

TECHNICAL TRANSLATION PEDAGOGY IN ROMANIAN UNIVERSITIES: SURVEY EVIDENCE ON COMPETENCE DEVELOPMENT AND TECHNOLOGY USE¹

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Abstract

This article offers an examination of current pedagogical practices in technical translation training in Romania, situating them within a consolidated theoretical framework that integrates genre-based approaches, competence development models, and technology-mediated professional workflows. While recent scholarship has clarified the conceptual distinctiveness of technical translation by emphasising the functional, procedural and risk-sensitive characteristics of technical genres, far less is known about how these insights are operationalised in the classroom. Addressing this gap, the study draws on empirical evidence collected through a national survey of 23 university translation lecturers affiliated with six Romanian institutions to map teaching methods, technology and AI integration, perceived student competencies, and curriculum–industry alignment. Methodologically, the research employs a structured questionnaire combining closed and open items, thus enabling both descriptive quantification of prevailing tendencies and qualitative interpretation of lecturers’ reflective accounts. The findings reveal a pedagogical landscape that has largely shifted towards practice-oriented and interaction-driven instruction, with project-based learning, case studies, workshops and guided group activities emerging as central methods. However, despite this generally practice-aligned orientation, the systematic use of authentic, workflow-based translation projects remains uneven, suggesting that conceptual acceptance of genre-anchored pedagogy does not always translate into full curricular implementation. Technology integration is widespread, particularly with machine translation systems, terminology tools and CAT environments, and lecturers consistently adopt a reflective rather than substitutional stance towards artificial intelligence. AI tools are predominantly used to foster analytical judgement, comparative evaluation and post-editing competence—reinforcing the human translator’s role as responsible decision-maker—while concerns related to licensing costs and institutional infrastructure continue to limit full incorporation of quality-assurance and project-management applications. With respect to student performance, respondents converge on a cluster of persistent difficulties that closely mirror the communicative and cognitive demands of technical genres: terminological accuracy and consistency, domain knowledge, contextual adaptation and revision competence. These challenges confirm the need to treat terminology governance, research strategies and revision workflows not as ancillary skills, but as core components of technical translation competence. Curriculum alignment with professional expectations is generally perceived as moderate, with local efforts towards industry engagement hindered by episodic collaboration and resource constraints. Taken together, the results delineate a field in transition: lecturers demonstrate strong awareness of contemporary theoretical developments and recognise the necessity of genre-anchored,

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competence-driven and technology-aware training, yet institutional conditions, assessment traditions and infrastructural limitations constrain full realisation of these principles. By placing new empirical evidence in dialogue with an established conceptual trajectory, the study contributes not only to documenting current pedagogical practices but also to consolidating a coherent research programme in technical translation pedagogy. It concludes with structural recommendations for strengthening genre-task alignment, integrating revision-centred assessment, scaffolding competence development and institutionalising reflective technology use, thereby supporting the long-term maturation of technical translation education within Romanian higher education and beyond.

Keywords: technical translation; translation pedagogy; translator competence; CAT/QA tools; curriculum–industry alignment.

1. Introduction

Over the past years, research in specialised (LSP) translation has shown that technical translation is most productively defined not by domain labels alone, but by its genre ecology and functional orientation (Dejica, 2020; Dejica, in press–a). Technical texts—such as manuals, specifications, operating procedures or technical bulletins—are characterised by a strong task-directed logic, usability constraints and risk-sensitive communicative purposes, which distinguish them fundamentally from scientific genres oriented toward epistemic knowledge construction and disciplinary argumentation. This genre-based distinction has contributed to clearer conceptual delimitation within LSP translation and has had direct implications for training, assessment and research design (Dejica, in press–b; Dejica, in press–c).

In parallel with this conceptual consolidation, the professional environments in which technical translators operate have become profoundly technology-mediated. Contemporary technical translation is performed within complex tool ecologies that combine CAT environments, terminology management systems, automated quality-assurance applications, machine translation and, increasingly, AI- and LLM-assisted drafting and post-editing. In response to these developments, a practice-oriented research agenda has argued that technology should be treated as an explicit analytical variable, that genre-anchored translation tasks represent the most appropriate unit for both research and training, and that quality assessment must extend beyond linguistic equivalence to include usability, consistency and risk management (Dejica, in press–b; Dejica, in press–c; Stiegelbauer, 2025).

