring translators to navigate the interrelation of language, cognition, and culture. Cognitive linguistics conceptualizes translation as a dynamic meaning-making process involving conceptual shifts and active interpretation across linguistic and cultural boundaries (He, Shuttleworth, & Wang, 2022). In collaborative culinary translation, challenges intensify when handling culture-specific terms

and metaphorical expressions, particularly in bilingual group settings where coordination, negotiation, and metacognitive awareness are critical. Empirical studies confirm these cognitive demands, as Geng (2025) demonstrated the complexity of translating “eye” metaphors across English, Chinese, and Japanese, while eye-tracking and electroencephalography (EEG) evidence showed that metaphor translation requires greater cognitive effort than non-metaphorical language (Liu et al., 2025). These findings highlight the heightened metacognitive regulation required when interpreting figurative and culturally embedded meanings.

Cognitive constraints and working memory further shape bilingual translation performance, necessitating deliberate regulation of cognitive load and continuous monitoring of comprehension, especially in collaborative environments where shared strategies and awareness of individual limitations are essential (Tang, Huang, & Cheung, 2024). As cultural artifacts, menus represent identity and tradition rather than mere food listings, requiring cultural adaptation to preserve meaning for target audiences (Zhang et al., 2024; Cao et al., 2023). Given the absence of direct equivalents for many culinary terms, menu translation relies on nonliteral and context-sensitive strategies (Zhang et al., 2024), including Cultural-Specific Items (CSI) and functional equivalence (Pratama & Kardana, 2025), with CSIs commonly encompassing ingredients, colour, cooking techniques, flavour, proper names, seasoning, and texture (Pratama & Putri, 2024). The hybrid informative–promotional nature of menus further demands collaborative negotiation to balance clarity, cultural appeal, and marketing effectiveness, as illustrated by culturally loaded dishes such as *randang* and *gulai tambunsu*, whose complex preparation and symbolic meanings shape their translatability (Putri, 2019). Overall, collaborative culinary translation requires sustained metacognitive awareness and cultural sensitivity to produce translations that are accurate, culturally resonant, and cognitively accessible.

Metacognitive and Translation Strategies in Culinary Translation

Culinary translation involves complex interactions between language, cognition, and culture that extend far beyond literal transfer. From a cognitive linguistics perspective, translation is a dynamic meaning-making process requiring translators to shift conceptual frameworks and actively interpret culturally embedded expressions (He, Shuttleworth, & Wang, 2022). In collaborative contexts, these demands are intensified by the presence of culture-specific terms and metaphorical expressions, which require continuous negotiation, coordination, and heightened metacognitive awareness. Empirical studies indicate that translating figurative language imposes substantial cognitive load: Geng (2025) highlighted cross-linguistic and cultural complexities in translating “eye” metaphors across English, Chinese, and Japanese, while eye-tracking and electroencephalography (EEG) evidence demonstrates that metaphor translation requires greater cognitive effort than non-metaphorical language (Liu et al., 2025). These findings underscore the metacognitive challenges translators face in planning, monitoring, and revising interpretations when engaging with culturally loaded culinary texts. Beyond figurative language, bilingual culinary translation is further constrained by working memory limitations and cognitive load, particularly in collaborative environments where successful outcomes depend on shared strategies and mutual regulation (Tang, Huang, & Cheung, 2024).

Menus function as hybrid cultural artifacts that are simultaneously informative and promotional, demanding careful cultural adaptation to preserve identity while ensuring communicative clarity. Research on menu translation emphasizes the necessity of nonliteral,

context-sensitive strategies for handling culture-specific items (Zhang et al., 2024) and the importance of deep cultural understanding in culinary mediation (Cao et al., 2023). Studies on bilingual cookbooks further demonstrate the role of Cultural-Specific Items (CSI) and functional equivalence in preserving culinary heritage (Pratama & Kardana, 2025), with recurring challenges involving ingredients, colour, cooking techniques, flavour, proper names, seasoning, and texture (Pratama & Putri, 2024). The cultural depth of such items is exemplified by *gulai tambunsu*, which requires meticulous preparation involving cleaning intestines, stuffing, and slow cooking to achieve its distinctive spicy and savoury flavour profile (Putri, 2019). Together, these cognitive and cultural constraints highlight that effective culinary translation demands not only linguistic competence but also sustained metacognitive awareness and collaborative regulation to produce translations that are culturally resonant, cognitively accessible, and communicatively effective.

