

**Adapting Translator Education to Technological Advances:  
A study on Localization-focused Training**

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**Abstract**

The evolving landscape of global digitalization necessitates changes in educational standards and approaches, particularly in the professional education of translators, highlighting the importance of developing technological competence tailored to localization-based training. This study explores the pedagogical conditions required for enhancing future translators' technological proficiency, which is crucial in a world increasingly reliant on precise and culturally sensitive communication across borders. The methodology encompasses systemic-structural and interdisciplinary approaches, including dialectical, historical, legal comparative, and logical semantic methods. These approaches facilitate a comprehensive understanding of the changing demands in translator education necessitated by rapid technological advancements. Findings reveal the necessity for educational programs to adapt not only to the evolving classical professional knowledge but also to the accelerated pace of technological developments. The expansion of international communication underscores the significance of integrating advanced technologies in translation education, which in turn impacts all facets of international interaction, particularly international trade. The role of Ukraine's integration into the global digital community exemplifies these new realities, reflecting its enhanced international stature. The study's practical implications extend to educational policy, where findings could guide the enhancement of translator training programs to better equip professionals with the necessary skills for navigating the complexities of modern translation tasks. These adjustments are imperative for addressing both the qualitative and quantitative needs of the professional translation workforce, ensuring their readiness to meet contemporary global challenges.

**Keywords:** *pedagogical adaptation, editing, digitalization, educational standards, professional development, technological processes, localization.*

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## **Adapting Translator Education to Technological Advances: A study on Localization-focused Training**

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### **1. Introduction**

Today, every sector of the economy is becoming increasingly technologically advanced and internationally oriented. Significant circulating information flows encourage effective methods and tools for information processing, especially when it comes to the need for coordination between multilingual partners. L. Matviienko (2021) notes that it is often the irrelevance and low speed of translation that causes delays in the introduction of the latest technologies. The scientist describes this problem in detail but pays insufficient attention to the norms set out in European and international standards, and especially to the problem of bringing domestic norms in line with these standards. Thus, despite the high level of information competence of translators, there is an insufficient level of development of their theoretical and methodological support.

Given the qualities and knowledge a translator must have, there are different approaches to training professional translators. L. Holubnychy et al. (2022) consider the competency-based approach to training professional translators to be one of the most effective and innovative approaches. The researchers describe in detail the signs of a translator's competence. In this case, competence is understood as an integrated characteristic of personality traits or the result of a person's preparation for activities in certain areas (competence). However, they do not specifically address the technological competencies required for localization.

O. Lazorko et al. (2020) note at least five characteristics of any competence: motivational, cognitive, behavioural, value-semantic, and emotional-volitional. It is important to emphasise that initially the problem of competence was associated with the spheres of exclusively professional human activity. However, later it penetrated the educational sphere since any employee enters professional activity and social reality with a certain educational baggage that the modern labour market no longer accepts.

Today, the use of the latest technologies is a necessity for professionals in all fields of activity, including modern translators, given that written translation is performed mainly by automated computer tools (Kharchenko et al., 2017). T. Tkachuk and I. Paslavka (2021) highlight the importance of machine translation but do not delve into the specific challenges and requirements of localization. Given this, the professional training of future translators should also include more technological aspects, in particular, A. Olkhovska (2020) believes that it is necessary to introduce machine translation systems into the process of translator training. The problem of training future professional translators is especially acute in the localisation of markets and services, which involves adapting translations and language material to the specifics of a particular country or region, their language, mentality, and historical background. The authors do not mention this aspect of the problem in their works. Another important aspect of translators' professional activity is the translator's professional

competence (TPC), which essentially means the ability of a professional translator to skilfully apply the acquired skills and knowledge in practice. L. Chernovaty (2021) states the structure of TPC and concludes that it is formed by several necessary components, including linguistic and cultural, interpersonal, translation, technological and professional-oriented. However, this approach covers only the theoretical components of a translator's professional competence, without focusing on the practical application of the acquired knowledge.

While localisation is a crucial aspect of contemporary translation, current educational methodologies fail to equip translators with essential technology competencies. The literature underscores the significance of technological advancements and the necessity for translators' informational proficiency. Nonetheless, a considerable disparity exists in the real implementation of these skills, particularly regarding localisation. Research highlights a competency-based methodology yet fails to adequately incorporate technological proficiency with the requirements of localization. Moreover, studies highlight the significance of machine translation yet fail to consider the particular demands and obstacles of localisation. Consequently, it is essential to provide a pedagogical framework that amalgamates technological competencies with the practical demands of translation within localisation.

