



Interdisciplinary Approaches to Translation and Education

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Abstract

Translation studies have increasingly embraced interdisciplinary approaches to address the complexities of modern communication, education, and globalization. This paper examines the intersection of translation with disciplines such as technology, business, and education, highlighting the transformative impact of emerging tools and pedagogical practices. Drawing on insights from digital translation tools, multimodal communication, and sustainability-oriented projects, the study explores implications for learners, translators, and educators. Through qualitative case studies, thematic analysis, and visual data, it highlights challenges in balancing linguistic accuracy with cultural sensitivity, ethical considerations, and technological adaptability. Findings suggest that interdisciplinary methods promote critical thinking, foster global citizenship, and bridge cultural and professional divides. The research further promotes the importance of empathy and emotional intelligence in an era where translation serves as a transformative force for promoting inclusion and fostering intercultural understanding. These findings underscore the value of interdisciplinary translation pedagogy in preparing learners for the communicative, ethical, and technological demands of the 21st-century professional landscape.

Keywords: interdisciplinary translation, digital tools, sustainability education, cultural sensitivity, global citizenship

1 Introduction

This study explores how interdisciplinary strategies (particularly the integration of translation tasks with digital tools and context-specific content) can foster global competence, cultural sensitivity, and critical awareness among students from diverse academic backgrounds. The research focuses on learners majoring in the English language as well as those from disciplines such as business, agriculture, and education. A series of structured translation activities and reflective practices was implemented to engage students in translation as a means of interdisciplinary learning and cross-disciplinary knowledge transfer.

Grounded in socio-constructivist theory (Vygotsky, 1978), theories of transcultural competence (Canagarajah, 2013; Kramsch, 2021), and ecological approaches to translation (Cronin, 2003), this study investigates how sustainability-themed texts, digital collaboration platforms, and AI-supported translation tools mediate students' learning processes. Furthermore, it examines how translation, when situated within authentic and multimodal contexts, serves not only as an instructional practice but also as a means of fostering ethical awareness and global citizenship. Guided by these considerations, this study seeks to examine:

- How do interdisciplinary and digitally supported translation tasks shape students' awareness of cultural, ethical, and ecological dimensions in communication?
- In what ways do students interact with multimodal tools to construct and negotiate meaning during translation activities?
- What challenges and transformative insights do learners experience when translation is positioned as a cross-disciplinary learning process?

In addressing these questions, this research seeks to contribute to the evolving discourse on translation education by proposing a model that emphasizes the humanistic, interdisciplinary, and technological competencies essential for the next generation of students.

2 Literature Review

Recent scholarship in translation studies emphasizes the importance of preparing learners not only for linguistic tasks but also for broader roles as intercultural mediators and ethical communicators in a globalized society. Scholars such as Monte & Reis (2021), Köngeter (2022), and Jun (2020) advocate for pedagogical shifts that situate translation within its social, political, and environmental dimensions. In this regard, Ahmadova (2025) conceptualizes translation as part of a complex communicative ecosystem where sustainability, access, and ethics are integral alongside traditional fidelity and fluency.

Socio-constructivist theory provides a foundational framework for this pedagogical reorientation. Vygotsky's (1978) notion of mediated learning, combined with Mariati's (2024) emphasis on authentic and collaborative tasks, underscores the importance of socially situated learning. Bossér and Lindahl (2019) further elaborate this view by positioning learners as co-constructors of meaning, engaging in peer interaction, reflection, and experiential learning through complex, real-world tasks. Similarly, OssaParra (2023) and Ulum (2024) emphasize the fluid, negotiated nature of meaning through translanguaging, which allows multilingual users to creatively glide between languages and communicative norms.

The rise of transcultural competence as a key objective in translation education further redefines the translator's role as an ethical and cultural agent. Kramsch (2021) underscores the symbolic and ideological dimensions of language use, calling for approaches that encourage learners to engage critically with issues of power, identity, and representation. This perspective is reinforced by Drugan and Tipton (2017), who emphasize social responsibility in translation practice, as well as by emerging practitioner-oriented discussions that highlight ecological interconnectedness in translation.

