Buletinul Ştiinţific al Universităţii Politehnica Timişoara
Seria Limbi moderne

Scientific Bulletin of the Politehnica University of Timişoara
Transactions on Modern Languages

Vol. 25, Special Issue: Language, Communication and Society / 2026

Beyond Linguistic Competence: Terminological, Digital, and Collaborative Challenges in Technical Translation Education

Cornelia Patricia GRIGORAȘ*
Daniel DEJICA**

Abstract: Technical translation is commonly associated with linguistic competence; however, contemporary professional practice increasingly requires translators to integrate terminological, technological, and collaborative skills. This study investigates the challenges encountered by translation students during an authentic technical translation project involving English–Romanian and German–Romanian translations of Bosch technical documentation. The research draws on focus group data collected from twenty-two undergraduate students and employs thematic analysis to identify recurring patterns in their experiences. The findings reveal three major areas of difficulty: terminological challenges related to specialized vocabulary and domain knowledge, digital challenges associated with limited use of translation technologies, and collaborative challenges concerning teamwork and workflow management. The study argues that successful technical translation depends on the interaction of these competence areas rather than on linguistic proficiency alone. The findings have important implications for translator training and support the development of more integrated, competence-based approaches to technical translation education.

Keywords: technical translation; translator training; translation competence; terminology management; digital competence; collaborative competence; focus group research.

1. Introduction

Technical translation occupies a central position within contemporary translation practice, accounting for a substantial proportion of professional translation activity worldwide. As a form of specialized translation (Dejica 2026), it plays a crucial role in the transfer of technical knowledge across languages and cultures, facilitating

* PhD candidate, Doctoral School of Humanities, West University of Timisoara, Romania, e-mail: patricia.grigoras@e-uvt.ro;
** Prof. PhD, Department of Communication and Foreign Languages, Politehnica University Timisoara, e-mail: daniel.dejica@upt.ro

BUPT

communication in domains such as engineering, information technology, manufacturing, medicine, and consumer industries. The increasing globalization of products, services, and technologies has further amplified the demand for technical translators capable of producing accurate, usable, and contextually appropriate translations of technical documentation. In this context, translator education faces the challenge of preparing students not only to understand specialized language, but also to operate effectively in increasingly complex and technology-mediated professional environments.

Recent developments in Translation Studies and translator training have highlighted the growing importance of competence-based approaches to curriculum design. Contemporary models of translation competence extend beyond linguistic proficiency to include technological, strategic, interpersonal, and professional dimensions. The EMT Competence Framework (2017), for example, emphasizes the integration of language and culture competence with technological, personal, and service provision competences, reflecting the realities of contemporary translation workflows. Similarly, recent studies conducted in the Romanian context have drawn attention to the need for translator training programmes to respond more effectively to technological change, market expectations, and emerging professional practices (Dejica-Cartiș 2012; Pașcalău and Dejica 2021).

Despite these developments, technical translation remains relatively under-researched within Romanian Translation Studies. Existing investigations have identified significant deficits regarding both the academic study of technical translation and the pedagogical approaches used to prepare future professionals (Grigoraș and Dejica 2025; Dejica and Grigoraș 2026). Previous research has shown that technical translation occupies a marginal position within Romanian translation scholarship despite its considerable professional relevance (Dejica, Pungă, Badea and Vîlceanu 2022), while empirical evidence concerning students' experiences, challenges, and preparedness remains limited. As a result, there is still insufficient understanding of how translation students engage with authentic technical translation tasks and which competences require further attention within translator education.

This gap is particularly important in the context of ongoing technological transformation. Contemporary technical translators are expected to manage specialized terminology, employ computer-assisted translation tools, interact with artificial intelligence systems, maintain document formatting and visual consistency, and collaborate within project-based translation environments. Consequently, successful performance depends on a combination of linguistic, technological, and interpersonal competences rather than on language proficiency alone. While competence models acknowledge these dimensions theoretically, there is limited empirical evidence regarding the specific challenges encountered by students when facing authentic technical translation projects in educational contexts.