While these theoretical and methodological advances have clarified what technical translation *is* and how it *functions* in professional settings, less empirical attention has been devoted to how these insights are actually operationalised in translation classrooms. Previous meta-analyses of Romanian doctoral research have shown a persistent dominance of text-centred and contrastive approaches, alongside limited engagement with technology-mediated practices and genre-level pedagogy (Dejica, Pungă, Badea & Vilceanu, 2022). More recent work on curriculum development and competence-based training has outlined directions for modernising translation programmes, particularly through the EMT and PACTE frameworks, project-based learning and the gradual integration of digital tools and AI (Grigoraş & Dejica 2025, Dejica, in press–b). However, these studies have largely operated at a conceptual or programmatic level, leaving a gap regarding lecturers' current practices, perceptions and constraints.

The present article is designed to complete and connect this line of research by introducing empirical evidence from a national survey (Appendix A) of translation lecturers in

Romania. It builds directly on the genre-based delimitation of technical translation and on the concept of the multidimensional translator (Dejica & Dejica-Carțiș, 2020), extending these frameworks into the domain of pedagogy. At the same time, it operationalises the practice-oriented research principles proposed for technical translation—most notably the treatment of technology and AI as design variables—within the context of teaching and curriculum alignment. In doing so, it complements earlier conceptual work with data-driven insights and aligns methodologically with the scenario-based approach developed for both technical and scientific translation research (Dejica, in press–b; Dejica, in press–c).

Drawing on responses from 23 translation lecturers across six Romanian universities, the study explores how technical translation is currently taught, how digital tools and AI are integrated and critically framed, where lecturers locate persistent student difficulties, and how they assess the alignment between curricula and professional realities. By examining these dimensions together, the article aims to bridge the gap between established theoretical frameworks, emerging technological practices and everyday pedagogical decision-making.

Ultimately, this contribution seeks to reposition technical translation pedagogy within a coherent research continuum: from conceptual delimitation and competence modelling to empirical classroom evidence and scenario-level recommendations. In this sense, the article adds new data to the field (Gerzymisch-Arbogast, 2008) and consolidates and completes an existing research trajectory focused on the systematic, genre-anchored and technology-aware development of technical or specialized translation as both a professional practice and an academic discipline.

2. Conceptual Background

This study approaches technical translation through a genre-based lens that foregrounds communicative purpose, recurrent text types and the functional constraints of professional documentation (Swales, 1990; Bhatia, 1993; Trosborg, 2000). Prior work has argued that technical texts form a coherent genre ecology oriented toward operational use, procedural clarity and functional adequacy, with translation decisions evaluated against usability, consistency and risk management rather than sentence-level equivalence alone (Dejica, 2020, Dejica, in press–a). Within this perspective, genre-task alignment becomes a central pedagogical principle: competence development should be organised around recurring communicative functions—procedural description, warning and compliance, parameter specification, troubleshooting—so that students experience terminological propagation, cross-text consistency and iterative revision across documentation sets (Dejica, in press–b).

The competence architecture that sustains such training is captured by established frameworks (PACTE, 2003; EMT, 2022) and by the multidimensional translator model, which integrates linguistic–textual abilities with thematic literacy, strategic decision-making, technology use, workflow coordination, quality assurance and professional responsibility (Dejica & Dejica-Carțiș, 2020). In technical contexts, translators are expected to operate in collaborative tool ecologies, interact with subject-matter experts and ensure coherence across multilingual documentation, which means pedagogy must cultivate not only textual skills but also process awareness, tool literacy and accountability. Consequently, effective curricula mobilise project- and scenario-based learning designs that stage authentic tasks and professional workflows rather than isolated exercises, enabling students to internalise revision as a core competence and to connect terminological governance with downstream effects on users and systems (Dejica, in press–b).

Because contemporary practice is technology-mediated by default, the framework adopted here treats digital tools—notably CAT environments, translation memories, termbases,

automated QA and MT/LLM systems—as explicit design variables in both research and teaching. The didactic aim is not tool operation per se, but the cultivation of analytical judgement through tasks such as instrumented post-editing, output comparison and error-typology analysis, where students calibrate decisions against function, audience and risk. This requires institutions to create conditions for reflective integration—licensed access, staff development, and curricular flexibility aligned with recognised competence descriptors—so that technology can be leveraged to strengthen, rather than displace, human agency and responsibility in technical translation.

Anchored in these premises, the present article mobilises a consolidated conceptual triad—genre, competence and technology—as the analytical scaffold for interpreting current pedagogical practices reported by Romanian lecturers. The goal is to observe how these principles are enacted in classrooms, how lecturers negotiate tool-rich workflows and assessment, and where structural tensions persist between conceptual intent and institutional realities (Dejica, Pungă, Badea & Vîlceanu, 2022).