Ecological approaches, particularly as articulated by Cronin (2017), advocate viewing translation as a practice situated within networks of human and non-human interaction, including technological and environmental factors. Aligned with the Sustainable Development Goals (SDGs), ecological translation expands the translator's remit to include ethical responsibility, advocacy, and stewardship. Sterling's (2001) concept of "sustainability

literacy” similarly urges educators to cultivate environmental awareness and critical thinking in learners through integrative pedagogical models.

The integration of technology in translation education continues to elicit both enthusiasm and critique. Tools such as DeepL, Google Translate, and Sketch Engine enhance translational efficiency, yet researchers, including Krüger (2020), Bowker (2021), Karasaliu (2024), and Moghe et al. (2025), caution against uncritical reliance. Instead, they promote the development of “machine translation literacy,” which entails the critical and informed use of digital tools within pedagogical settings. Recent research also highlights the transformative potential of immersive platforms such as ThingLink and FrameVR, which support multimodal and experiential engagement with language and context (Jusslin, 2024).

Moreover, interdisciplinary applications of translation within domains such as business communication, environmental science, and public health are expanding pedagogical frontiers. Ayvazyan et al. (2024) advocate for integrating disciplinary content with language learning, while Cahyani et al. (2025) emphasize the role of translation in cultivating global citizenship and intercultural competence.

Beyond theoretical perspectives, assessing the development of these competencies requires validated evaluation models. In addition, well-established assessment frameworks such as the PACTE model (PACTE Group, 2018), Kelly’s (2005) competence-based curriculum, and Göpferich’s (2016) holistic competence structure provide validated indicators for evaluating translation competence development. Intercultural assessment models proposed by Byram (1997) and Deardorff (2006) further inform the systematic measurement of attitudes, knowledge, and critical cultural awareness in interdisciplinary translation settings, thereby strengthening the evaluative grounding of this study. Accordingly, these frameworks guided the evaluative lens applied, particularly in assessing cultural sensitivity, ethical reasoning, and digital integration within student-produced artifacts.

However, despite these developments, relatively few empirical studies have explored how interdisciplinary strategies function in underrepresented educational contexts, particularly where translation is not formally offered as a dedicated academic program. This study addresses this gap by examining how interdisciplinary translation operates within a single underrepresented higher education context where translation is not a formal academic program and where competence development has rarely been empirically assessed.

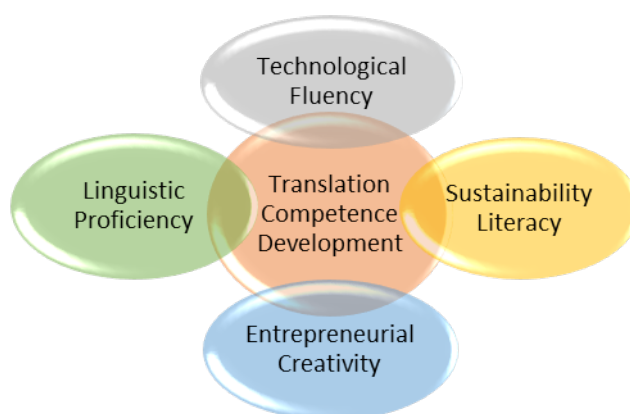


Figure 1. Conceptual Model of Interdisciplinary Integration for Translation Competence Development.

Figure 1 presents the conceptual framework underpinning this study, illustrating the dynamic interplay among translation, digital technology, sustainability, and disciplinary education. This integrative model emphasizes the interconnected nature of linguistic competence, ethical awareness, and domain-specific knowledge in fostering translation competence.

While theoretical contributions have advanced the understanding of interdisciplinary translation pedagogy, a significant gap persists in empirical research, especially in underrepresented educational contexts where translation is not formally established as an academic discipline. This study aims to address this gap by providing a situated analysis of student engagement with translation as an interdisciplinary practice within the context of Albanian higher education.

3 Methodology

This study employed a qualitative exploratory design, grounded in socio-constructivist theory (Vygotsky, 1978), ecological translation models (Cronin, 2003), and the concept of symbolic and transcultural competence (Kramsch, 2021) to investigate how interdisciplinary and multimodal strategies shape translation learning in a multilingual and cross-disciplinary university context. The approach aimed to create a dynamic, student-centered environment by integrating digital technologies, collaborative tasks, and trans-disciplinary content, particularly within ESP translation modules across various academic programs.