Collaborative Translation through Bilingual Menu Booklet

In today's globalized era, cross-language communication is increasingly vital in sectors with strong international engagement, particularly culinary tourism. Culinary businesses benefit from clear bilingual communication because food attracts diverse audiences, including international tourists who commonly rely on English, making English menus in digital booklet formats essential for comprehension and global market expansion (Putri et al., 2024). As Putri (2025) argued, proficient English communication has become a necessity rather than an option to ensure service quality and alignment with global industry standards. Consequently, bilingual menu booklets offer a strategic advantage by bridging language gaps and engaging international audiences effectively. However, translating bilingual menu booklets is inherently complex due to space constraints, dual-language layouts, and culturally rich content. Menus must simultaneously convey accurate culinary information while remaining visually appealing and culturally resonant for both local and international customers, requiring a multidisciplinary approach that integrates linguistic expertise, cultural insight, and marketing awareness.

Within this context, collaborative learning has gained prominence in language education (Kuswandari & Setyaningrahayu, 2025; Bach & Thiel, 2024) and is effectively operationalized through Project-Based Learning (PjBL) in bilingual menu booklet translation. PjBL situates students in authentic, team-based tasks that mirror professional translation environments, such as negotiating limited space, managing cultural nuances, and designing coherent layouts. This collaborative approach fosters active engagement, peer support, accountability, and respect for diverse perspectives, contributing to coherent and culturally sensitive translation outcomes. Moreover, collaboration enhances both technical and soft skills, including negotiation, leadership, interpersonal communication, and problem-solving, which are essential in professional translation practice. PjBL also supports cognitive and metacognitive development by encouraging peer discussion, critical reflection, and shared evaluation of translation choices (Ramdani et al., 2022; Ferreira, Zabolotna, & Lee, 2024; Gangmei, 2024). The bilingual booklet format further strengthens this process by integrating text and visual elements, as booklets effectively combine images and text (Cahyani, Chotimah, & Rahmawati, 2023) and are relatively easy to produce with minimal tools (Hartati et al., 2020). Through cooperative teamwork, students pool diverse knowledge and skills to address linguistic, cultural, and design challenges, ensuring that collaborative translation through bilingual menu booklets not only enhances translation quality but also cultivates the professional competencies required in specialized translation contexts.

Review of Previous Studies

Previous studies have shown that bilingual menu translation entails complex cultural and cognitive challenges that extend beyond lexical equivalence, requiring both socio-cultural sensitivity and metacognitive regulation. Molina and Albir's (2002) taxonomy of translation techniques, such as borrowing and adaptation, remains foundational but often proves insufficient when applied mechanically to culturally embedded culinary terms, as borrowing may preserve authenticity while reducing accessibility for target audiences. Empirical research has documented persistent problems in menu translation, including syntactic, semantic, pragmatic, and translation-specific errors (Ngoc et al., 2021), as well as the overreliance on literal translation approaches that fail to capture culturally situated meanings (Meldia, 2022). These challenges are compounded by cognitive demands associated with influencing consumer perception, as menu translation intersects with cognitive psychology and consumer behavior. Studies have demonstrated that environmental cues, visual layout, and structural design function as psychological nudges shaping consumer responses (Dayan & Bar-Hillel, 2011; Him & Chark, 2022), while research on stylistic variation in bilingual contexts highlights translators' need to dynamically adjust linguistic registers to audience expectations (Lauterboom & Nuraeni, 2024). Together, these findings suggest that menu translation requires strategic, context-sensitive decision-making rather than the mechanical application of techniques.