The genre–competence–technology orientation has also generated follow-up LSP translation research in our environment. Current projects examine website localisation (Mali & Dejica, 2025), post-editing and assessment in medical translation (Kovács & Dejica, 2025), and linguistic/translation issues in environmental sustainability (Sburlea & Dejica, 2024), thereby implementing the directions formulated in our doctoral meta-study and practice-oriented framework (technology as an explicit variable; genre-task alignment; QA-centred evaluation). Together, these projects demonstrate the translation of recommendations into research design and help consolidate a national evidence base for specialised-translation pedagogy.

3. Methodology

The present study adopts a descriptive, survey-based research design (Appendix A) in order to capture current pedagogical practices, technological orientations and curricular perceptions among university-level lecturers involved in technical translation training. This approach is consistent with established methodological recommendations in Translation Studies for exploratory and diagnostic investigations aimed at mapping practices, identifying research tendencies and informing pedagogical development (Williams & Chesterman, 2002; Vandepitte, 2008).

3.1. Research Instrument

Data were collected through a structured online questionnaire entitled *Teaching technical translation in a digital world* (Appendix A), specifically designed to investigate the relationship between pedagogical practices, technology integration and perceived competence development in technical translation courses. The questionnaire was developed in accordance with survey research principles, prioritising clarity, neutrality and respondent efficiency, and was distributed electronically via Google Forms, a platform chosen for its accessibility and data-collection efficiency (Wellington, 2015).

The instrument comprised six thematically organised sections: (1) professional and demographic profile; (2) pedagogical approaches and teaching methods; (3) integration of digital tools and AI; (4) student competencies and professional development; (5) curriculum development and institutional factors; and (6) additional qualitative insights and recommendations. The questionnaire combined Likert-scale items, multiple-choice and ranking questions, as well as open-ended prompts, allowing for both quantitative mapping of

tendencies and the collection of richer, reflective responses. The overall structure followed standard guidance to position closed questions before open prompts in order to sustain engagement and response quality (Neuman, 2021).

3.2. Participants and Data Collection

The target group consisted of university lecturers teaching technical or specialised translation in Romanian higher-education institutions. Participants were recruited digitally, primarily via email, which enabled the extension of the geographical scope beyond local institutional settings. A total of 23 valid responses were obtained from lecturers affiliated with six universities, geographically distributed across five Romanian cities (Alba Iulia, Cluj-Napoca, Constanța, Oradea, and Timișoara), with two institutions based in Timișoara.

The respondent group included university assistants, lecturers and full professors, with teaching experience ranging from early-career to over fifteen years of academic practice. A substantial proportion of respondents also reported professional translation experience, providing an empirically relevant perspective on the relationship between academic training and market expectations. Participation was voluntary, and respondents were informed about data confidentiality and ethical use in accordance with GDPR requirements, as outlined in the introductory section of the questionnaire.

3.3. Data Analysis Procedures

The analysis combined descriptive quantitative techniques with qualitative thematic interpretation. Closed-ended questions were analysed using frequency and distribution measures in order to identify dominant pedagogical approaches, patterns of technology and AI integration, and perceived strengths and weaknesses in student competence development and curricula. Open-ended responses were subjected to qualitative content analysis, allowing recurrent themes, concerns and recommendations to emerge inductively.

Interpretation of the results followed an abductive logic, whereby observed patterns were related back to established theoretical constructs in genre studies, competence frameworks and practice-oriented translation research (Dejica, in press–b). This dual analytical strategy supports data triangulation and enables the results to be discussed not as isolated survey findings, but as empirically grounded indicators situated within the broader conceptual landscape outlined in Section 2.

By combining methodological transparency with theoretical anchoring, this design ensures that the findings can both inform local curriculum development and contribute to the cumulative, comparative study of technical translation pedagogy in digitally mediated educational contexts.

4. Results and findings

This section presents the main findings of the survey, organised thematically around pedagogical practices, technology and AI integration, student competence development, and curriculum–industry alignment. The analysis integrates interpretation at each stage, relating observed patterns to genre-based and competence-oriented perspectives on technical translation training.

4.1. Pedagogical Approaches and Assessment Practices

The results (Table 1) indicate that technical translation teaching in Romanian universities is predominantly practice-oriented, yet uneven in terms of task authenticity and assessment design. A strong majority of respondents report using project-based learning, case-study approaches and translation workshops as core teaching methods. These approaches are frequently complemented by group discussions and problem-based activities, suggesting a general shift away from exclusively lecture-based instruction. At the same time, traditional lectures and textbooks remain present, typically framed as moderately effective when working with Generation Z students.

Interactive methods are widely integrated, with most lecturers reporting frequent or systematic use of collaborative tasks. However, the incorporation of authentic, real-world translation projects—such as client-simulated assignments or industry-driven workflows—appears less systematic. While many lecturers recognise their pedagogical value, such projects are often used only occasionally, indicating structural or institutional constraints rather than conceptual resistance.