3.1 Participants and Setting

The study was conducted during the fall semester of the 2023–2024 academic year at Fan S. Noli University in Korçë, Albania. A purposive sample of 65 undergraduate students enrolled in translation and ESP-related courses participated in the study. Participants were drawn from four academic programs: English Language ($n = 15$), Business ($n = 18$), Agriculture ($n = 16$), and Education ($n = 16$). The English Language cohort had prior exposure to translation theory and practice, while the remaining participants engaged in domain-specific ESP instruction that incorporated translation as a practical skill.

All participants provided informed consent for voluntary participation in accordance with the university's ethical guidelines. Pseudonyms were used to ensure anonymity, and informed consent procedures were approved by the institutional ethics committee. Reflexivity measures were observed to address the teacher-researcher dual role by incorporating peer observation and participant validation practices.

3.2 Data Collection

To ensure data triangulation and rich insights into students' learning processes, the study collected three main types of qualitative data:

Reflective Journals: Biweekly entries documenting learning progress, challenges, and reflections on cultural adaptation, digital tool use, teamwork, and ethical considerations.

Focus Groups and Semi-Structured Interviews: Conducted at semester's end with English and non-English majors to explore perceptions of interdisciplinary learning, engagement with multimodal and AI tools, and the transferability of translation strategies.

Translation Artifacts: Student work, including translated brochures, sustainability reports, bilingual glossaries, interactive infographics, and presentations, evaluated for linguistic accuracy, cultural sensitivity, ethical reasoning, and digital integration.

3.3 Instructional Design and Tools

The instructional design followed a modular structure, progressing from basic translation theory to applied interdisciplinary projects. A range of digital tools was embedded throughout the semester, grouped into five categories:

- *Immersive Platforms:* Wander VR and ThingLink 360° enabled students to explore environmental and cultural contexts, thereby enhancing their spatial awareness and cultural sensitivity.
- *Collaborative Environments:* Conceptboard and Wakelet supported brainstorming, peer editing, and collaborative glossaries, facilitating synchronous and asynchronous teamwork.
- *AI and Creative Tools:* DeepL and Reverso Context aided machine-assisted translation, while Canva AI and Craiyon enabled multimodal content creation.
- *Communication Spaces:* FrameVR simulated multilingual, intercultural settings for presenting translated content and role-based translation tasks.
- *Terminology Resources:* IATE and the FAO Multilingual Portal provided domain-specific vocabulary in agriculture, business, and technical fields, supporting accuracy and precision.

This tool framework balanced creativity, communication, and content expertise, promoting media literacy and transferability across disciplines.

Student-produced artifacts were evaluated using three criteria: *cultural sensitivity*, *ethical reasoning*, and *digital integration*. Cultural sensitivity included using an appropriate register, adapting to the audience, and mitigating culturally harsh or exclusionary phrasing. Ethical reasoning focused on respectful representation, dignity, and avoidance of stigmatizing language. Digital integration was assessed in terms of the strategic use of translation technologies, coherence in multimodal design, and evidence of iterative improvement based on tool output. These criteria ensured that the evaluation reflected both linguistic quality and interdisciplinary communicative competence.

3.4 Analytical Procedures

The qualitative data collected from open-ended reflections, group discussions, and project outputs were analyzed using reflexive thematic analysis following the six-phase framework proposed by Braun and Clarke (2006). The data was manually coded, without the use of computer-assisted qualitative software, to maintain closeness to the material and preserve contextual nuances. The six phases of analysis included:

1. Familiarization with all data sources (journals, transcripts, artifacts)
2. Generating initial codes across all data types
3. Identifying and clustering emerging themes
4. Reviewing and refining themes
5. Defining and naming themes
6. Synthesizing findings for reporting and interpretation

Key themes included the interdisciplinary transfer of knowledge, the efficacy of digital tools, cultural sensitivity, and emotional engagement. Cross-validation of data was conducted by comparing reflective journal themes with focus group insights and student outputs. To enhance the credibility of the findings, peer debriefing was conducted with two external researchers, and member checking was carried out with selected participants to validate the interpretations. Researcher reflexivity was maintained through continuous memo writing and triangulation among participant reflections, focus group data, and project artifacts. Manual coding was used to preserve the contextual richness of the data. To further ensure reliability, a subset of ten

student reflections was independently coded by two researchers. Any discrepancies were discussed and resolved through consensus to ensure consistency in identifying key themes.