While Molina and Albir's (2002) framework remains influential, subsequent studies emphasize the need to integrate cultural sensitivity and cognitive awareness, particularly given the limitations of machine-assisted translation tools such as Google Translate, which often fail to capture context-dependent nuances (Alam, 2020). In response to these multifaceted challenges, Project-Based Learning (PjBL) has been proposed as a pedagogical approach capable of fostering metacognitive awareness, cultural sensitivity, and collaborative competence. Empirical evidence suggests that PjBL enhances critical thinking, problem-solving, and collaborative communication skills in translation learning contexts (Arianto, Philiyanti, & Isnaini, 2023; Tambunan, Ramadhani, & Sibuea, 2024), and supports contextual and experiential learning (Yuskar, Lustyantje, & Murthadho, 2024), although concerns remain regarding the lack of explicit procedural frameworks that may limit consistency and effectiveness (Hariyanto et al., 2024). Despite these advances, few studies have examined how students collaboratively employ metacognitive strategies to manage cultural and cognitive challenges in genre-specific tasks such as bilingual menu booklet translation. Consequently, the pedagogical integration of collaborative PjBL with bilingual menu translation remains underexplored, a gap this study seeks to address by examining the intersection of metacognition, cultural challenges, and collaborative translation practice.

METHOD

Design

This study employed a qualitative case study design grounded in a collaborative Project-Based Learning (PjBL) approach to translation. This study was aimed to examine (1) the metacognitive and cultural challenges students encounter in collaborative bilingual menu booklet translation; (2) the metacognitive and translation strategies students employ to overcome these challenges; and (3) the pedagogical impact of collaborative project-based translation in developing students' translation competence, particularly in terms of problem-solving, intercultural awareness, and multimodal design of menu booklets. The study was conducted in three stages: (1) culturally reflective menu creation, (2) bilingual menu

translation, and (3) design and development of bilingual menu booklets. This research design enabled an in-depth investigation into how project-based translation activities shape students' strategic thinking and intercultural communication skills.

Participants

Participants were selected using purposive sampling, as they represented a specific population with relevant knowledge and skills in translation and tourism contexts, particularly 20 students enrolled in the fourth semester of *Translation to Tourism Industry* course. They were organized into five collaborative groups conducted through a lot-drawing method, where students randomly selected numbers and those with matching numbers were placed in the same group. The total members per group refers to what Zhang & Ma (2023) argued that from an instructional standpoint, Project-Based Learning (PjBL) is most effective in small classes, particularly with groups of 4 to 5 students. Each group was assigned a specific culinary theme (vegan, fusion food, sweets, street food, and seafood) and then developed an original restaurant menu, which was subsequently translated into both Indonesian and English to produce a bilingual menu booklet.

Data and Sources of Data

This study employed a triangulated dataset from three sources to investigate students' experiences in collaborative bilingual menu booklet translation. First, non-participant observations were used to explore the metacognitive and cultural challenges students encountered during the collaborative translation process. Second, document of the bilingual menu booklets produced by student groups revealed the metacognitive and translation strategies they employed to address these challenges. Third, semi-structured interviews provided deeper insights into the pedagogical impact of collaborative project-based translation in developing students' translation competence, particularly in terms of problem-solving, intercultural awareness, and the multimodal design of the menu booklets. Together, these data sources offered a comprehensive foundation for analyzing the metacognitive, cultural, and pedagogical dimensions of collaborative translation practices.

Data Collection

Observation

Data collection through non-participant observation was conducted over four weeks, encompassing four 80-minute sessions focused on students' collaborative translation of bilingual menu booklets. These sessions aimed to identify the metacognitive and cultural challenges students faced as they emerged during three key project stages namely menu drafting, collaborative bilingual translation and peer revision, and the multimodal design of menu booklets.

Document

The document focused on the printed bilingual menu booklets produced by student groups to examine the metacognitive and translation strategies they employed to overcome metacognitive and cultural challenges. This analysis assessed how these strategies reflected students' application of translation principles, particularly in maintaining meaning, addressing cultural nuances, and designing effective multimodal communication within the context of the collaborative translation project.

Interview

Semi-structured interviews were conducted with ten purposively selected participants representing five culinary themes. These interviews provided reflective insights into the pedagogical impact of collaborative project-based translation, particularly in developing

students' translation competence in terms of problem-solving, intercultural awareness, and the multimodal design of the menu booklets. The interview data complemented observational and document-based findings by offering a deeper understanding of how students perceived and experienced the learning process through collaborative translation.