This study presents a systematic educational framework tailored for localisation, representing a substantial advancement in translator training. The suggested framework distinguishes itself from existing approaches by integrating technological capability with the actual demands of localization, rather than concentrating on theoretical features or broad technology skills. This allows future translators to proficiently tailor translations to certain cultural and linguistic situations, which is essential in globalization and technological progress. The study's innovation is in the development of a cohesive and application-focused methodology that addresses a current deficiency in the education of professional translators.

The aim of this study is to develop and implement a structured pedagogical framework focused on the formation of technological competence of future translators in the context of localisation.

## 2. Materials and Methods

The methodological basis of the study includes the methods and techniques of scientific knowledge, which were used to solve the tasks and ensure the relevance of the results. The dialectical method was used to retrieve information on the topic and outline the general characteristics of pedagogical conditions for the formation of future translators' technological competence in the context of their training based on localisation in Ukraine. The dialectical method was also used to provide a general description of the multidimensional nature and basic principles of pedagogy in general.

The analysis method was used to examine the scientific developments in the field of origin and understanding of the pedagogical conditions for the development of translators' technological competence in Ukraine, the essence of translators' professional competence and the necessary prerequisites for development in this area. The analysis method was also used to study the achievements of scientists developing the technological competence of future translators in Ukraine, as well as to identify gaps and imperfections in the administration of this process. The analysis method was also used to study the general

theoretical and methodological foundations of pedagogy in the context of training translators in localisation. The synthesis method was used to examine the prerequisites for the formation of translators' technological competence. Generalisation and abstraction methods, as well as synthesis and analysis methods, were used to study not only the main content but also the peculiarities of pedagogical conditions for the formation of not only the technological but also the professional competence of translators in Ukraine. In particular, the main aspects of the study were examined using the general scientific systemic-structural approach and the priority directions of changes in the pedagogical conditions for the development of translators' technological competence in Ukraine were described. It is the application of the systemic-structural approach that made it possible to identify the peculiarities, problematic aspects, and stages of the formation of translators' technological competence in Ukraine, in particular, in the context of total localisation of these processes.

The historical and legal comparative method was used to identify all the defining stages and processes that ensured the formation and further development of the foundations of technological competence of future translators in the context of their training based on localisation in Ukraine. These methods were used to comprehensively study the historical aspect of the issue under study, which is one of the most important in this area since it is the peculiarities of the historical formation of pedagogical conditions that directly affect their development and implementation in modern conditions, as well as their perception by society itself. An interdisciplinary approach to scientific research allowed us to study the peculiarities of pedagogical conditions for the formation of translators' technological competence in Ukraine.

The logical-semantic method was used to describe, systematise, and generalise the terminology of the subject matter, including the definitions of the concepts of "localisation", "professional competence of translators", "automated translation technology", and "post-editing". The applied methodological framework was used to study the subject of the study and formulate the basic principles of pedagogical conditions for the formation of translators' technological competence in Ukraine.

To validate the findings of this study, a small-scale experiment was conducted to compare the quality of translations produced by professional translators and machine translation systems. The experiment aimed to assess the effectiveness of machine translation tools and the necessity of post-editing by professional translators. Three types of texts were selected for translation: a technical manual, a literary excerpt, and a marketing brochure. Each text was approximately 500 words long. Two widely used machine translation systems, Google Translate and DeepL, were employed for the experiment.

Additionally, three professional translators with at least five years of experience were involved in the study. The translations were evaluated based on several criteria: accuracy, fluency, cultural adaptation, and post-editing effort. Accuracy measured how well the meaning of the source text was conveyed. Fluency assesses the naturalness and readability of the translated text. Cultural adaptation evaluated the degree to which the translation was adapted to the cultural context of the target audience. Post-editing effort determined the amount of work required to bring the machine-translated text to a publishable quality.