To enhance analytic transparency, a concise codebook was developed during the initial coding cycle, containing core categories such as *cultural mediation*, *digital problem-solving*, *ethical reflexivity*, and *interdisciplinary knowledge transfer*. Each category included operational definitions and illustrative student excerpts to ensure consistency across data sources. Coding disagreements were resolved through negotiated consensus, resulting in the refinement of category boundaries and the clarification of inclusion criteria.

Data saturation was established when the final two weeks of reflective journals and the last focus group produced no new codes or thematic patterns related to cultural adaptation, ethical reasoning, or digital integration, indicating thematic sufficiency for this dataset.

Table 1 outlines the integration of digital tools across instructional weeks and their alignment with key intercultural, communicative, and ethical learning goals. Each task was designed to scaffold students' interdisciplinary engagement with translation and sustainability through multimodal experiences.

Table 1. Weekly Activities and Aligned Competencies

Week	Focus	Tool(s) used	Task description	Target competency
2	Orientation to VR & sustainability	Wander VR, FAO Portal	Explore 360° environments and document local sustainable practices	Intercultural awareness
5	Multilingual infographic creation	Canva AI, Reverso Context	Translate and localize green tips into visually engaging formats	Multimodal communication
8	Collaborative glossary development	IATE, Conceptboard	Co-create a terminology glossary across thematic domains (e.g., water, soil)	Terminology awareness & collaboration
11	Ethical translation dilemmas	FrameVR	Engage in real-time VR role-plays addressing ethical translation scenarios	Empathy and critical reflection
14	Final project week	Wakelet, Craiyon	Collect multilingual and visual content to communicate sustainability themes	Creativity, digital tool integration

As shown in Table 1, the integration of digital tools was intentionally sequenced to scaffold intercultural awareness, multimodal communication, and ethical reasoning. The curriculum progressed from exploration and collaboration to critical reflection, with students alternating between individual and group tasks to enhance engagement with culturally situated sustainability content.

3.5 Ethical Considerations

Prior to data collection, informed consent was obtained from all participants. Students were informed that their participation was voluntary and that all contributions would be anonymized and used solely for academic research purposes. Participants retained the right to withdraw at any time without consequence. This methodological design ensured alignment between data collection and the socio-constructivist and ecological paradigms guiding the study.

4 Findings

The analysis of student responses, reflections, and project outputs yielded several prominent themes that address the integration of digital tools, the development of interdisciplinary skills, and the cultivation of cultural and ethical sensitivity. Each theme reflects how students experienced translation as an interdisciplinary practice within their own disciplinary context.

4.1 Development of Digital Literacy and Technological Competence

Students across disciplines reported increased familiarity with digital tools such as *DeepL*, *Reverso Context*, *Canva AI*, and immersive platforms like *Wander VR* and *FrameVR*. English majors expressed stronger initial confidence, often using these tools to refine linguistic accuracy. Meanwhile, students from other disciplines emphasized the utility of AI-based platforms for interpreting domain-specific terminology and concepts.

Across both groups, students described a gradual evolution from using translation tools primarily as supports to employing them with increasing critical awareness. For instance, participants mentioned that early reliance on machine-generated drafts gave way to nuanced editing informed by context, tone, and communicative intent. Students also appreciated tools like *ThingLink 360°* and *Conceptboard* for visualizing cultural contexts and enhancing their understanding of audience expectations. The shift in tool engagement was accompanied by increased self-efficacy and a growing perception that digital literacy was indispensable for effective interdisciplinary translation.

