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TECHNOLOGICAL ENHANCEMENT OF PROFESSIONAL TRAINING OF FUTURE TRANSLATORS: FOCUS ON LOCALIZATION

Abstract. Future translators need to be prepared for present-day circumstances to provide a localized international translation product that users worldwide will engage with equal vigor. The article highlights the author's view on the technologization of professional training of future translators based on localization in the conditions of digitalization of higher linguistic education. To achieve the goal, various methods were used: a literature review (conducting a thorough review of the literature that includes current research, scientific articles, and methodologies on the technological enhancement of education); pedagogical practice analysis (identifying efficient digital technologies that demonstrate high efficiency and prevent educational losses, as well as analyzing successful practices of preparing aspiring translators for professional activities in general and localization in particular); and identification of effective digital technologies to improve education. In addition, a thorough comparison of digital technologies was conducted to assess their effectiveness in preparing future translators for localization. The study concluded that professional training should equip future translators with the skills to effectively use digital technologies in modern technological conditions, revolutionizing the training of translators through the digitization of translation education, with a special emphasis on localization. This approach improves educational progress by combining recursive and discursive paradigms, ensuring authenticity, promoting localization learning, and creating a transparent and flexible atmosphere in universities. The integration of digital technologies solves several important problems in education and guarantees its effectiveness: minimizing the time delay between exposure to new concepts and assessment of outcomes; the creation of a virtual and real foreign language environment that makes it possible to provide an individual learning trajectory focused on the abilities of students; improving control of knowledge, skills, and abilities; increasing the effectiveness of learning through interactivity, multimedia, and individualization.

Keywords: audiovisual products; digital technologies; translators; localization; training for localization, technologies of teaching.

1. INTRODUCTION

The broadening of language mediators' and translators' areas of specialization is a consequence of the global integration and internationalization observed in several aspects of life [1]. Certified translators play a crucial role in promoting social development through their involvement in several areas such as mass media, cross-cultural technical communication, software localization, adapting information to other languages and cultural communities, and directing it towards the intended recipient. Certified translators have expertise in scientific fields and possess a deep understanding of the demands and conditions of cross-cultural communication in the era of advanced digital technology and emerging mass media.

The advancement and application of information technologies, known as informatization, have a significant impact on individuals' social and personal aspects. This has resulted in the establishment of novel modes of contact among people in socio-cultural and professional domains [2]. Nowadays, a substantial portion of our daily existence has transitioned into a

digital form. Hence, global corporations employ diverse digital channels to broaden their sales markets and augment their target audience. To ensure the successful dissemination of the latest audiovisual product, it is imperative to have skilled, efficient, and effective localization. In contemporary circumstances, prospective translators must be prepared to develop a localized international translation product that will be extensively used by users from various countries worldwide.

This assumption is closely linked to the training of future translators for localization. According to M. Odacioglu [3], mandatory localization in the translation of commercially oriented marketing audiovisual materials involves conveying fundamental moral and ethical, social and interpersonal values, motivations for consumer or professional actions, symbolic and referential elements that reinforce values and worldviews, and specific genres of material presentation. In this context, the researcher points out that culture in the present day functions as a global perspective through which individuals interpret their surroundings. It influences how consumers classify, organize, and absorb new information and shapes their behavior and actions. In light of this trend in the development of the translation services market, the issue of preparing future translators for localization in terms of technologicalization of the educational process based on localization principles and the potential of digital technologies is being revisited.

The paper aims to emphasize the academic benefits of introducing advanced digital technologies for the professional training of future translators, with a focus on localization.

2. RESEARCH METHODS

Multiple methods were employed to accomplish the aim:

1. Conduct a comprehensive review of existing literature. Performing a comprehensive literature study entails examining up-to-date research, scientific papers, and approaches to the technology used in the educational process.

2. Examination of educational methods. It includes analyzing effective strategies for teaching aspiring translators in both general professional tasks and localization, focusing on developing efficient digital tools that minimize educational setbacks.

3. An extensive evaluation of the potential of digital technology in enhancing the readiness of future translators for localization.