The present study addresses this gap by examining translation students' experiences during a collaborative technical translation project involving authentic technical documentation. Drawing on data collected through a focus group

BUPT

discussion, the article explores how students perceive technical translation tasks, the difficulties they encounter, and the competences they consider necessary for successful performance. Particular attention is given to three major areas that emerged from the analysis: terminological challenges, digital and technological challenges, and collaborative challenges. By investigating these dimensions, the article moves beyond traditional understandings of translation competence centred primarily on linguistic ability and seeks to provide a more comprehensive perspective on the competences required in contemporary technical translation practice.

Through thematic analysis of the discussion, the research aims to identify recurring patterns in student experiences, reveal areas where participants encounter significant difficulties, and examine the pedagogical implications of these findings for technical translation education. More specifically, the study pursues three objectives: (1) to identify the principal challenges encountered by students during an authentic technical translation project; (2) to examine the relationship between terminological, digital, and collaborative competences in technical translation performance; and (3) to formulate pedagogical recommendations for improving technical translation education in the Romanian context.

2. Literature Review and Conceptual Framework

Technical translation is commonly regarded as one of the most important forms of specialized translation (Dejica 2026), playing a crucial role in the dissemination of scientific and technological knowledge across linguistic and cultural boundaries. Unlike general translation, technical translation involves highly specialized subject matter, terminological precision, and adherence to domain-specific conventions. As Byrne (2006) argues, technical translation is not merely concerned with the transfer of information between languages, but with ensuring usability, clarity, and functional adequacy for target users. Similarly, recent work emphasizes that technical translation requires a combination of linguistic, procedural, technological, and domain-specific competences that extend beyond traditional conceptions of translation as a purely linguistic activity.

The evolution of translation technologies and the increasing complexity of professional workflows have contributed to a broader understanding of translation competence. Contemporary competence frameworks no longer describe translators primarily as bilingual experts, but as professionals operating within multilingual, technological, and collaborative environments. The European Master's in Translation (EMT) Competence Framework (2017) identifies several interconnected competence areas, including language and culture competence, technological competence, personal and interpersonal competence, and service provision competence. Such perspectives suggest that successful translation performance results from the interaction of multiple competences rather than from linguistic ability alone.

Within technical translation, terminology management represents one of the most frequently discussed competence areas. Technical texts depend heavily on specialized terminology, standardized phraseology, and conceptual precision (Dejica,

BUPT

2010; Dejica, 2011). Inaccurate terminology can compromise not only textual quality (House, 1997) but also functionality, safety, and user comprehension. Research has consistently identified terminological competence as a defining characteristic of professional technical translators, requiring the ability to understand technical concepts, identify reliable terminological resources, evaluate competing equivalents, and maintain consistency throughout the translation process (Byrne 2006; Dejica and Stoian 2016). Moreover, terminological work increasingly involves the use of specialized databases, terminology management systems, and multilingual resources, emphasizing the strategic dimension of this competence.

At the same time, digital and technological competence has become a central component of contemporary translation practice. The growing use of computer-assisted translation (CAT) tools, translation memories, terminology management systems, machine translation, artificial intelligence applications, and project management platforms has transformed professional workflows. Earlier studies have demonstrated that technological competence contributes not only to productivity, consistency, and quality assurance, but also to translators' ability to participate effectively in professional environments (Dejica-Cartiș 2012; Pașcalău and Dejica 2021). More recent research further highlights the need to prepare students for technology-mediated workflows in which human expertise and digital tools interact continuously throughout the translation process. Consequently, technological competence is now widely regarded as an indispensable component of translator education rather than an optional complement to linguistic training.

A third dimension that has received increasing attention concerns collaborative competence. While translators have traditionally been portrayed as individual language professionals, contemporary translation projects are frequently organized around teams, workflows, and distributed responsibilities. Large-scale technical translation projects often require the participation of project managers, translators, terminologists, revisers, subject-matter experts, and quality assurance specialists. As a result, successful translation depends not only on individual expertise, but also on communication, coordination, negotiation, and teamwork. Within competence-based approaches to translator training, collaborative competence is typically associated with interpersonal communication, project management awareness, conflict resolution, responsibility sharing, and the ability to contribute effectively to collective translation tasks. The growing professional relevance of these skills has led scholars to advocate a stronger integration of collaborative learning approaches into translator education.