Assessment practices reflect this hybrid pedagogical landscape. Project-based and portfolio-based evaluation methods are widely used, yet traditional written examinations continue to coexist with performance-oriented assessment. Peer evaluation and assessment based on real-world translation assignments are reported less frequently, despite their relevance for professional preparation. This combination suggests that, although pedagogy is increasingly practice-driven, assessment has not fully shifted toward genre-task and workflow-based criteria, which are central to technical translation competence.

Table 1.

Predominant pedagogical and assessment practices (n = 23)

Dimension	Most frequently reported practices
Teaching methods	Project-based learning; case studies; translation workshops; group discussions
Use of interactive methods	Frequent or systematic integration
Authentic projects	Occasional to frequent, but not systematic
Assessment	Project-based and portfolio-based, combined with traditional exams

Overall, these findings point to a pedagogical orientation that aligns conceptually with genre-based training, but that still requires stronger alignment between teaching methods, assessment formats and professional task structures.

4.2. Technology and AI Integration in Technical Translation Courses

Technology is firmly embedded in current teaching practices. More than half of the respondents report extensive integration of digital tools, while nearly all others indicate moderate integration. Machine translation engines and terminology management tools are the most widely used technologies, followed by CAT tools and AI-based translation systems. By contrast, quality-assurance tools, project-management software and post-editing-specific applications are reported far less frequently, despite their centrality in professional technical translation workflows.

Lecturers' attitudes toward AI are notably nuanced. The vast majority describe AI as a valuable tool requiring careful integration, and only isolated responses frame it as a potential threat or adopt a neutral stance. In terms of pedagogical strategy, respondents tend to favour either extensive integration accompanied by critical analysis or cautious, limited integration, with explicit emphasis on helping students understand both the affordances and limitations of AI-generated output. Avoidance of AI is exceptional rather than typical.

The results are presented in Table 2 and suggest that AI is not treated as a shortcut or productivity enhancer in isolation, but as a didactic object through which analytical, revision and decision-making skills can be developed. Lecturers report using AI to foster post-editing strategies, comparative analysis and critical evaluation, thereby reinforcing the human translator's role in ensuring quality and responsibility.

Table 2.

Technology and AI integration patterns

Aspect	Dominant tendency
Overall technology integration	Extensive or moderate
Most used tools	MT engines; terminology databases; CAT tools
AI perception	Valuable tool requiring careful integration
AI pedagogical approach	Extensive integration with critical analysis or cautious integration

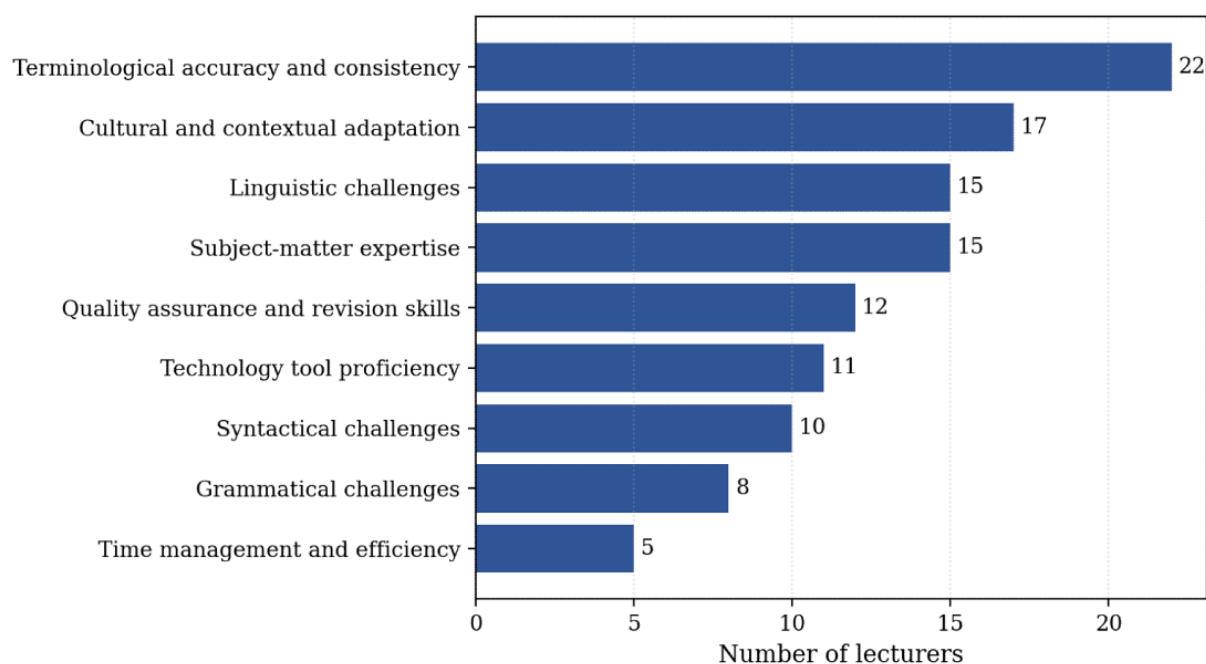
Despite this positive orientation, respondents consistently identify licensing costs as the main barrier to deeper or more systematic technology integration, followed by limited institutional resources and the rapid pace of technological change. This highlights the role of infrastructural and governance factors in shaping pedagogical possibilities.