3. RESULTS AND DISCUSSION

The rapid evolution of technology in translation and localization has transformed the educational landscape for aspiring translators. Recent studies have emphasized the relevance of using technology in translation curricula. Han and Krüger state that exposure to current translation technologies is critical for acquiring practical abilities. This incorporation equips students with the practical difficulties they will encounter in the localization business, as companies increasingly want technologically adept people ([4]; [5]). Several researchers emphasize the importance of teaching students in CAT technologies. According to O'Brien et al., experience with technologies like SDL Trados and MemoQ helps both translation output and adequacy [6]. Furthermore, cloud-based collaboration technologies such as Matecat and Memsource are becoming more popular in education programs [7]. E-learning systems have become popular in higher education as well. Therefore, Pym et al. observed that online modules provide flexibility in learning, allowing students to understand localization principles quickly. Micro-credentialing, in which students receive badges for completing certain modules, has also been demonstrated to boost motivation and give physical confirmation of abilities [8].

Emerging technologies, such as virtual reality (VR) and augmented reality (AR), are also finding uses in training for localization According to Kristo et al., VR can offer full immersion for practice, enabling students to experience the influence of cultural subtleties directly. This experience learning might help you better grasp the obstacles of localization in different markets [9].

A substantial impact on localization training is the use of AI technologies. Lian Lau et al. investigate the application of translation technology based on AI in translation teaching, shifting translator education to include post-editing abilities. This modification increases translation quality and qualifies students to collaborate successfully with AI technology [10].

According to some research, cloud-based solutions that enable collaborative learning settings improve peer learning and feedback mechanisms. Systems such as Google Workspace allow students to collaborate on translation assignments while imitating real-world localization team dynamics. This type of collaboration promotes communication and teamwork, both of which are necessary in the industry ([11]; [12]).

Localization is an intricate and multifaceted process that involves multiple stages. The study of localization started relatively recently. The isolation of localization into an autonomous field of inquiry was determined by the peculiarity of the source material to be translated. According to M. Jiménez-Crespo, research in localization can be seen as a subfield of translation studies that focuses on the intersection with emerging areas of research such as information management or international business strategies [13]. Localization, as defined by K. Dunne, is contingent upon the context and perspective of the individuals who establish this definition [14]. It is important to acknowledge that within the linguistic services market, which includes customers, service providers, developers, sales specialists, and project managers, there is no consensus on the definition of localization. This lack of agreement primarily stems from the different professional contexts in which the term is employed. However, despite the existence of a substantial body of literature dedicated to the study of localization ([15]; [14]; [16]; [13], etc.), along with guidelines and standards from prominent professional organizations (LISA, GALA), the term "localization" still requires elucidation and precise definition as a distinct sector within the translation services industry.

Therefore, we define localization as translating and adapting a product or service to a particular language, culture, and geographic market, taking into account two main aspects: *stylistic* (it is important to make sure the language tone you use is appropriate for each local culture) and *technical* (a need of making changes to things like date and time formats, alphabetization or the direction of reading to make them appropriate for the language to be localized into). So, localization is about making a whole product feel tailored to users everywhere. Considering the essence of the notion, professional training for future translators focused on localization should include a blend of theoretical knowledge and practical skills. This involves teaching localization strategies, tools (like CAT tools and TMS), and project management techniques. Courses should emphasize cultural sensitivity, terminology management, and quality assurance processes. Additionally, hands-on experience through internships or projects can help students delve into real-world applications, preparing them for the ultimate challenges in the localization industry.

In the last 50 years, there have been substantial shifts in the perception of translation as a subject of study and practical application. The initial phases of the evolution of translation studies were marked by a retrospective paradigm centered on the text, which emphasized the challenges of achieving equivalence between elements in the source language and the target language [17].

The prevalent translation of creative works during the development of translation studies, particularly domestic ones, explains the active use of this scientific paradigm [18]. Currently, we are witnessing a shift in the way we perceive translation. It is now seen as a form of

intercultural communication rather than just a means of transferring information between individual languages, topics, or cultures. This new perspective goes beyond simply combining these factors [19]. The mentioned scholarly articles draw the educational community's attention to the significance of providing technology training to future translators as a result of the digitization of the translation services market.