Recent research conducted in the Romanian context has reinforced the importance of adopting more comprehensive competence models in technical translation education. Studies examining technical translation pedagogy, localization (Mali and Dejica 2025; Mali and Dejica 2026), post-editing and technology integration (Kovacs and Dejica 2025; Kovacs and Dejica 2026) have repeatedly emphasized the need to align educational practices with evolving professional expectations. These investigations reveal a recurring concern regarding the gap

BUPT

between university training and workplace realities, particularly in relation to technology use, workflow management, and competence development. While theoretical frameworks acknowledge the multidimensional nature of translator competence, empirical evidence concerning how students experience these challenges during authentic technical translation projects remains relatively limited.

Against this background, the present study adopts a competence-oriented perspective and examines technical translation through the lens of three interconnected dimensions: terminological competence, digital competence, and collaborative competence. Rather than treating these dimensions as separate categories, the study assumes that they interact dynamically during technical translation tasks. The focus group findings presented below provide empirical insight into how these competence areas emerge in students' experiences during an authentic technical translation project and how they collectively influence translation performance. In doing so, the article contributes to a more nuanced understanding of the challenges involved in preparing future technical translators for contemporary professional practice.

3. Methodology

3.1. Research Design

The present study employed a qualitative research design based on a focus group discussion. Qualitative approaches are particularly suitable for exploring participants' perceptions, experiences, attitudes, and interpretations in situations where the aim is to generate an in-depth understanding of a phenomenon rather than to test predetermined hypotheses (Creswell and Poth 2018; Flick 2022). Given the exploratory nature of the research and its interest in students' experiences during an authentic technical translation project, the focus group method (Kamberelis and Dimitriadis 2013; Krueger and Casey 2015) was considered appropriate for capturing collective reflections, identifying shared challenges, and revealing recurring patterns in participants' perceptions.

The study was conducted following the completion of a collaborative technical translation project involving authentic technical documentation provided by Bosch. The project created a realistic learning environment in which students were required to apply linguistic, terminological, technological, and collaborative skills while working under conditions that approximated professional practice. The subsequent focus group aimed to encourage participants to reflect critically on their experiences and identify the main challenges encountered throughout the translation process.

By adopting a qualitative exploratory design, the study sought to address the following research objectives: (1) to identify the principal challenges experienced by students during an authentic technical translation project; (2) to examine how terminological, digital, and collaborative competences influenced their work; and (3) to derive pedagogical implications for technical translation education.

BUPT

3.2. Participants and Educational Context

The participants were twenty-two undergraduate students enrolled in the Translation and Interpreting programme of the Faculty of Letters at Babeș-Bolyai University, Cluj-Napoca. The students participated voluntarily in a three-week collaborative technical translation project carried out as part of their academic training. The project involved the translation of authentic Bosch technical documentation from English and German into Romanian. The translated materials consisted of highly specialized texts containing technical terminology, domain-specific concepts, visual elements, and formatting requirements typical of industrial documentation.

The educational setting was designed to simulate aspects of professional translation practice. Students worked in teams and were encouraged to assume responsibility for terminology research, translation drafting, revision, consistency checking, and project coordination. Throughout the project, participants interacted with specialized resources, digital tools, parallel documentation, and collaborative workflows similar to those encountered in professional technical translation environments.

The choice of an authentic industrial translation project was intended to expose students to realistic challenges and to create opportunities for the development and observation of competences that might not emerge in more traditional classroom-based translation exercises.

3.3. Data Collection

Data were collected through a semi-structured focus group conducted at the end of the translation project. The discussion was moderated by the researchers and guided by a series of open-ended questions concerning students' experiences, perceived difficulties, coping strategies, teamwork practices, technology use, and overall perceptions of technical translation.