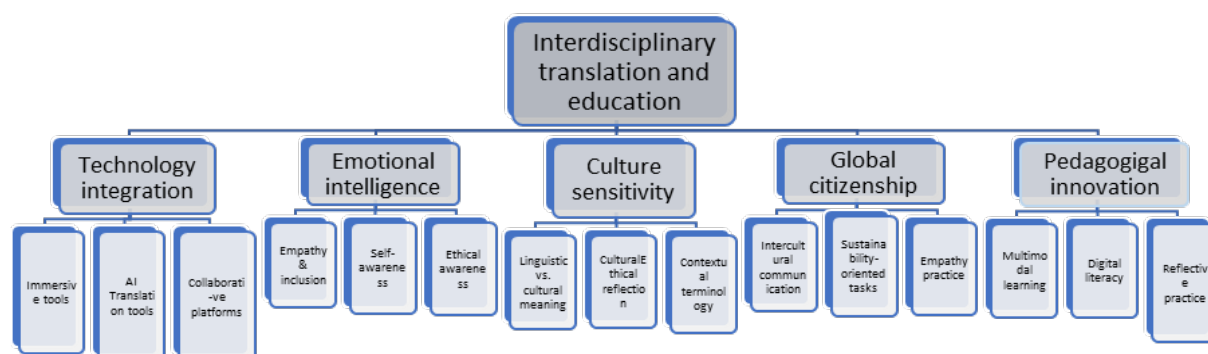


Figure 2. Thematic Relationships from Student Reflections

Figure 2 presents the thematic map that emerged from inductive coding of student reflections and group discourse. Five main elements: digital confidence, collaboration, cultural navigation, ethical awareness, and creative framing were identified. Arrows in the map reflect directional relationships, illustrating how competencies such as digital confidence often catalyze higher-order capabilities like creative framing and ethical reasoning, consistent with socio-constructivist models of scaffolded learning. The visualization illustrates how the interplay of technology, ethics, and intercultural dialogue shaped students' learning trajectories.

4.2 Enhanced Critical Thinking and Problem-Solving

A recurring theme in student journals and focus group reflections was the struggle (and eventual success) in translating culturally embedded terms, sustainability concepts, and multimodal content. Students faced challenges in selecting between literal and adaptive translations, especially when texts involved culturally specific metaphors or socio-political nuances. Students from non-language disciplines often prioritized communicative clarity over lexical precision, while English majors struggled to maintain stylistic fidelity. In many cases,

students navigated ambiguity by drawing on peer feedback, conducting independent cultural research, or consulting external resources, such as the *FAO Multilingual Portal* or *IATE*. For example, one group struggled with the Albanian equivalent of “inclusive education policy.” The term required careful consideration of educational legislation and inclusive terminology that would resonate with local educators and stakeholders. These translation moments became sites of collaborative problem-solving, linking language to social and institutional realities.