4.3. Student Competencies and Recurrent Difficulties

Lecturers' assessments of student performance reveal a profile that is broadly consistent with the communicative demands of technical genres (Figure 1). Most respondents describe students' comprehension of technical texts as adequate with guidance, while a smaller proportion consider it good. Notably, no respondents report excellent independent comprehension, suggesting that technical texts continue to pose significant cognitive and linguistic challenges.

When asked to identify specific student difficulties, respondents converge strongly on terminological accuracy and consistency, which emerges as the most frequently reported challenge. This is followed by difficulties related to cultural and contextual adaptation, linguistic and syntactic complexity, subject-matter knowledge, quality-assurance and revision skills and technology tool proficiency. Challenges related to syntax, grammar or time management and efficiency are also reported, though less prominently than terminology- and knowledge-related issues.

Figure 1.
Most frequently reported student difficulties in technical translation (n=23)



These difficulties map closely onto the defining features of technical genres, where meaning is tightly coupled with procedural logic, parameter stability and user safety. The findings therefore reinforce the argument that technical translation training must prioritise terminology governance, revision workflows and domain research skills, rather than focusing predominantly on sentence-level equivalence.

4.4. Curriculum Alignment and Institutional Constraints

Perceptions of curriculum alignment with industry demands are mixed but informative. Most respondents rate alignment as good with minor adjustments needed or moderate with significant gaps, while only a small number describe curricula as fully aligned or in need of substantial overhaul. This distribution suggests a general awareness of professional requirements, coupled with uncertainty regarding the sufficiency of existing programme structures.

Collaboration with the translation industry is reported to occur periodically, most often through guest lectures, workshops or internships, but rarely as sustained, curriculum-embedded partnerships. Respondents identify several obstacles to closer collaboration, including time constraints, limited institutional support and difficulties in securing long-term industry engagement.

Taken together, these findings indicate that pedagogical intent and conceptual awareness are not the primary limiting factors in technical translation education. Instead, challenges arise from institutional conditions, resource allocation and the complexity of integrating rapidly evolving technologies into stable curricular frameworks.

Overall, the results depict a pedagogical landscape that is conceptually aligned with contemporary views of technical translation as a genre-anchored, technology-mediated practice, yet constrained in its full implementation by assessment traditions, infrastructural limitations and uneven access to professional workflows. These tensions provide the basis for

the discussion in the next section, where the findings are interpreted through competence frameworks and translated into scenario-level recommendations for course and programme design.

5. Discussion

The findings of this study reveal a technical translation pedagogy that is broadly aligned with contemporary theoretical models yet characterised by structural tensions that shape how these models are operationalised in practice. When interpreted through the genre-based, competence-oriented and technology-aware framework outlined in Sections 1 and 2, the results help clarify not only *what* lecturers are currently doing, but *why* certain pedagogical configurations remain partial or uneven.

A first major insight concerns the relationship between genre awareness and pedagogical practice. The widespread use of project-based learning, translation workshops and case-study approaches indicates that technical translation is no longer treated as a purely text-centred activity, but rather as a situated practice embedded in professional scenarios. This tendency is consistent with the genre-based delimitation of technical translation as a form of action-oriented communication in which clarity, procedural logic and functional adequacy are central (Dejica, 2020, Dejica, in press–a). However, the limited and non-systematic use of authentic, real-world translation projects suggests that genre awareness is often enacted at an abstract or simulated level, rather than through sustained engagement with full documentation sets, tool-mediated workflows and client constraints. In this sense, pedagogy has incorporated the *principle* of genre-orientation, but not always its full operational consequences.

This partial implementation becomes particularly visible in assessment practices. Although project- and portfolio-based assessment is common, these formats coexist with traditional written examinations that are only loosely connected to genre-task performance. From a genre-anchored perspective, this coexistence points to an unresolved tension between institutional assessment traditions and the functional evaluation criteria required by technical genres. Earlier research has argued that technical translation quality is inseparable from terminological consistency, usability and revision processes (Dejica, in press–b); the present findings suggest that these dimensions are not yet consistently embedded as explicit assessment criteria, thus limiting the pedagogical impact of practice-oriented teaching methods.