The focus group format encouraged participants to discuss their experiences collectively and to build upon one another's observations. This interactional dimension represented a significant advantage of the method, as it enabled the researchers to identify convergent opinions as well as differences in perspective among participants (Morgan 1997). The discussion generated rich qualitative data concerning the learning process and the competences perceived as essential for successful technical translation performance.

The questions were designed to address several broad themes, including participants' initial perceptions of technical translation, challenges associated with technical terminology, experiences with digital resources and technological tools, collaborative work dynamics, and suggestions for improving technical translation training. The discussion was recorded with participants' consent and subsequently transcribed for analysis.

BUPT

3.4. Data Analysis

The collected data were analysed using thematic analysis, a widely employed qualitative method for identifying, analysing, and reporting recurring patterns within textual data (Braun and Clarke 2006; Liebenberg, Ungar, and Ikeda 2020; Xu and Zammit 2020). Thematic analysis was selected because of its flexibility and its suitability for exploratory studies investigating participants' experiences and perceptions.

The analysis followed an inductive approach. First, the researchers familiarized themselves with the data through repeated readings of the transcript. Subsequently, meaningful units of text related to participants' experiences were identified and coded. The resulting codes were then examined for patterns and grouped into broader thematic categories. Through an iterative process of comparison and refinement, three dominant themes emerged from the dataset:

1. terminological challenges;
2. digital and technological challenges;
3. collaborative challenges.

These themes were selected because they appeared consistently throughout the discussion and were considered central to participants' experiences of technical translation. The final stage of analysis involved interpreting the relationships among the three themes and examining their implications for technical translation competence development.

To enhance the credibility of the findings, the researchers revisited the original transcripts during the coding and interpretation stages, ensuring that thematic categories remained grounded in participants' statements and accurately reflected the perspectives expressed during the discussion. Representative excerpts were selected to illustrate the identified themes and support the interpretation of the results presented in the following section.

4. Results and Discussion

The focus group discussion provided valuable insight into how students experienced an authentic technical translation project involving the translation of English–Romanian and German–Romanian technical documentation. Through thematic analysis, three major categories of challenges emerged consistently from the participants' accounts: terminological challenges, digital and technological challenges, and collaborative challenges. Rather than representing isolated difficulties, these themes appeared closely interconnected, collectively shaping the quality of the final translations and students' perceptions of technical translation practice. The findings reinforce contemporary competence-based perspectives that view translation as a multidimensional activity requiring the integration of linguistic, technological, and interpersonal competences.

BUPT

4.1 Terminological Challenges

Terminological competence emerged as the most frequently discussed challenge during the focus group. Students consistently reported difficulties in understanding and translating specialized technical terminology encountered in the Bosch manuals. Their lack of familiarity with the technical domains represented in the texts often prevented them from identifying accurate Romanian equivalents and from fully understanding the concepts behind specialized terms. As a consequence, many participants relied on literal translations or explanatory paraphrases instead of established technical terminology.

This finding confirms observations made in the technical translation literature, where specialized terminology is frequently identified as one of the principal sources of translation difficulty (Byrne 2006; Dejica and Stoian 2016). Technical translators are expected not only to transfer linguistic content, but also to understand complex conceptual structures and domain-specific knowledge. The discussions revealed that students often approached terminology as a lexical problem rather than a conceptual one, focusing on word-level equivalence instead of attempting to understand the technical processes described in the source text. Such an approach frequently resulted in translations that were formally correct yet conceptually inaccurate.

Participants also reported difficulties in identifying reliable terminological resources. Although students consulted dictionaries, online glossaries, and internet sources, they often struggled to determine which resources were trustworthy and appropriate for technical translation purposes. Consequently, inconsistent terminological choices frequently appeared across different sections of the translated manuals. These observations suggest that students require more systematic training in terminology management, corpus consultation, and terminological validation procedures, competences that are widely recognized as essential in contemporary technical translation practice.

Beyond terminology itself, students experienced difficulties in adapting technical discourse conventions to Romanian. Many translated segments contained unnatural phrasing, excessive source-language influence, and stylistic inconsistencies that reduced readability and usability. The findings therefore indicate that terminological competence should be understood as extending beyond the identification of specialized vocabulary to include mastery of technical writing conventions, genre awareness, and target-language standardization practices. This observation aligns with recent approaches that conceptualize technical translation as a communicative and functional activity rather than a purely linguistic transfer process (Byrne 2006; Dejica 2026).