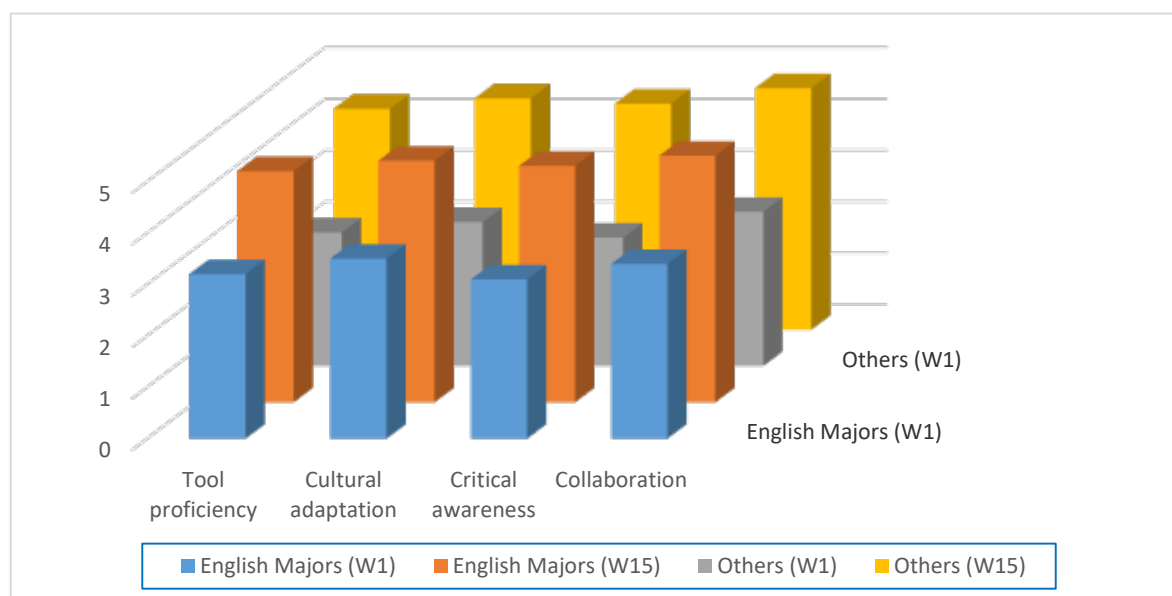


Figure 3. Development of interdisciplinary translation competence (week 1-15)

The above figure illustrates learning trajectories that align with socio-constructivist notions of scaffolded development (Vygotsky, 1978), underscoring the importance of peer interaction and reflective practice in advancing translation competence across disciplinary boundaries. The data represent self-assessed and observational scores across four core domains: digital tool proficiency, cultural adaptation, critical awareness, and collaborative practice. There was noticeable progression in all domains, especially among non-English majors who started with lower initial scores but showed a sharper increase over time. English majors demonstrated consistent gains in cultural adaptation and ethical reflection, whereas non-English majors made significant advances in integrating tools and collaborating across disciplines. These outcomes suggest that the multimodal and tool-mediated instructional design, coupled with thematic translation projects, supported holistic development in line with the aims of global citizenship and translational pedagogy.

4.3 Bridging Disciplinary Knowledge Through Collaboration

The interdisciplinary nature of the tasks fostered collaboration across academic boundaries. Translation groups were often composed of students from diverse majors. English language students contributed linguistic precision and stylistic editing, while their peers from other fields provided domain-specific insights.

Tools such as *Padlet*, *Conceptboard*, and *Wakelet* enabled real-time brainstorming and visual mapping of translation alternatives. Students collaboratively created glossaries and visual annotations, helping one another negotiate technical content, cultural idioms, and textual coherence. The shared authorship of translated multimodal texts (e.g., infographics, video captions) promoted accountability, strengthened negotiation skills, and exposed students to audience-centered reasoning.

Collaboration also extended to peer review processes. Students were encouraged to critique and revise each other's work, resulting in a deeper awareness of diverse readerships and stakeholder perspectives. These interactions reflected an authentic translation workflow, preparing students for real-world interdisciplinary teamwork.

Table 2 summarizes the most prominent emergent themes across both participant groups (English majors and non-English majors) based on their reflective entries, collaborative discussions, and performance on translation tasks. English majors tended to display higher metalinguistic awareness and stylistic sensitivity, particularly in adapting idiomatic expressions and tones for target audiences. Meanwhile, non-English majors emphasized the practical reception of messages and often related translations to specific professional contexts. Both groups actively engaged with the ethical implications of translation, particularly when working with content related to sustainability or culturally embedded messages. These findings confirm the effectiveness of interdisciplinary groupings in fostering collaborative zones of development and broadening learner perspectives, which are key components of global competence.

Table 2. Summary of emergent themes by student group

Theme	English majors	Non-English majors	Overall observation
Cultural sensitivity	Knowledge of tone/ idioms	Emphasis on audience reception	High engagement across both groups
Digital tool usage	Skilled in editing and evaluation	Frequent use of educational tools with support	Improved metacognition and tool fluency
Interdisciplinary collaboration	Shared strategies and feedback	Valued content expertise and discussion	Strengthened group negotiation and peer learning
Ethical reflection	Applied translation principles	Raised social and inclusion questions	Deepened awareness of ethical responsibilities in translation
Cognitive and emotional engagement	Greater reflection on language choices	Strong emotional responses to content	Transformative learning across both cohorts

4.4 Ethical and Emotional Dimensions of Translation

Students engaged with ethically charged texts, including refugee testimonials and public health messages, which prompted reflection on the emotional labor of translation. While the language tasks were demanding, many students expressed that translating such materials cultivated empathy and social responsibility. They became more attuned to tone, implied meaning, and the importance of representation.