Data Analysis

Data analysis employed a twofold approach aligned with the study's research questions. First, thematic analysis of non-participant observation data was conducted to identify the metacognitive and cultural challenges students encountered during collaborative bilingual menu booklet translation (RQ1). Second, document analysis of student-produced menu booklets examined the metacognitive and translation strategies students employed to address these challenges, with particular attention to meaning accuracy, stylistic coherence, and intercultural appropriateness (RQ2). Third, thematic analysis of semi-structured interview transcripts explored the pedagogical impact of project-based collaborative translation, focusing on how students developed translation competence in terms of problem-solving, intercultural awareness, and multimodal design (RQ3). Methodological triangulation enhanced the study's validity, while peer debriefing and thick description contributed to its credibility and transferability.

Ethical Considerations and Trustworthiness

Ethical procedures included informed consent, voluntary participation, confidentiality, and participants' right to withdraw at any stage. Trustworthiness was ensured through methodological triangulation, prolonged engagement during project implementation, and a transparent audit trail documenting data collection, coding, and analytical decisions, supporting the study's credibility and dependability.

RESULTS

Metacognitive and Cultural Challenges in Culinary Translation

Cognition encompasses mental processes such as problem-solving, planning, monitoring, and comprehension that are actively self-regulated (Saputri, Sari, & Amaliah, 2025). Non-participant observations during the bilingual menu booklet project revealed substantial metacognitive and cultural challenges as students engaged with culturally embedded culinary items, addressing research question (1). Difficulties emerged across menu categories, including Indonesian vegan dishes (e.g., *gado-gado*, *sayur lodeh*, *urap*, *karedok*, *wedang*), fusion food (e.g., *burger ayam bumbu rujak*, *pizza randang*, *donat tape*), local sweets (e.g., *dawet selasih*, *klepon*, *galamai*, *wajik kletik*), street food (e.g., *rujak cingur*, *nasi kucing*, *tempe mendoan*, *gorengan*, *kerak telur*, *martabak*), and regional seafood (e.g., *sotong pangkong*, *hambae nititi*, *cakalang fufu*). These cases demonstrate that culinary translation extends beyond lexical transfer and requires negotiation of layered cultural meanings, symbolic associations, and preparation-specific knowledge. This finding aligns with Yingmin and Malini's (2021) assertion that food and beverages function as distinctive cultural identifiers with limited cross-linguistic equivalence. As a result, students frequently encountered lexical gaps that triggered cognitive dissonance during collaborative decision-making.

These challenges were observable through prolonged silences, repeated rewording, reference-checking, and requests for cultural clarification, indicating intense cognitive processing. Items such as *sotong pangkong* exemplified students' struggle to represent both physical characteristics and symbolic ties to local identity, reflecting engagement with deeper cultural schemata rather than surface-level substitution. The sensory-rich nature of culinary

language further intensified these challenges, as culinary expressions often involve taste, texture, aroma, appearance, and cultural meaning (Haider, Alzghoul, & Hamadan, 2023; Putri et al., 2025), requiring students to translate embodied experience into rhetorically effective language. Similar tensions arose in translating beverages like *wedang* and hybrid fusion dishes such as *burger ayam bumbu rujak* and *pizza randang*, where students negotiated between cultural authenticity and communicative clarity. These negotiations revealed persistent tensions between domestication and foreignization strategies (Putrawan, 2018), compounded by the need to balance local tradition with globally familiar culinary forms (Haider, Alzghoul, & Hamadan, 2023). Overall, the findings indicate that collaborative bilingual menu translation is a cognitively intensive and culturally mediated process in which students must manage semantic voids, interpret culture-laden lexemes, and collaboratively regulate meaning to produce translations that are both clear and culturally resonant.

Metacognitive and Translation Strategies in Culinary Translation

Systematic document analysis addressing research question (2) revealed that students' metacognitive and translation strategies extended beyond linguistic equivalence toward negotiating tensions between cultural authenticity and reader accessibility. Students demonstrated sensitivity to target audience expectations, functional communicative goals, and ethical considerations in cultural representation. In line with Fi'lia and Zakiyah (2025), who emphasized that traditional snacks embody inherited cultural identity and historical significance, students alternated between foreignization and domestication strategies. Foreignization was employed to preserve cultural uniqueness, while domestication was used to enhance clarity, consistent with Putrawan's (2018) distinction between introducing source-culture uniqueness and naturalizing the text for the target culture. For example, *burger ayam sambal terasi* was variably rendered either by retaining *sambal terasi* to emphasize cultural specificity or by translating it as "chicken burger with spicy shrimp paste chili sauce" to ensure immediate comprehension. Similar patterns appeared in the translation of local sweets such as *galamai*, rendered as "sticky rice cake" or via borrowing, which, as Situmorang et al. (2022) defined, retains source-language terms but may limit comprehension when explanatory glosses are absent.