Localization, as a distinct component of the professional practice of upcoming translators, encompasses both spoken and written translation without any limitations. This viewpoint is particularly apparent when it comes to translating audiovisual works, which commonly employ the technique of localization. Initially, this form of translation is executed in written format. Still, it is not deemed finished until it is overlaid onto the video series in oral form (voice-over, dubbing, audio description, audiovisual advertising), in a distinct graphical layout (subtitles, subtitles for the hearing impaired, interlingual respeaking, games, metadata), or a unique oral-written amalgamation (translation of works in the formats of virtual reality, augmented reality, mixed reality).

An important consideration for the translator-localizer is that the recipient receives all the information from the source work through several sensory channels in the form of diverse sign systems, which differ in terms of cognitive processing and structure. The multifaceted nature of the professional work of future translators, who will be involved in localizing diverse marketing audiovisual works, advertising projects, and video games, necessitates the need to enhance their repertoire of professional knowledge, skills, and abilities. Specifically, we are referring to:

– Understanding the correlation between the source language and the target language, including their linguistic systems and norms specific to different audiences.
– Familiarity with the fundamental techniques for constructing audiovisual discourse units (such as story scenes) in both the original language and the target language.
– Proficiency in both general and specific vocabulary used in the field of audiovisual content creation, in both the source language and the language of translation, is necessary for a thorough understanding of the work processes involved in creating information and audiovisual products.
– The capacity to distinguish the objectives of producing a specific information product from a multimodal entity.

It is understanding the structural, linguistic, visual, noise-musical, and other elements that contribute to the formation of the semantic structure of audiovisual discourses. This knowledge helps identify the communication goals of the writers, who use different "codes" in a specific product.

The skill of considering the mental state, experience, and interests of target audiences is crucial when selecting localization strategies, particularly when translating audiovisual discourses for children. This is because children's emotional reactions, vocabulary, and life experiences are still developing and differ significantly from those of adult audiences. The list of knowledge, abilities, and skills provided in the qualification requirements and professional standards for training future translators in European countries is not exhaustive. For instance, ISO 17100 standards include additional translation services such as localization, internationalization, compilation, and management of term banks [20]. These services are sometimes referred to as "value-added services".

The enhancement of professional training for future translators, with a focus on foreign experience, particularly during the COVID-19 pandemic [21], primarily involves the usage of digital technologies in the educational process [22]. We hold the belief of Alla Olkhovska, who states that in the context of increased professional activity among future translators, as well as the widespread use of technology and globalization, the education of students in this field should align with the principles of professional education in the digital age [23].

The rapid development of digital technologies in recent years has led to their integration into higher education institutions. This integration has highlighted the contradictions between the existing methodology of training future translators for localization and the need for modification due to globalization. It has also created a need for the implementation of new learning tools that change the methodological basis of linguistic education. This integration has identified potential opportunities.

The integration of digital technology into the education of future translators involves the use of infographics and visual-logical thinking to efficiently solve complex linguistic tasks that may have incomplete information. The modern translator's innovative, intuitive, and probabilistic thinking plays a crucial role in the 21st-century translation paradigm shift. As per M. Camilleri and A. Camilleri [24], the goal of informatization in education is to provide the educational sector with clear norms, a solid theoretical foundation, and technology pathways to address several important responsibilities:

1) The educational system is being reoriented to prioritize the development of students' personality, intelligence, and socialization within the context of an information society. This involves adjusting the aims, content, techniques, and organization of education.

2) The arrangement of the development and certification of hardware and software information complexes that carry out educational duties and operate based on computer technology, along with their integration with contemporary educational technologies.

The incorporation of digital technologies into the technological framework of future translators' professional training, with a focus on localization, should involve several methodical approaches to enhance its effectiveness. This can be achieved through the utilization of diverse digital tools, internet resources, and specialized linguistic software. The following main directions are being considered:

– the integration of versatile digital technologies, such as text editors, graphic software products, database management systems, terminological banks, typing, editing, text recognition programs, spreadsheet processors, and modeling systems, is essential in the educational process. These technologies are employed due to their specific functionalities:

a) the development of an educational information environment does not necessitate the use of specialized software. This allows for a greater emphasis on creating methodical support for authors in the area of designing the content of professionally oriented tasks that future translators will carry out in this environment.

b) the expertly designed materials and digital products created by the author can be used when working with any type of hardware, as they are compatible with the latest versions of digital technologies.