4.2 Digital and Technological Challenges

A second major theme concerned students' limited digital and technological competences. Participants repeatedly acknowledged that they lacked familiarity with professional translation technologies and digital workflows. One of the most

BUPT

significant observations emerging from the focus group was that students completed the translation project entirely manually, without using CAT tools, translation memories, terminology management software, machine translation systems, or artificial intelligence applications.

The absence of technological support had a direct impact on translation quality and efficiency. Students reported spending considerable time performing repetitive tasks that could have been facilitated through translation technologies. Moreover, the lack of terminology management tools contributed to inconsistencies within and across translated documents. These findings support previous research emphasizing that technological competence has become a fundamental component of professional translation practice rather than a supplementary skill (Dejica-Cartiș 2012; Pașcalău and Dejica 2021).

A further area of difficulty concerned document formatting and visual elements. Students encountered problems in preserving layout structures, maintaining formatting consistency, and adapting images containing embedded text. Technical documentation often combines textual and visual information, requiring translators to work simultaneously with content, design, and technical constraints. Participants admitted that they lacked the technical knowledge necessary to modify visual elements effectively and to maintain professional document presentation standards.

The findings suggest that translation competence in contemporary technical environments must be reconceptualized as a technology-mediated competence. Students may possess satisfactory linguistic abilities while remaining insufficiently prepared for professional translation workflows. This observation echoes recent discussions regarding the emergence of hybrid translator profiles capable of combining language expertise with digital literacy and technological adaptability (EMT 2017; Grigoraș and Dejica 2025). The focus group demonstrates that the absence of technological competence can significantly limit students' ability to produce professional-quality translations even when linguistic comprehension is adequate.

From a pedagogical perspective, these findings strongly support the integration of CAT tools, machine translation systems, AI-assisted translation environments, terminology databases, and formatting management activities into technical translation curricula. The results also indicate the importance of exposing students to authentic technology-mediated translation tasks that resemble contemporary professional workflows.

4.3 Collaborative Challenges

The third thematic area emerging from the focus group concerned collaborative competence. Although students worked in teams and assumed distinct professional roles such as project manager, terminologist, translator, and checker, participants repeatedly identified collaboration as one of the most challenging aspects of the project.

BUPT

Students acknowledged difficulties in coordinating activities, sharing information, and maintaining consistent translation decisions across team members. Communication problems frequently resulted in divergent terminological choices, inconsistent stylistic solutions, and fragmented document sections. Instead of functioning as integrated translation teams, participants often approached the project as a collection of individual tasks completed independently and combined at a later stage.

These findings are particularly significant because they reveal a mismatch between educational experiences and professional realities. Technical translation projects in the language services industry are typically collaborative in nature, involving communication among translators, terminologists, revisers, project managers, and clients. Consequently, successful project completion depends heavily on coordination, negotiation, quality assurance procedures, and shared responsibility. The students' difficulties therefore suggest that collaborative competence remains insufficiently developed in many educational settings.

The discussions also highlighted limited awareness of project management processes. Participants reported uncertainty regarding workflow organization, task allocation, quality control procedures, and decision-making mechanisms. As a result, translation quality suffered from inconsistencies that might otherwise have been avoided through systematic collaboration and coordinated revision practices. Similar observations have been reported in recent studies emphasizing the growing importance of interpersonal and organizational competences within translator education.

The project nevertheless provided students with valuable insight into the realities of collaborative translation. Many participants acknowledged that the experience increased their awareness of professional workflows and the importance of teamwork within technical translation environments. The findings therefore suggest that collaborative projects can function not only as assessment activities but also as powerful pedagogical tools that help students develop competences rarely acquired through individual translation assignments.

4.4 Beyond Linguistic Competence: Towards an Integrated Competence Perspective

Although the three challenge areas were identified separately through thematic analysis, the findings indicate a high degree of interdependence among them. Terminological problems were often exacerbated by limited technological competence, while collaborative shortcomings contributed to terminological inconsistency and quality assurance issues. Similarly, the absence of CAT tools and shared terminological resources increased the impact of communication difficulties within teams.