### 3. Results

The translation market in general and translation technologies in particular are currently undergoing constant change. This process, in turn, is driving the adaptation and implementation of many changes in the educational process that trains future translators. Currently, there is a need for constant rapid translations and their adaptation to the specifics of particular countries, languages, and mentality, which is the process of localisation. However, there is a significant difference between the meanings of the concepts of translation and localisation. Translation is essential in converting text or content from one language into another, preserving its meaning, context, and intent. This involves a careful interpretation of the source language and the accurate expression of that meaning in the target language. Translators can work in a variety of fields, including literature, business, law, medicine, technology, and more. They may specialise in certain languages or subject areas to provide accurate and contextually relevant translations. Localisation, on the other hand, is the process of adapting a product or content to the requirements and understanding of a specific target audience or market in another region or country. This can apply to various forms of content, including software, websites, video games, and marketing materials. Thus, it is clear that localisation is a broader process that goes beyond translation, although it includes translation as one of its main components, it also includes adjustments related to cultural sensitivity, date and time formats, units of measurement, currency, legal compliance, and user experience. While the primary goal of translation is to break down language barriers and provide speakers of different languages with access to information or content in their native language, and it focuses on linguistic accuracy and preserving the integrity of the source text, the primary goal of localisation is to create a coherent and culturally relevant user experience for a specific audience. Localised translation aims beyond language and adapts content or products to local culture, customs, and preferences. However, despite some obvious differences between the translation and localisation processes, it is often difficult to make a clear distinction. To effectively separate language localisation from the translation process, it is worth noting that localisation has three distinctive features, as described by S. Abendroth (2023):

- the object of localisation is a text that performs the function of persuasion;
- the source text and the localised text are characterised by the lack of semantic equivalence;
- in the process of localisation, the translator should pay special attention to adapting cultural and local contexts, as well as using words and meanings that may be relevant to the recipients.

In these circumstances, translation has become a crucial component of localization, with an increasing use of special automated tools and programs (Doherty, 2016). Given that language service providers are increasingly turning to the use of automated translation systems and localisation tools, there is a need to introduce the study of such tools into the training programs for professional translators. A professional translator describes localisation in the context of translation as a set of actions aimed at adapting the source text to the perceptions of a customer from another country, taking into account its cultural characteristics (Sandrini, 2008). Professional translators update their professional training using a variety of tools based on localization (Chyzhykova, 2024). Given the ever-increasing international exchange of

people, cultures, goods, services, and ideas, the global translation market is growing along with it (Dithurbide, 2022), which in turn is the result of the internationalisation of the economy. In recent decades, the demand for and consumption of professional translation services has been steadily increasing (Burns, 2020). That is why modern translators are increasingly using the latest information technologies to interact with customers.

In the era of globalisation, learning foreign languages is becoming increasingly necessary, especially in the training of future specialists: linguists, teachers of foreign and native languages, philologists, and translators (Rudenko et al., 2018). The successful professional activity of these specialists directly depends on the development of their foreign language communicative competence. The problem of developing these competencies includes the acquisition of grammatical competence (Macedo et al., 2021). Recently, the advantages and disadvantages of learning grammar in the context of foreign languages have been frequently discussed. However, most researchers in applied linguistics consider the functional use of grammatical foundations in texts to be a prerequisite for language learning (Almarshedi, 2022). Various aspects of developing translators' foreign language competence have always been the subject of research. In addition, the issue of developing the grammatical competence of translators and interpreters needs to be studied in detail (Holovatska, 2022). The concept of grammatical competence should be understood as knowledge of the grammatical rules of the language. Considering the general competence of a translator as the ability to interpret statements that comply with certain grammatical rules and meanings, the grammatical competence of a translator is based on the ability to use the grammatical means of the language. Since translation theory as a separate scientific field has emerged relatively recently, the need to modernise the pedagogical professional support of future translators to use innovative technologies designed to automate part of the translation process, as well as to use automatic computer translation tools and modern digital technologies, has become more urgent.

The main goal of professional training for future translators is to acquire professional competencies for many professional activities (Albir et al., 2018). In particular, such competencies of professional translators include not only an understanding of the source text and the ability to create a text in the source language but also the use of automated technologies considering the peculiarities of the source text. In this context, a professional translator needs to be aware of the socio-cultural aspects of a particular country and the situation in general. A. Shiba (2013) examines in detail the criteria and indicators for determining the level of development of the components of future translators' professional competence, as she considers them to be the basis for the successful training of future specialists (Table 1).