These factors apply to the implementation of preparing future translators for localization, including:

– the modality principle. It suggests that students have improved memory retention when graphic images are accompanied by audio.

– the pre-training principle. It states that if translators are not acquainted with the terminology employed in the presentation, it is essential to develop a distinct module that a comprehensive explanation of the key lexical concepts.

The idea of spatial proximity, also known as the Spatial Contiguity idea, suggests that for optimal assimilation of linguistic material, it is recommended to position text and visuals close to each other. The idea of temporal closeness, also known as the Temporal Contiguity idea, states that descriptions and explanations should be presented at the same time as the display of visuals.

- the segmenting principle. It suggests that when presenting complex content, it is beneficial to break it down into shorter parts. This allows students to have control over the pace at which they move from one segment to another.
- the signaling concept. It states that it is crucial to visually emphasize the most significant elements of educational information [25].

Telecommunication technologies facilitate translators' access to remote information resources, including those hosted on Internet servers. Translators can expand their personal and professional horizons by accessing a diverse array of databases and leveraging Web technologies 4.0. To use this method of using the capabilities of computer technology to train upcoming translators for localization, the strategy involved leveraging the existing functionalities of both local and worldwide computer networks.

These networks enable the retrieval of information from various sources. Students within the local network of a particular higher education institution are provided with authorization to access information kept on its server, which includes servers belonging to several departments. Access to these resources can be acquired through specific computer courses, the library, and computer equipment available in different departments. The local computer network of the Higher Education Institution encompasses a diverse range of information, including educational class schedules, study plans, announcements, and electronic methodical materials authored by the institution.

- Computer communication and information technologies are employed to enhance the surveillance of the quality of the educational process. This includes the application of computer textbooks, control and test software, electronic reference books and databases, as well as educational movies. In addition, specialized computer training programs are utilized.

Computer training packages provide numerous benefits compared to conventional methods of professional training for aspiring translators specializing in localization. These programs offer a direct and engaging learning experience through audiovisual involvement, which increases the overall learning process. By integrating the aforementioned advancements with conventional instructional approaches, it will be feasible to enable diverse forms of oral exercises for students, improve the language proficiency of aspiring translators, establish communicative scenarios with a vocational and socio-cultural emphasis, implement tailored guidance, and foster autonomous learning among students.

Computer communication technologies provide new opportunities for developing innovative methods that encourage future translators to use translation strategies to localize information arrays. Students can participate in virtual debates on various educational platforms and subject forums, as well as cooperate on joint creative projects with participants from diverse higher education institutions. Hence, the intentional incorporation of digital technologies into the educational process was seen as a proactive approach to tailor the training of aspiring translators to enhance their readiness for localization.

- Multimedia technologies refer to the creation of educational multimedia products designed to train aspiring translators in the field of localization. These technologies encompass the fusion of textual, graphical, auditory, and visual data, such as electronic encyclopedias and computer-based instructional videos. We acknowledge the instructional value of hypermedia technology, which enables students to retrieve a diverse array of material through information retrieval and reference systems like Speechpool and Blackbone repositories [26]. The information is available in text, audio, and video formats, allowing students to access, choose, and arrange the content.

To achieve optimal installation in language and computer classrooms, it is advisable to get guidance from the Dialogue NIBELUNG and SANAKO Lab100 STS software. In addition, the use of information and search systems and databases, which act as storage spaces for

information, will make it easier to find and provide the necessary information in answer to relevant search requests.

Moreover, using the previously mentioned approach will allow for the integration of both visual and auditory channels in perceiving information. This will primarily help students develop their ability to independently improve their language skills, especially through comparative analysis, and to track changes in language usage among different target audiences. The Internet has become as an indispensable instrument for self-education among translation specialists [27]. The Internet provides active information interchange and facilitates the quick update and expansion of the lexical system of the English language [28]. By incorporating audio and visual effects, information streams can be diversified, the creative powers of emerging translators can be stimulated, and interactivity and interdisciplinarity can be facilitated in classes spanning several disciplines of study.