English majors noted the difficulty of maintaining neutrality while conveying emotional depth, while non-language students often raised questions about appropriate terminology and audience sensitivity. The use of collaborative platforms enabled students to share concerns and receive feedback on how to strike a balance between emotional nuance and textual clarity.

Overall, these findings suggest that interdisciplinary translation tasks (supported by digital tools, authentic content, and peer interaction) served as catalysts for critical reflection, intercultural communication development, and ethical awareness in translation education.

5 Discussion

Grounded in the analytic procedures outlined above, the following section integrates representative excerpts from student reflections, focus groups, and translation artifacts to illustrate how key themes were identified and interpreted.

5.1 Interdisciplinary Engagement and Ethical Awareness in Translation

The study confirms that interdisciplinary engagement (particularly through tasks connecting sustainability, education, and public communication) expanded students' understanding of translation as a complex and situated communicative act rather than a merely linguistic process. In line with Cronin's (2017) conception of translation as embedded within broader ecological systems, learners increasingly recognized their role as mediators of meaning across disciplinary and cultural domains.

Students with little prior translation experience developed context-aware strategies by drawing on field-specific knowledge. For example, non-language majors translating inclusive education policies played an active role in localizing global discourse to align with local institutional realities. This finding is consistent with transformative pedagogical models emphasizing learner agency and reflective meaning-making (Jääskelä et al., 2020; Björnhammer et al., 2021; Mairitsch, 2023). The study thereby extends Cronin's (2017) ecological translation framework by demonstrating empirically how digital mediation can foster ecological consciousness and ethical reflection.

Further, the findings contribute to emerging research on emotional intelligence in translation education (Zhao et al., 2025; Qiu, 2023). When working with emotionally sensitive texts, students developed heightened awareness of the ethical implications of tone, lexical choice, and representational framing. Emotional engagement with refugee testimonies, public health messaging, and sustainability narratives led students to reflect on how language conveys dignity, urgency, and empathy. This aligns with Canagarajah's (2013, 2020) framing of translanguaging as an ethical negotiation across identities and power relations.

For instance, one student noted, *"I realized translation is not only about choosing the right words, but about how those words shape people's understanding of social issues"* (Student 14, Reflection, Week 8). Another student translating an inclusive education policy commented, *"The original text felt too bureaucratic. We adapted it to sound more human and respectful for Albanian teachers"* (Focus Group A).

A representative artifact included a revised bilingual policy brief where students softened directive modality ("must comply") into culturally appropriate recommendations ("should adhere to the following guidelines") to align with local institutional norms.

Together, these developments demonstrate that interdisciplinary translation functions simultaneously as an intellectual, ethical, and affective practice, preparing learners for socially responsible communication in real-world contexts.

5.2 Digital Tools: From Dependency to Discernment

Students initially relied heavily on AI-supported translation tools, reflecting concerns regarding passive acceptance of machine-generated output (Bowker & Marshman, 2009, 2020; Naveen & Trojovský, 2020). Over time, however, learners demonstrated a shift from dependence to informed discernment, developing what is increasingly referred to as machine translation literacy. The integration of tools such as *Reverso Context* and *Canva AI* with immersive environments like *ThingLink* and *Wander VR* enabled students to critique automated suggestions and engage in intentional, context-sensitive revision.

Student reflections illustrated this progression: *“At first, I copied whatever DeepL suggested. Later, I started checking context, register, and audience first”* (Student 7). In one translation assignment, a student utilized VR-based field exploration (Wander) to verify geographical and cultural references before finalizing terminology, adding notes such as, “I confirmed the environmental features of the area before choosing the Albanian equivalents.”

An artifact example includes a sustainability poster initially produced with automated templates, later revised to address tone, clarity, and cross-cultural appropriateness based on student deliberation.

This progression indicates growing autonomy and digital criticality, which are essential competencies to contemporary translation practice.

5.3 Collaboration Builds Intercultural and Professional Competence

Collaborative translation work fostered sustained interaction across disciplinary backgrounds and linguistic profiles. Consistent with Vygotskian socio-constructivist principles (Vygotsky, 1978), peer scaffolding and dialogic negotiation enabled students to construct knowledge collectively. Non-language majors contributed domain-specific perspectives, prompting English majors to prioritize communicative clarity and audience relevance over formal syntactic fidelity.