**Table 1.** Criteria and indicators for determining the level of development of the components of future translators' professional competence

<b>Components of future translators' professional competence</b>	<b>Indicators and criteria for the formation of relevant components</b>
Professional and educational	Acquiring general knowledge of translation as a type of professional activity;



	Mastering effective ways to solve problems that arise in the translation process; Ability to recognise and correct mistakes in translation.
Personal and motivational	Correlation of three groups of motives of professional activity – internal, external positive and external negative in the general complex of professional motivation.
Social-communicative	Ability to choose the optimal style of professional communication following the personal characteristics of the participants in the communication process and situational factors that affect its course

However, given all of the above, the realities of the translation services market are constantly changing, and future translators need to learn how to work in such conditions. From this perspective, the challenge lies in equipping future translators not only with academic hard skills, but also with a comprehensive set of soft skills that will enable them to adapt to the dynamic nature of translation situations (Erath, 2023). The soft skills of professional translators should include not only communication skills but also teamwork, critical thinking, leadership, interpersonal communication, cultural awareness, and flexibility (Martínez-Ávila et al., 2023; Symonenko et al., 2019). Today, the use of high technologies is being implemented in almost every sphere of human life and activity, so this is reflected in the way the concept of interpreter training is presented in each area of such training (Palko et al., 2023). Machine translation, defined as the automated software that translates the source text into the target language without human intervention, holds a significant position among automated translation technologies (O'Hare, 2023). The advantages that automatic translation systems provide to their users cover many aspects of translators' professional activities, including optimized speed, the ability to translate large texts quickly, and a relatively low cost compared to human translation, which is of great importance, especially when dealing with large volumes of materials. Automated translation systems also ensure anonymity by preventing contact between the text and the human translator. Machine translation systems are capable of translating texts of any complexity, any genre, and any subject matter.

Despite the high efficiency and widespread use of automatic translation systems, they also have several drawbacks, which developers of such programs are constantly working to correct. Significant drawbacks of automatic translation systems include not only the quality of machine translation (often lower than the quality of translation performed by a professional translator) but also the degree of consistency of the translation with the original text (Bakrim, 2022). Difficulties often arise when translating, in particular, language pairs, specific topics or genres of text. Another important problem with using automatic translation systems is the virtual impossibility of contextualised translation (Marczak, 2018), as such programs are not yet equipped with artificial intelligence functions and are unable to work with all aspects of translation, unlike a professional translator. It is worth noting that progress does not stand still, and developers do not rest on their laurels, constantly working to improve automated translation systems. In this context, it is also advisable to develop special courses for future translators that would focus on the training of professionals in developing post-editing skills. Post-editing is one of the most important stages of translation, and an integral part of machine translation, therefore, to ensure a high level of quality of the source text, the translator needs



not only to ensure grammatically and semantically correct translation but also to edit the text so that there are no omissions or additions of information, inappropriate or offensive content (Martins et al., 2014). Post-editing can only be done effectively by a professional translator, as only a specialist can bring the translation text as close as possible to the source.

Thus, given the significant need of translation services consumers for post-editing that brings the source and target texts as close as possible, future translators should acquire sufficient knowledge and quality of automated translation systems, as well as skills and abilities that would help them successfully apply such systems in their practical work, at the stage of their academic studies. Moreover, post-editing of texts produced by machine translation systems requires special pedagogical skills training at the training stage. This is necessary to ensure that future translators understand the specifics of translating texts in a particular context, as well as to emphasise the importance of post-editing for the most successful result.

Automated translation systems are undergoing increasing development and expansion of their application areas and have become a basic working tool for professional translators and translation agencies. One of its most effective components is machine translation, which is an automatic translation from a source language into a target language using computer programs or other machine translation tools without human intervention. It is worth noting that in the very early days of computing, developers had the idea of using computers for the automatic translation of texts and other linguistic and educational needs. Despite the creation of numerous automated machine translation programs, the challenge of tailoring these systems to the demands of the final translated texts remains unresolved (Sharabi, 2023). Even though modern translation automation tools have made significant progress in recent years, which allows them to be used effectively in practice, many difficulties arise when translating literary texts, in particular. This is primarily due to the ambiguity of the interpretation of language structures in literary texts, as opposed to texts of a scientific, technical, economic, or other nature. Today, all automatic translation systems can be divided into two types. The first is electronic dictionaries, and the second is automated translation software. Whereas electronic dictionaries (ABBYY Lingvo, Babylon, GoldenDict, StarDict) are used mainly for translating individual words and phrases, searching for synonyms, and sometimes for soundtracking translated words, automatic translation programs perform a full cycle of translation of the entire document – from entering the original text, translating it into another language, editing, formatting, and saving the final text. A machine translation system primarily translates a text's main idea and its structural elements by processing the text verbatim, and when multiple word meanings exist, it typically selects the most commonly used one. However, this translation quality typically fails to meet the semantic and terminological requirements of a particular field (Amelina and Tarasenko, 2016).