A second key dimension illuminated by the results is the role of technology and AI as pedagogical variables. The strong presence of MT engines, terminology databases and CAT tools in teaching indicates that lecturers recognise technology as an intrinsic component of technical translation competence. More importantly, lecturers' predominantly cautious yet engaged stance toward AI aligns closely with recent arguments that automation should be framed neither as a threat nor as a shortcut, but as a means for developing analytical judgement and revision competence (Dejica & Dejica-Carțiș, 2020; Dejica, in press–b). The fact that most respondents favour either critically framed AI integration or carefully limited use suggests a high degree of pedagogical reflexivity.

At the same time, the comparatively low uptake of QA tools, project-management applications and post-editing-specific workflows reveals an uneven representation of professional practice. Technical translation in industrial settings is increasingly governed by standardised QA profiles, automated checks and coordinated workflows across teams and languages. The reduced visibility of these tools in the classroom can therefore be interpreted not as a conceptual oversight, but as the effect of institutional constraints, notably licensing costs and limited infrastructural support. This finding corroborates earlier observations on the misalignment between academic environments and professional translation ecosystems,

particularly in contexts where material resources and institutional policies limit experimentation (Dejica, Pungă, Badea & Vilceanu, 2022).

A third area of discussion concerns student competence development. The difficulties identified by lecturers—terminological accuracy, contextual adaptation, subject-matter knowledge and revision skills—map directly onto the core demands of technical genres. Unlike literary or general pragmatic translation, technical translation places a premium on conceptual precision, stable reference and procedural coherence. The fact that students rarely achieve independent comprehension of technical texts without guidance suggests that current curricula may underestimate the cognitive load and domain-specific literacy required by technical genres. This observation reinforces arguments that technical translation training must foreground domain research strategies, terminology governance and revision workflows as central learning outcomes, rather than treating them as ancillary skills.

From a competence-based perspective, these results also highlight the continued relevance of the multidimensional translator model, which integrates linguistic, thematic, technological and professional dimensions (Dejica & Dejica-Carțiș, 2020). Students' recurring difficulties do not stem from language competence alone, but from the interaction between language, knowledge, tools and quality constraints. Consequently, effective pedagogy must design learning activities that deliberately combine these dimensions, for instance by embedding terminology management and QA checks within genre-specific translation tasks.

Finally, the findings on curriculum alignment and institutional conditions underscore the importance of viewing translation pedagogy as part of a broader organisational ecology. Lecturers' assessments of partial alignment with industry needs, coupled with episodic rather than systematic industry collaboration, suggest that pedagogical innovation cannot rely solely on individual initiative. As argued in earlier framework-driven research, curriculum development in technical translation requires coordinated action across programme design, institutional policy and external partnerships (Dejica, *in press*-b). Without stable access to professional tools, sustained collaboration with industry partners and regular curricular updating cycles, even theoretically informed pedagogy risks remaining fragmented.

Taken together, the discussion shows that the current state of technical translation teaching in Romania reflects a transitional phase. Conceptual clarity regarding genre, competence and technology has largely been achieved, and lecturers demonstrate a high degree of awareness and adaptability. What remains unresolved are the structural mechanisms that would enable these principles to be implemented consistently and at scale. By situating empirical findings within a coherent conceptual lineage, the present study confirms, extends and completes earlier research, while also preparing the ground for the scenario-level pedagogical recommendations outlined in the following section.

6. Pedagogical and Curricular Recommendations

The findings discussed in the previous sections point toward a set of pedagogical and curricular adjustments that are best formulated not as prescriptive checklists, but as structural orientations anchored in genre theory, competence frameworks and technology-mediated professional practice. These recommendations are intended to support the systematic alignment of technical translation programmes with the communicative, technological and institutional realities identified by lecturers.

At the pedagogical level, a primary recommendation concerns the systematic anchoring of teaching and assessment in genre-based translation tasks. While project-oriented instruction is already widely practised, its impact can be enhanced by organising courses around recurring communicative functions characteristic of technical documentation—such as procedural

description, warning and compliance, parameter specification and troubleshooting—rather than around isolated text excerpts. Embedding these genre tasks within extended documentation sets allows students to experience terminological propagation, cross-text consistency and revision cycles, which are central to technical translation quality (Dejica, 2020; Trosborg, 2000; Dejica, in press–a). Assessment criteria should be explicitly derived from these genre functions and should foreground usability, terminological coherence and revision accuracy alongside linguistic adequacy.