The focus group therefore supports a broader understanding of technical translation competence as a multidimensional construct integrating terminological, digital, and collaborative dimensions. Linguistic competence remains essential, but it

BUPT

does not appear sufficient on its own to ensure successful performance in contemporary technical translation environments. Students who possess strong language skills may nevertheless encounter significant difficulties when confronted with specialized terminology, technology-mediated workflows, or collaborative project structures.

These findings align with recent competence-based approaches to translator education and reinforce the need for curricula that reflect contemporary professional realities. Technical translation training should move beyond traditional language-centred models and embrace more holistic pedagogical frameworks that integrate terminology management, technological literacy, teamwork, and project-based learning. Such an approach would better prepare future translators for professional environments characterized by specialization, technological mediation, and collaborative production processes.

5. Implications for Technical Translation Education

The findings presented in the previous section have significant implications for the design and delivery of technical translation education. Although the focus group participants demonstrated the linguistic abilities typically expected from undergraduate translation students, their experiences revealed substantial difficulties related to terminology management, technology use, and collaborative work. These findings suggest that technical translation competence should be approached as a multidimensional construct that extends beyond language proficiency and requires the systematic development of complementary professional competences.

One of the most immediate pedagogical implications concerns the need to strengthen terminological competence within technical translation curricula. The difficulties encountered by students indicate that terminology management cannot be treated as a supplementary component of translation training, but should instead occupy a central position within technical translation courses. Students must learn not only how to identify appropriate equivalents, but also how to understand specialized concepts, evaluate terminological sources, create domain-specific glossaries, and maintain consistency across larger translation projects. The findings suggest that greater emphasis should be placed on terminology research methodologies, corpus-based approaches, and the use of professional terminology resources such as multilingual databases and specialized repositories. Such activities would help students move beyond literal translation strategies and develop the conceptual understanding required for professional technical translation.

A second implication relates to the integration of digital and technological competences into translator training. The focus group revealed that students completed the project entirely without the assistance of CAT tools, terminology management systems, machine translation platforms, or artificial intelligence applications. While this approach enabled them to concentrate on linguistic aspects, it also exposed significant deficiencies in technological preparedness. Considering the increasing technological mediation of professional translation workflows, this gap

BUPT

represents a substantial educational challenge. Previous studies have similarly emphasized that contemporary translators operate within digital ecosystems where technological literacy is indispensable for productivity, consistency, and quality assurance. Consequently, translation programmes should provide systematic opportunities for students to engage with CAT tools, translation memories, machine translation systems, terminology management software, quality assurance applications, and AI-assisted translation environments.

Importantly, the integration of technology should not be limited to tool familiarization. Students must also develop critical technological awareness, including the ability to evaluate automated output, identify machine-generated errors, assess reliability, and determine appropriate levels of human intervention. As recent developments in machine translation and artificial intelligence continue to reshape translation practice, educational programmes must prepare students to function effectively within hybrid human-machine workflows rather than viewing technological tools as external additions to the translation process.

The findings also highlight the pedagogical importance of collaborative competence. Students repeatedly identified communication, coordination, and workflow management as major challenges during the project. This observation suggests that translator education should place greater emphasis on collaborative learning environments that replicate professional translation practices. While individual translation assignments remain valuable for developing linguistic skills, they do not adequately prepare students for the realities of project-based translation work, where communication and teamwork play a fundamental role. Technical translation courses could therefore benefit from incorporating collaborative projects, role-based simulations, peer-review activities, and workflow-oriented tasks that expose students to the interpersonal and organizational dimensions of translation.

Particular attention should also be given to project management competences. During the focus group discussion, students frequently referred to difficulties concerning task allocation, coordination, revision procedures, and quality control. These challenges mirror many of the activities performed within professional translation environments, where project managers, revisers, terminologists, and translators collaborate to produce consistent and high-quality translations. Integrating basic project management principles into technical translation education would therefore contribute to a more realistic understanding of professional translation workflows and help students develop organizational competences alongside linguistic expertise.