The experiment involved translating three distinct types of texts – a technical manual, a literary excerpt, and a marketing brochure – using both machine translation systems (Google Translate and DeepL) and professional translators. Following the initial machine translations, the professional translators post-edited these texts to enhance their quality. Subsequently, a panel of three independent evaluators, who were not involved in the translation process, assessed all translations based on predefined criteria: accuracy, fluency, cultural adaptation, and post-editing effort.

The machine translation systems, Google Translate and DeepL, demonstrated their capability to provide quick translations. However, these translations were relatively rough, with accuracy scores ranging from 65% to 70% and fluency scores between 60% and 65%. Notably, the machine translations fell significantly short in cultural adaptation, scoring around 50% to 55%. In contrast, the professional translators achieved high-quality translations, with accuracy scores around 95%, fluency at 90%, and cultural adaptation at 85%.

The post-editing process by professional translators substantially improved the quality of the machine-translated texts. Post-editing brought the accuracy up to approximately 85%, fluency to 80%, and cultural adaptation to 75%. Nevertheless, this enhancement required a moderate amount of effort from the professional translators, underscoring the necessity of their involvement in refining machine-generated translations.

These results highlight the critical role of integrating technological competencies with practical translation skills, especially within the context of localization. The findings emphasise the importance of professional translators being proficient in using machine translation tools and post-editing techniques to ensure high-quality translations. This experiment supports the study's focus on developing a cohesive and application-focused methodology to address current deficiencies in the education of professional translators.

Over the past decade, many machine translation programs appeared on the software market, and the requirements for them are much simpler than for human translation. Generally, the text translated with the help of an electronic translator should help the user understand the general gist of the original document. After that, the resulting text needs to be post-edited. For a comprehensive understanding of how automated translation programs work, it is important to consider the characteristics they should have. X. Chen et al. (2017) point out that the higher the score of each criterion, the better the program meets the needs of modern translators and users in general. Therefore, these criteria include not only the installation/uninstallation of such software but also the translation speed, the number of untranslated elements, the grammatical correctness of the translation, the ease of setting up the software, and the simplicity of the user interface. The main criterion for evaluating the final result is, of course, the quality of the translation. An automated translation program subjects a text to further processing by a professional translator. However, the person using such a program does not have to be a professional translator but should be able to understand the main idea of the text in general terms. Translation can also be automated for different purposes and users. Some translation tasks can be automated, for example, computers can initially help prepare resources for translation: build bilingual terminology lexicons; find similar texts or dialogues that have already been translated, build bilingual texts, provide terminology translation.

D. Voroniak (2022) describes modern machine translation tools, highlighting the complex nature of the translation process and the wide variety of programs available to meet user needs. All existing machine translation systems use symbolic methods (based on rules or procedures), sometimes supplemented by numerical (statistical) methods. The system also directly employs various models of transformation machines. To evaluate readability, it is not enough to measure the average reading speed but also to assess the global impression of the reader. The comprehensibility of a statement reflects the effort required to understand it and to correctly “paraphrase” it, regardless of whether it is a good or incorrect translation of the

original. The context must be identified, accurate terminology must be associated with it, and the system must provide the correct word in context.

The proposed pedagogical conditions for training future translators in the context of localization align well with industry demands and existing pedagogical practices (Holovatska, 2022). The emphasis on technological competence, including the use of machine translation tools and post-editing techniques, meets the industry's need for translators who can efficiently handle large volumes of text using automated tools. Additionally, the focus on soft skills such as critical thinking, communication, and cultural awareness ensures that translators can adapt to the diverse requirements of localization projects.