Collaborative dynamics emerged strongly in student accounts. One English major explained, *“Working with engineering students helped me see the terminology from their perspective. I stopped focusing on perfect grammar and started thinking about clarity”* (Student 22).

In a joint project translating a safety guideline infographic, non-language majors provided key disciplinary knowledge, while language majors adapted the phrasing and layout for a general audience, hence demonstrating a meaningful interdisciplinary contribution.

This relational process supports Kramsch’s (2021) concept of symbolic competence, in which communicators make culturally resonant choices shaped by social context. Collaborative review practices further mirrored professional translation workflows, reinforcing transferable intercultural and teamwork competencies.

5.4 Theoretical Contributions and Pedagogical Implications

By integrating thematic translation tasks with digital and disciplinary content, this study operationalized theoretical principles drawn from ecological and constructivist frameworks. Students engaged in translation as situated practice, negotiating meaning within real-world communicative ecologies rather than performing isolated linguistic transformations.

Emotional engagement was clearly visible in artifacts such as translated refugee letters where students intentionally softened harsh lexical items (e.g., replacing “victim” with “survivor”). As one student shared, *“I wanted the translation to show respect, not pity”* (Student 5).

Although calls for interdisciplinary translation pedagogy are well established in scholarship, empirical documentation of its implementation in underrepresented educational contexts remains limited. This study addresses that gap by providing a replicable model of interdisciplinary translation practice within Albanian higher education.

In summary, the findings demonstrate that interdisciplinary approaches to translation foster critical, culturally aware, and technologically competent communicators (capacities that are essential in today’s globalized and multilingual professional environments).

6 Conclusion

Interdisciplinary translation education can foster learners who are ethically attuned, digitally literate, and globally competent. By combining technology, collaboration, and sustainability-oriented content, students enhanced linguistic mediation, intercultural reasoning, digital fluency, and ethical decision-making. Translation emerged as a socially embedded, reflective, and affective act bridging human experiences.

Students' engagement with AI tools (*DeepL, Canva AI, Wander VR, Conceptboard*) evolved from reliance to discernment, highlighting the importance of machine translation literacy. The competencies developed (sensitivity to cultural nuance, emotional resonance, and social responsibility) are critical in professional contexts where translation intersects with education, public policy, and digital communication.

As a single-site study situated within one Albanian university, the findings should be interpreted as context-dependent rather than broadly generalizable. Additionally, the dual role of the instructor-researcher may have influenced student participation and responses despite efforts to maintain reflexivity and peer validation. The disciplinary imbalance in the sample, with a higher proportion of non-language majors, may also shape the applicability of the model to more traditional translation programs.

Future research should incorporate mixed-methods approaches and longitudinal tracking to measure sustained competency development across semesters and institutional contexts. These findings underscore the need for educators to be prepared to implement interdisciplinary, technology-enhanced, and ethically oriented translation curricula.

7 Policy and Pedagogical Implications

Grounded in the study's empirical findings, several actionable implications are proposed for curriculum reform and teacher training. The recommendations presented here are intended to support institutions in designing translation education that is interdisciplinary, socially responsive, and technologically integrated.

Curriculum Design: Modules should link translation to global issues (such as sustainability, public health, and inclusion) and authentic tasks (including policy documents, research briefs, and awareness campaigns) to develop domain-specific literacy and adaptive communication strategies.

Institutional Collaboration: Cross-disciplinary partnerships between language programs and other faculties can include joint courses, shared assessments, and guest lectures, ensuring curricula align with societal and professional needs.

Educator Development: Ongoing training in digital pedagogies, interdisciplinary curriculum design, and student-centered facilitation positions educators as facilitators of intercultural dialogue and ethical communication.

Digital Infrastructure: Equitable access to tools (IATE, Canva AI, ThingLink, VR platforms) and embedded digital literacy instruction support participation across diverse disciplinary and linguistic backgrounds.

Institutionalizing these strategies can advance translation pedagogy as a transformative vehicle for ethical, intercultural, and technology-enhanced education.

Acknowledgement

We thank the students of Fan S Noli University who participated in the study.

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