A closely related recommendation concerns the explicit integration of revision and quality-assurance practices into teaching. The prominence of revision-related difficulties reported by lecturers suggests that revision is still insufficiently conceptualised as a core competence. Technical translation courses should therefore incorporate staged workflows that include self-revision, peer revision and tool-assisted QA, using simplified but representative professional protocols. Such designs resonate with the competence-based view of translation as a coordinated, goal-driven activity (PACTE, 2003; Dejica & Dejica-Carțiș, 2020) and help students internalise responsibility for downstream communicative effects.

In relation to technology and AI, the results support a model of guided, reflective integration rather than uncritical adoption or avoidance. Lecturers' cautious engagement with AI aligns with recent arguments that AI-assisted translation environments can serve as powerful learning tools when embedded in analytically framed tasks, such as post-editing, output comparison and error typology analysis. Pedagogically, this implies designing learning activities in which AI and MT outputs are treated as *objects of evaluation* rather than as default solutions. Such activities can foster strategic competence, critical awareness and ethical judgement, reinforcing the human translator's role as guarantor of quality and accountability.

At the curricular level, the variability observed in curriculum–industry alignment highlights the need for programme-wide coherence and institutional support. Curriculum design should ensure that competence development is progressive and cumulative, with terminology management, tool literacy and genre awareness revisited across semesters rather than confined to single courses. Aligning learning outcomes with internationally recognised frameworks such as EMT can facilitate this coherence, while also supporting programme transparency and comparability. Equally important is the creation of conditions that enable lecturers to implement these designs, including access to licensed tools, opportunities for continuous professional development and flexible curricular structures capable of accommodating technological change.

Industry collaboration emerges as another strategic area for development. Rather than relying exclusively on episodic guest lectures or internships, programmes may benefit from modular forms of collaboration, such as co-designed project briefs, anonymised real-world documentation sets or joint evaluation rubrics. Such mechanisms can strengthen the ecological connection between academia and professional practice without compromising academic autonomy, and they align with the view of translation as a situated social practice involving multiple agents and responsibilities (Dejica & Dejica-Carțiș, 2020).

Taken together, these recommendations advocate a shift from isolated pedagogical innovations toward integrated curricular ecosystems in which genre knowledge, competence development and technology mediation mutually reinforce one another. In continuity with previous framework-driven research in technical and scientific translation (Dejica, 2020; Dejica, in press–a; Dejica, in press–b), the present study shows that Romanian technical translation education has largely adopted the underlying principles of this model. The challenge ahead lies in consolidating these principles institutionally, ensuring that they can be implemented consistently and sustainably across programmes.

7. Conclusion

This article has examined the current state of technical translation pedagogy in Romanian higher education through the lens of genre-based theory, competence frameworks and technology-mediated translation practice. By drawing on empirical evidence from a national survey of translation lecturers, the study has sought to complement and complete existing conceptual research by grounding it in classroom realities, institutional conditions and lecturers' professional judgement.

The findings indicate that technical translation teaching has undergone a substantial shift toward practice-oriented and technology-aware approaches. Project-based learning, workshops and interactive methods are now firmly embedded in instructional practice, and lecturers display a high degree of reflexivity in their engagement with digital tools and AI-assisted translation. Rather than framing AI as either a threat or a solution in itself, respondents predominantly approach it as a pedagogical resource that can support the development of analytical, revision and decision-making skills. This orientation confirms the relevance of earlier arguments advocating the explicit treatment of technology as a shaping variable in technical translation research and training (Dejica, *in press-b*; Dejica & Dejica-Cartiș, 2020).

At the same time, the study reveals structural tensions that limit the full realisation of these principles. Authentic genre-based workflows, systematic revision protocols and QA-centred assessment remain unevenly implemented, often constrained by institutional assessment traditions, limited access to licensed tools and fragmented industry collaboration. Student difficulties—particularly in terminology management, domain knowledge and revision—further underscore the need to treat technical translation competence as a multidimensional construct that integrates language, knowledge, technology and responsibility. From this perspective, the results reinforce the value of a genre-anchored and competence-driven pedagogical model, while also highlighting the importance of curricular coherence and institutional support.

By situating these empirical insights within a broader research trajectory on technical and scientific translation, the article demonstrates how conceptual delimitation, research-agenda setting and pedagogical implementation can be brought into productive dialogue. In this sense, the study does not merely describe current practices, but contributes to the consolidation of technical translation pedagogy as a research-informed and professionally grounded field within Translation Studies.