This comprehensive approach not only prepares translators for the technological aspects of the job but also equips them with the interpersonal and cultural competencies necessary for successful localization. Moreover, the integration of practical, application-focused methodologies, such as hands-on training with machine translation systems and post-editing exercises, aligns with current pedagogical practices that prioritize experiential learning. This approach ensures that future translators are well-prepared to meet the real-world challenges of the translation industry, where technological proficiency and cultural sensitivity are increasingly important. To visualize the modern localization-aware translation process that translators need to master, consider the following workflow diagram:

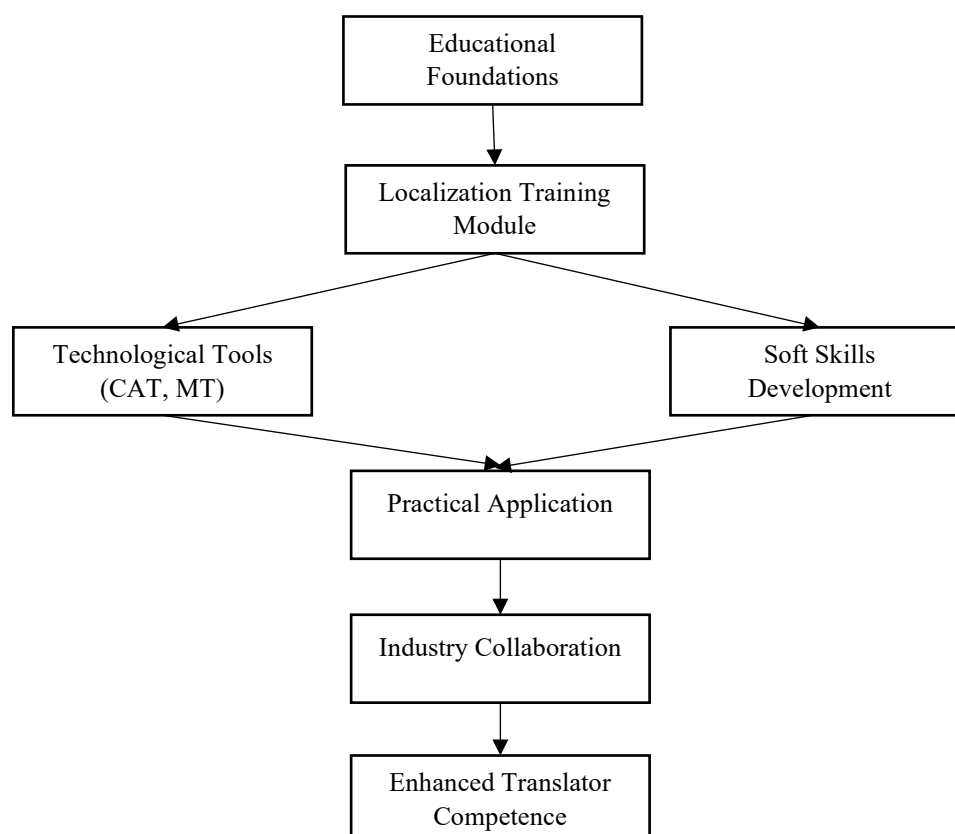


Figure 1: Integration of localization training into translator education

This workflow diagram illustrates the comprehensive process of modern translation and localization, from initial content analysis through to final delivery. It highlights several key stages:

- the preliminary phase of content analysis, incorporating both cultural and technical assessments;
- the integration of machine translation as a core tool in the process;
- the critical role of professional post-editing;
- multiple review stages ensuring quality across linguistic, cultural, and technical dimensions;
- a final quality assurance phase before delivering the localized product;

The highlighted nodes (Machine Translation and Post-Editing) represent the crucial intersection between technological tools and human expertise, demonstrating how modern translators must master both aspects to deliver high-quality localized content.

#### 4. Discussion

The problem of developing the technological competence of future translators, particularly in the context of their localization-based training, is multifaceted. In addition to technological competence, future translators must possess a sufficient level of important soft skills. French scholars J. Lamri and T. Lubart (2023) highlight, in particular, critical thinking and problem-solving skills, communication skills, and collaboration skills. These skills, in their opinion, will ensure the ability to offer effective solutions. The study yielded similar conclusions, emphasizing that the translation process encompasses not only the mechanical conversion of one language into another, but also the translator's personality and capacity to tailor the source text to the customer's needs and perspective.