More broadly, the results support a competence-based approach to curriculum design in technical translation. The findings indicate that effective technical translation requires the integration of three interdependent competence areas: terminological competence, digital competence, and collaborative competence. Rather than developing these dimensions separately, educational programmes should seek to create learning environments that enable students to mobilize them simultaneously through authentic translation tasks. Project-based learning, situated

BUPT

learning, and collaborative pedagogies appear particularly suitable for this purpose because they allow students to engage with realistic professional scenarios while developing multiple competences in parallel.

Based on the findings, a pedagogical model for technical translation education can be conceptualized around three mutually reinforcing competence domains. Terminological competence encompasses domain knowledge, terminology management, information mining, and technical writing skills. Digital competence includes CAT tool proficiency, AI literacy, machine translation evaluation, document formatting, and workflow technologies. Collaborative competence involves teamwork, communication, project management, coordination, negotiation, and quality assurance practices. Together, these dimensions contribute to a more comprehensive understanding of technical translation competence, one that reflects the realities of contemporary professional practice rather than traditional language-centred approaches. This conceptualization is consistent with recent competence-oriented frameworks in translator education and with current discussions regarding the transformation of translation professions in technology-rich environments.

Finally, the findings have particular relevance for the Romanian context, where previous studies have identified a need for stronger alignment between translator education and professional practice. The focus group demonstrates that authentic technical translation projects can serve as highly effective pedagogical instruments for revealing competence gaps and supporting professional development. By engaging students in realistic translation situations and exposing them to the interconnected demands of terminology management, technology use, and collaboration, such projects provide opportunities for experiential learning that cannot be fully replicated through traditional classroom activities. Consequently, future curriculum development efforts should prioritize authentic, technology-mediated, and collaborative translation experiences capable of preparing students for the increasingly complex demands of contemporary technical translation practice.

6. Conclusion

This study explored the challenges encountered by translation students during an authentic technical translation project involving English-Romanian and German-Romanian technical documentation. Drawing on focus group data, the research examined how students experienced technical translation tasks and identified the competences they considered essential for successful performance. The findings demonstrate that technical translation competence extends beyond linguistic proficiency and depends on the interaction of terminological, digital, and collaborative competences. These dimensions emerged as closely interconnected and collectively influenced students' ability to complete translation tasks effectively.

The study contributes to ongoing discussions on translator education by providing empirical evidence from the Romanian context and by supporting a competence-based understanding of technical translation. The findings suggest that technical translation curricula should integrate terminology management, technology-

BUPT

enhanced translation practices, and collaborative project work in order to better reflect contemporary professional realities.

The research is limited by its focus on a single student cohort and by its reliance on self-reported experiences. Future studies may combine qualitative and quantitative approaches, analyse translation products directly, or investigate the impact of CAT tools and AI-assisted workflows on competence development. Such research could further enhance our understanding of translator training in increasingly technology-mediated environments.

References

Braun, Virginia, and Victoria Clarke. 2006. "Using Thematic Analysis in Psychology." *Qualitative Research in Psychology* 3 (2): 77–101.

Byrne, Jody. 2006. *Technical Translation: Usability Strategies for Translating Technical Documentation*. Dordrecht: Springer.

Creswell, John W., and Cheryl N. Poth. 2018. *Qualitative Inquiry and Research Design: Choosing among Five Approaches*. 4th ed. Thousand Oaks, CA: Sage.

Dejica, Daniel. 2010. "Approaching the Information Universe for Translation Purposes: The Atomistic Perspective." *Romanian Journal of English Studies* 7: 252–64.

Dejica, Daniel. 2011. "Identifying and Analysing Professional Genres' Peculiarities for Translation Purposes: A Methodological Approach." *Romanian Journal of English Studies* 8: 155–66.

Dejica, Daniel. 2026. "Technical and Scientific Translation." In *International Encyclopedia of Language and Linguistics*, 3rd ed., edited by Hilary Nesi and Petar Milin. Amsterdam: Elsevier. https://doi.org/10.1016/B978-0-323-95504-1.01407-1.