Several limitations of the study should be acknowledged. First, the dataset is limited in size and scope, reflecting the responses of 23 lecturers within a single national context. While the sample includes a range of institutions, academic ranks and professional backgrounds, the findings cannot be generalised without caution to other educational systems or cultural settings. Second, the study relies on self-reported data, which capture perceptions and declared practices rather than directly observed classroom behaviour or learning outcomes. Third, the focus on lecturers' perspectives means that student experiences and industry evaluations are not addressed directly, although they are indirectly reflected through reported difficulties and alignment assessments.

These limitations point to clear avenues for further research. Future studies could extend the present design through multi-stakeholder triangulation, combining lecturer surveys with student performance data, classroom observation, corpus-based analysis of student translations and interviews with industry partners. Comparative studies across national or institutional contexts would also help test the robustness and transferability of the pedagogical

orientations identified here. Such extensions would further strengthen the empirical foundation for genre-anchored, technology-aware technical translation training.

In conclusion, the present article confirms that Romanian technical translation education is situated at a moment of conceptual maturity but structural transition. Lecturers have largely internalised contemporary theoretical insights, yet their consistent implementation depends on curricular, institutional and infrastructural conditions. Addressing these conditions is essential if technical translation training is to fully respond to the evolving demands of professional practice and to sustain its development as a rigorous and socially relevant component of Translation Studies.

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Appendix A. Survey Instrument — Teaching technical translation in a digital world

Target group: University translation lecturers (Romania)

Mode: Google Forms

Estimated time: ~10 minutes

Geographic coverage: Alba Iulia; Cluj-Napoca; Constanța; Oradea; Timișoara

Participating universities: “1 Decembrie 1918” University of Alba Iulia; Babeș-Bolyai University;

Ovidius University of Constanța; Partium Christian University Oradea; Politehnica University

Timișoara; West University of Timișoara

Number of participants: 23

INTRODUCTION & CONSENT

This study aims to bridge the gap between academic training and professional practice in technical translation, contributing to doctoral research that formulates practical recommendations for curricula, teaching methods and program design. Participation is voluntary, responses are confidential and used only for research in compliance with GDPR. By proceeding, respondents confirmed informed consent. The instrument comprises 6 sections.

SECTION 1 — PROFESSIONAL AND DEMOGRAPHIC PROFILE

1. Which is your current academic position?
2. How long have you been teaching technical/specialized translation at the university level?
3. Do you have professional translation experience?
4. Current institutional affiliation. (Open-ended)
5. Educational background (degree, graduation year, university). (Open-ended)

SECTION 2 — PEDAGOGICAL APPROACHES AND TEACHING METHODS

- 2.1 Pedagogical approaches used (multiple choice)
- 2.2 Effectiveness of traditional methods
- 2.3 Frequency of interactive method use
- 2.4 Use of gamification
- 2.5 Use of authentic translation projects
- 2.6 Frequency of feedback
- 2.7 Assessment methods
- 2.8 Primary teaching challenges

SECTION 3 — TECHNOLOGY INTEGRATION AND DIGITAL TOOLS

- 3.1 Extent of technology integration
- 3.2 Digital tools used (multiple choice)
- 3.3 Student comfort with technology
- 3.4 Perception of AI in translation education
- 3.5 Approach to AI integration
- 3.6 Objectives when using AI
- 3.7 Ways of keeping teaching current with technological changes

SECTION 4 — STUDENT COMPETENCIES AND PROFESSIONAL DEVELOPMENT

- 4.1 Students' comprehension of technical texts
- 4.2 Challenges students encounter (multiple choice)
- 4.3 Student engagement with feedback
- 4.4 Skills developed in courses
- 4.5 Translation competencies developed (multiple choice)
- 4.6 Methods facilitating professional development
- 4.7 Obstacles to pursuing a career in technical translation
- 4.8 Usefulness of technical resources

4.9 Emerging trends students should know

4.10 Advice for students (Open-ended)

SECTION 5 — CURRICULUM DEVELOPMENT AND INSTITUTIONAL CHANGES

5.1 Alignment between curriculum and industry demands

5.2 Challenges in curriculum development

5.3 Frequency of curriculum updates

5.4 Effectiveness of technology integration

5.5 Barriers to integrating more technology

5.6 Collaboration with translation labour market

5.7 Obstacles to industry collaboration

5.8 Preparedness to teach technical translation

5.9 Beneficial professional development

5.10 Measures of program success

5.11 Curricular changes needed

5.12 Ways universities can prepare students (multiple choice)

5.13 Adequacy of university conditions

5.14 Improvements needed (Open-ended)

SECTION 6 — ADDITIONAL INSIGHTS (all open-ended)

6.1 Additional insights

6.2 Recommendations for improvement

6.3 Trends impacting translation education

6.4 Advice for lecturers updating curricula

6.5 Advice for students