In today's environment, the translation process is undergoing constant changes, especially under the influence of digitalisation (Rzhevskaya et al., 2023; Suranchiyeva et al., 2023). B. Thornhill-Miller et al. (2023) describe the consumers' demand for fast processing of large volumes of printed material. It's also important to note that this situation sparked interest in the introduction of machine translation, a process that involves professional translators at the post-editing stage rather than the initial translation. D. Robinson (2020), in turn, notes that this affects professional translators' perception of their competence and requires them to develop new skills. However, unlike the results of D. Robinson, the present study found that professional translation in each field of activity requires a greater set of skills and abilities. Any field requires the ability to work with texts and terminology specific to a particular industry, so future translators' training should take into account the fact that today's professional translators must utilize computer-assisted translation (CAT) tools (Kononchuk, 2024). Each modern CAT program certainly has its peculiarities, so future translators can choose the one they feel most comfortable with or the one their translation company provides for its employees (Nechyporenko et al., 2019; Bocheliuk et al., 2019). Some features of automated translation systems can not only save time but also improve the quality of translation.

J. Evans (2021) identifies a glossary and a translation database as the primary software tools, ensuring not only the translation's integrity but also the automatic substitution of repetitive

sentences. Meanwhile, D. Robinson (2020) underscores the Internet's rapid transformation into a textual source, despite its initial purpose as a platform for collaboration and communication. The results of this study partially contradict the findings of these authors, revealing a particularly noticeable unification of the Internet in the localization industry, where the translation of all digital content caters to the specific needs and perceptions of consumers. For instance, the majority of creators create computer games in English, tailoring them to the specific realities of their target audience and incorporating an English interface. C. Mangiron (2016) emphasizes that the entry of such a computer game, for example, into the European market involves not only its actual translation but also its adaptation to the realities of the destination region. It is also worth adding that localisation usually includes not only the translation of software, games, and system software but also the adaptation of the colour scheme of the software, game, or website to the usual ones of the users for whom the translation is created and in whose market it will be used.

F. Z. Zouali et al. (2023) believe that a professional translator should render the text more relevant to the people of a particular country or region. It's important to note that this has led to a growing need for professional translators to acquire new skills, particularly in the field of computer programming. This aspect of the subject matter is discussed by L. Ramírez-Polo and C. Vargas-Sierra (2023), although, in contrast to the results of their study, they found that to effectively translate computer games, mobile applications, programs, or websites, a professional translator must first identify and access the content to be translated, and without knowledge of basic programming, this task will be difficult and time-consuming.

A new methodology for teaching translators the necessary skills in the training process would encourage them to learn independently and think for themselves. M. Ehrensberger-Dow and G. Massey (2010) describe modernised professional training of future translators as a basis for solving several problems in the education and training of future professional translators in general. It is also important to consider that the pedagogical process covered not only declarative knowledge but also included the skills and awareness of future translators themselves, which the researchers do not mention.

S. Cheng (2022) describes this diverse set of skills and abilities as the basis for effective performance in translation practice. This study, however, found that social media as a phenomenon and its use as an online tool play an equally important role in the training of translators. Due to its extremely widespread use, social media is increasingly becoming the source text for translation into another language (Hryshchuk & Molodetska, 2017). As noted by V. D. Ihnatenko (2023), the use of social media extends beyond the translation process, enabling students to utilize it as a work environment and enhance their marketing skills. Updating the pedagogical training of future translators based on localization involves the use of not only automatic translation systems but also other digital resources (Spytska, 2024b).

This approach has influenced the way professional translators work. Many machine translation systems are now available at low cost and are relatively simple to learn on a basic level (Sloane et al., 2010; 2011). The translations produced by such systems are generally suitable for understanding the main idea of the text but often do not describe specific aspects of the problem. Since web surfing and information retrieval are currently the main uses of machine translation systems for comprehension, we cannot directly review such translations to obtain a high-quality translation.

At the research and teaching levels, scholars strive to produce higher-quality translations while allowing for more “spontaneous” speech in task-oriented situations. With this in mind, the practice of training translators in the CAT environment has led to a process of professionalisation of the curriculum, in which technology is key to translator training. Today, there are enough gaps in the curriculum that need to be filled with pedagogical tools, in particular, tools to bridge the gap between the skills that future translators acquire in their studies and those that the market needs (Sharov et al., 2021).