Further analysis showed that literal translation and borrowing frequently resulted in cultural flattening. Street foods such as *martabak* and *kerak telur* were translated as "stuffed pancake" and "egg crust," while seafood items like *sotong pangkong* and *hambaé nititi* lost references to texture and spiced flavour, limiting cultural richness. Similarly, translations of *urap* as "steamed vegetables with grated coconut seasoning" conveyed basic meaning but omitted deeper cultural symbolism, particularly fermentation-related associations, reflecting what Azzan and Sakale (2025) identified as a limitation of literal translation. To address clarity gaps, students employed amplification defined by Anis (2023) as adding non-original information as seen in "a traditional salad with fruits, vegetables, and boiled cow snout served with fermented shrimp paste sauce" for *rujak cingur*, though this often reduced cultural subtlety. The most complex cases involved symbolically loaded terms such as *nasi kucing* and *randang*, where literal renderings obscured socio-cultural meaning, supporting Li and Hope's (2021) argument about the vulnerability of food terminology to misrepresentation. Consequently, many students relied on descriptive equivalence, combining original terms with explanation, as in *karedok*, *dawet*, and *cakalang fufu*, reflecting efforts to balance intelligibility and cultural specificity. Overall, the dominant strategies observed (descriptive equivalence, amplification, literal translation, and borrowing) align with Yamin and Malini's

(2021) findings, though the tendency toward simplification highlights the growing importance of transcreation as a context-sensitive strategy for conveying the symbolic and emotional depth of culinary texts.

Collaborative Translation through Bilingual Menu Booklet

Findings from the semi-structured interviews addressing research question (3) reveal that collaborative project-based learning (PjBL) in bilingual menu booklet translation exposed students to complex cognitive, cultural, and interpersonal challenges while simultaneously enhancing their translation competence. Although prior studies note that the impact of PjBL on thinking skills and academic outcomes remains debated (Zhang & Ma, 2023), this study provides empirical evidence that PjBL fosters not only technical translation skills but also problem-solving abilities, intercultural awareness, and collaborative communication. Students frequently sought clarification and renegotiated decisions to align perspectives within groups, supporting Putri's (2025) argument that such interaction reduces misunderstanding and improves communicative quality, and echoing Lesmana et al.'s (2023) view that education should cultivate critical, creative, and social thinking. Participants moved beyond literal translation to consider audience, cultural appeal, and pragmatic effects, demonstrating growth in cognitive and metacognitive domains. As students monitored lexical choices, evaluated stylistic appropriateness, and reflected on reader impact, their experiences aligned with Pietrzak's (2022) definition of metacognitive awareness as conscious regulation of planning and problem-solving. However, persistent dilemmas—such as balancing linguistic accuracy with cultural relevance and handling untranslatable terms—revealed gaps in strategic translation competence, compounded by the absence of authentic client feedback, which limited the project's perceived realism.

Beyond linguistic translation, the multimodal design of the bilingual menu booklet emerged as a crucial dimension of competence development. Students reported that decisions regarding layout, typography, colour, and visual balance required careful alignment between aesthetic appeal, cultural identity, and communicative clarity, triggering deeper metacognitive reflection (Bayee, 2023). Negotiations over design choices, explanations of dish names, and readability highlighted how PjBL expands problem-solving beyond text to user experience and cross-cultural visual communication, consistent with Doly's (2024) view of PjBL as interactive and student-centred. Collaboration functioned as both a strength and a challenge: students engaged in rich dialogue as translators, editors, cultural mediators, and designers, supporting the role of metacognitive awareness in self-regulation and context-sensitive decision-making (Pietrzak, 2021; Zarobe & Smala, 2020; Vellanki, Khan, & Mond, 2024). At the same time, uneven participation, inconsistent terminology, and varied proficiency levels occasionally compromised coherence, underscoring the importance of active instructor facilitation. Overall, the project mirrored real-world translation workflows and fostered intercultural sensitivity, ethical awareness, and practical competence (Li, 2023; Nelson & Ponciano, 2021), yet also highlighted PjBL's limitations when authenticity and professional feedback are simulated rather than fully realized.