Dejica, Daniel, and Patricia Grigoraș. 2026. "Technical Translation Pedagogy in Romanian Universities: Survey Evidence on Competence Development and Technology Use." *Swedish Journal of Romanian Studies* 9 (2): 190–205. https://doi.org/10.35824/sjrs.v9i2.28777.

Dejica, Daniel, and Claudia Stoian. 2016. "Properties and Qualities of Technical Translations in Romanian." *Professional Communication and Translation Studies* 9: 131–38.

Dejica, Daniel, Loredana Pungă, Georgiana Badea, and Titela Vîlceanu. 2022. "Cercetarea traductologică doctorală din România." In *O istorie a traducerilor în limba română (secolul al XX-lea)*, vol. 2, edited by Muguraș Constantinescu, Daniel Dejica, and Titela Vîlceanu, 2008-2019. București: Editura Academiei Române.

Dejica-Cartiș, Daniel. 2012. "Developing the Electronic Tools for Translators Syllabus at Politehnica University of Timișoara." *Procedia – Social and Behavioral Sciences* 46: 3614–18.

EMT Expert Group. 2017. *European Master's in Translation Competence Framework 2017*. Brussels: European Commission.

Flick, Uwe. 2022. *An Introduction to Qualitative Research*. 7th ed. London: Sage.

Grigoraș, Patricia, and Daniel Dejica. 2025. "Bridging Knowledge and Practice: Pedagogical Strategies and Research Directions for Technical Translation in the Digital Age." *Studii de Știință și Cultură* 21 (3): 147–58.

BUPT

House, Juliane. 1997. *Translation Quality Assessment: A Model Revisited*. Tübingen: Gunter Narr Verlag.

Kamberelis, George, and Greg Dimitriadis. 2013. *Focus Groups: From Structured Interviews to Collective Conversations*. London: Routledge.

Kovacs, Zoltan, and Daniel Dejica. 2025. "From Standards to Hybrid Workflows: Automatic Post-Editing and Translation Quality Assessment for English–Romanian Medical Texts." *Professional Communication and Translation Studies* 18: 136–145.

Kovacs, Zoltan, and Daniel Dejica. 2026. "Machine Translation, Post-Editing, and Quality Assessment in English–Romanian Medical Translation: Insights from Professional Practice." *Scientific Bulletin of the Politehnica University of Timișoara: Transactions on Modern Languages* 25 (1): 69–83.

Krueger, Richard A., and Mary Anne Casey. 2015. *Focus Groups: A Practical Guide for Applied Research*. 5th ed. Thousand Oaks, CA: Sage.

Liebenberg, Linda, Michael Ungar, and Kathryn Ikeda. 2020. "Thematic Analysis in Qualitative Research." In *The SAGE Handbook of Qualitative Research Design*, edited by Uwe Flick. London: Sage 17 (2): 157-172

Mali, Izabella, and Daniel Dejica. 2025. "Localization in the Romanian Context: Addressing Research Deficits and Advancing Linguistic and Cultural Adaptation." *Analele Universității Ovidius din Constanța: Seria Filologie* 36 (1): 431–54.

Mali, Izabella, and Daniel Dejica. 2026. "Teaching Website Localization in the Romanian Context: An Empirical Study of Linguistic, Cultural, and Technological Competences." *Scientific Bulletin of the Politehnica University of Timișoara: Transactions on Modern Languages* 25 (1): 130–44.

Morgan, David L. 1997. *Focus Groups as Qualitative Research*. 2nd ed. Thousand Oaks, CA: Sage.

Pașcalău, Raul, and Daniel Dejica. 2021. "The Efficient Translation Flow, a Key to Successful Business." *Scientific Bulletin of the Politehnica University of Timișoara: Transactions on Modern Languages* 20 (1): 51–57.

Xu, Wen, and Katina Zammit. 2020. "Applying Thematic Analysis to Education: A Hybrid Approach to Interpreting Data in Practitioner Research." *International Journal of Qualitative Methods* 19: 1–9.

BUPT