Educators should focus on integrating computer-assisted translation (CAT) tools into the curriculum to familiarize students with industry-standard software (Sosnytska et al., 2019; Kryshchanovych et al., 2021). Partnering with translation software companies to provide access to tools like SDL Trados, MemoQ, and MemSource, and offering workshops and hands-on training sessions, can be an effective strategy. Additionally, educators should emphasize the development of critical thinking, problem solving, communication, and collaboration skills through group projects, case studies, and role-playing exercises that simulate real-world translation scenarios. Encouraging self-learning and independent thinking by providing resources for self-study, such as online courses, webinars, and access to academic journals, can foster a conducive learning environment (Spytska, 2024a).

Incorporating localization training, including cultural adaptation and technical aspects, by collaborating with localization experts to develop course content and guest lectures and using real-world examples, such as localizing software, games, and websites, can enhance the curriculum. Utilizing social media platforms as a learning tool for language practice, cultural immersion, and marketing skill development, as well as encouraging students to create and manage multilingual social media accounts, can also be beneficial (Bazaluk et al., 2017).

Policymakers should allocate funds for educational institutions to acquire and maintain CAT tools and other digital resources (Bazaluk, 2019; Mamadova et al., 2019). Creating grants and subsidies for institutions to upgrade their technological infrastructure and provide access to the latest translation tools can support this initiative. Fostering partnerships between educational institutions and translation industry stakeholders by organising industry-academia conferences, internships, and collaborative research projects can bridge the gap between academic training and industry needs.

Establishing standardised curriculum guidelines that include technological competence and soft skills by working with educational boards and translation industry experts can ensure consistency and relevance in translation education. Supporting continuous professional development for educators and translators by providing funding for workshops, certifications, and advanced training programs can keep educators and professionals up-to-date with the latest trends and technologies (Bocheliuk et al., 2019).

Curriculum designers should create holistic translation programs that integrate technological competence, soft skills, and localization training. Developing interdisciplinary courses that combine language studies, cultural studies, technology, and business skills can provide a comprehensive educational experience. Including real-world projects and case studies in the curriculum by partnering with companies to provide students with real-world translation projects, such as localizing software, websites, and marketing materials, can enhance practical skills.



Emphasising the importance of cultural adaptation in translation by including modules on cultural sensitivity, regional differences, and the impact of cultural nuances on translation quality can prepare students for diverse translation scenarios. Utilising a variety of digital resources in the curriculum, such as online translation tools, language corpora, and digital libraries, can enhance the learning experience. Promoting a culture of lifelong learning among students by providing access to continuous learning resources, such as online courses, webinars, and professional networks, can support ongoing skill development.

## Conclusion

Training future translators based on localization is a multidisciplinary process that encompasses skills and knowledge across various disciplines. This is especially true in the context of global digitalization in all spheres of human life and activity. The training of future translators based on localisation is extremely relevant, especially the professional training of highly qualified personnel at the level of higher and secondary education institutions, which will help solve the most acute problem – the quantitative shortage of professional staff.

The translator is increasingly becoming not just a professional in this field but also a specialist with many skills aimed at deciphering the cultural characteristics of different categories of users through translation. The study examines and analyses the competence of a translator, according to which it is important to add relevant soft skills. It is the relevant soft skills that enable a translator to work and perform many organisational tasks related to translation activities.

In general, the competence models of modern translation concepts attempt to cover the overall translation process, and technology is only one component of this process. Today, this aspect is becoming increasingly important for teachers in the context of modern realities. Additional research is required to comprehend how the teaching and learning environment should be structured to address genuine professional needs.

The active development between different countries and the increasing importance of developing information communication between representatives of different countries make this research particularly relevant. The latest technologies are particularly valuable in areas designed to solve global problems, including translation technologies and translation education, which, in turn, affect all areas of international life without exception. In this regard, the need for special professional training for translators, whose content involves changes in their skills and abilities, is becoming more urgent.

Given the findings of the study, further research in the field of pedagogical conditions for the formation of technological competence of future translators in the context of their training based on localisation should focus, in particular, on adapting educational programs to the requirements of today's translation, increasing attention to the soft skills of professional translators, and creating separate courses for advanced training and adaptation of previously acquired knowledge by professional translators.

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