DISCUSSION

The findings collectively indicate that collaborative project-based translation of bilingual menu booklets functions as a metacognitively intensive and pedagogically meaningful learning environment in which linguistic decision-making is inseparable from cultural mediation and collaborative negotiation. Interpreted through the lens of Project-Based Learning (PjBL), the findings align with constructivist perspectives that emphasize learning

through authentic, genre-specific tasks involving inquiry, problem-solving, communication, and reflective practices (Chang, Choi, & Şen-Akbulut, 2024; Hariyanto et al., 2023). Students' engagement with culturally embedded culinary texts demonstrates that PjBL facilitates deeper cognitive involvement by positioning learners as active agents who must continuously regulate their translation choices, rather than merely apply predefined strategies. This confirms prior research on the pedagogical value of PjBL while extending it to translation contexts that demand both linguistic precision and intercultural sensitivity. From a metacognitive and pedagogical standpoint, the study reinforces the view of translation as a socio-cognitive process shaped by iterative planning, monitoring, negotiation, and revision. The observed tensions between domestication and foreignization, as well as between accuracy and communicative effectiveness, highlight the limitations of product-oriented and taxonomy-driven approaches to translation training. Instead, the findings suggest that translation competence develops through process-oriented instruction that foregrounds strategic decision-making, collaborative reflection, and genre awareness. The incorporation of multimodal design further underscores the expanding scope of translation pedagogy, where textual meaning is negotiated alongside visual and pragmatic considerations. Situated within existing scholarship, this study contributes to translation pedagogy by demonstrating how metacognitive guidance within collaborative PjBL environments supports holistic competence development, better preparing students for the complex demands of professional translation practice.

CONCLUSION

This study highlighted the intricate metacognitive and cultural challenges that students encounter when collaboratively translating bilingual menu booklets in a PjBL setting. Students faced difficulties such as lexical gaps, culture-specific references, and balancing authenticity with clarity, which reveal the limitations of conventional translation pedagogy cantered on linguistic equivalence. The metacognitive and translation strategies employed mainly fluctuating between foreignization and domestication indicate an emerging but still developing awareness that requires further scaffolding. Pedagogically, PjBL proves effective in enhancing students' problem-solving abilities, intercultural awareness, and multimodal design skills essential for contemporary translation practice. However, issues such as inconsistent terminology, uneven participation, and lack of authentic client feedback pose challenges to fully realizing professional competence. To address these, future research should explore longer-term projects involving real stakeholders and incorporate explicit metacognitive training. This study advocates for translator education models that integrate genre-specific tasks, collaborative learning, and metacognitive strategy instruction to cultivate translators who are not only linguistically competent but also culturally sensitive and ethically prepared, endorsing PjBL as a promising approach for comprehensive translator development.

The findings of this study have significant implications for translation pedagogy, curriculum design, and future research in applied linguistics, particularly within vocational and higher education contexts. Pedagogically, the results indicate that collaborative Project-Based Learning (PjBL) is an effective approach for teaching culturally embedded and genre-specific translation, as it enables students to develop metacognitive awareness through planning, monitoring, negotiation, and reflection when dealing with culture-specific items and multimodal constraints. This suggests that translation instruction should move beyond product-oriented evaluation toward process-oriented learning by explicitly integrating

metacognitive strategy training, peer collaboration, and reflective practices. At the curriculum level, the study supports the inclusion of authentic, industry-relevant translation projects such as bilingual menu booklet production to better align translator training with real-world professional demands, particularly in tourism and culinary communication. Assessment practices should therefore account not only for linguistic accuracy but also for cultural appropriateness, strategic decision-making, collaborative contribution, and multimodal effectiveness. Furthermore, the challenges identified, including inconsistent terminology, unequal participation, and limited authentic audience feedback, highlight the need for structured scaffolding and potential collaboration with industry stakeholders to enhance project authenticity. For future research, longitudinal and comparative studies across different translation genres are recommended to further examine the development of students' metacognitive competence and intercultural sensitivity within sustained PjBL implementations, thereby contributing to more comprehensive and practice-oriented translator education.

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