Specialized software and method complexes, such as Speechpool, Blackbone, BlackBox, and SCICremTM, are employed to replicate translation duties that are tailored to a given profession. These tools are specifically planned and implemented to meet the needs of a particular field of study and to help train future translators in the field of localization [29].

Amidst the ongoing global changes in education caused by the digitalization of society, science, and the economy, a practical approach to preparing translators in making for localization involves integrating immersive technologies, such as virtual and augmented reality (VR/AR), into the university's educational methods.

VR/AR is closely linked to the concept of simulated learning environments and complete immersion. The notion of immersion, characterized by the complete involvement of students in the authentic setting of professional practice, was not perceived as a pedagogical approach, but rather as a distinctive attribute of the informational educational environment [30]. The purpose of this space is to enhance the readiness of future translators for localization, and its establishment was made possible by the educational skills of using digital technologies. The purpose of integrating digital products, such as virtual reality (VR) and augmented reality (AR) technologies, is to augment students' hands-on experience, enabling them to proficiently apply the knowledge, skills, and competencies they have acquired to their professional pursuits.

In the translation industry, a new notion called "digital translation" has become widely accepted in recent times. The content of this technology introduces a novel form of translation in localization. It involves a network-based interaction system between translators and digital tools, such as artificial intelligence. The purpose is to enhance the efficiency of executing specific translation requests and improve the quality of localized audiovisual or software products. We are referring to the integration of conventional "human" translation technologies with digital information and communication technologies, forming a unified system. The term "digital translation" is linked to the methodology of applying digital technologies in translation for localization purposes [31]. Digital technologies in translation enable the execution of various actions on the text: converting different document formats into text, providing convenience and time-saving for translators, etc.

During the pre-translation analysis stage, tasks such as word counting, frequency analysis, term extraction, and the use of technology for identifying repeated segments and preliminary translation are performed.

During the translation process itself, various tools are used, including spell-checking within the translation, referencing electronic dictionaries, requesting and verifying parallel corpora, and recognizing terms [32].

During the post-machine processing and editing stage, various tasks are carried out to ensure the quality of the translation product. These tasks include quality control, translation format conversion, language testing, and language asset management technologies.

When preparing future translators for localization, their professional training should consider the possibilities of computer technologies. The proliferation of these resources has broadened the availability of genuine socio-cultural and linguistically diverse materials (for informational education), computer training manuals accessible online (for formal education), and open online courses (for informal education) [33].

Upon finishing their online tasks, prospective translators and educators can access a plethora of resources such as electronic libraries, museums, archival sources, repositories, open databases of localized materials from global localization associations, electronic versions of newspapers and magazines, online educational programs, and dictionaries. They can also engage in discussions and video conferences, as well as exchange information through email, among other possibilities. The implementation of Computer-based training addresses several significant issues in the educational process and guarantees its technological advancement: it minimizes the time delay between learning new concepts and assessing the outcomes; it resolves the challenge of tailoring and personalizing the learning experience for each student; it fosters the development of autonomy among aspiring translators [34].

4. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

To conclude, the technological enhancement of localization-based professional training is pivotal for the development of future translators within the context of higher education digitalization. By integrating advanced digital tools, simulation platforms, and AI-powered localization systems into curricula, educational institutions can better prepare students for the demands of the globalized language services industry. Such advancements not only broaden students' technical competencies but also enhance their adaptability to evolving industry standards. The digitization of training programs offers increased accessibility and flexibility, supporting lifelong learning and empowering students to remain competitive in an increasingly digital landscape. Ultimately, the blend of technology and education in localization-based training will be instrumental in shaping the next generation of translation professionals, equipping them with the practical skills and innovative mindsets required to thrive in a digitally-driven, interconnected world. Therefore, the concluded key areas for focus are: integration of translation technology, virtual and augmented reality, collaborative online platforms, e-Learning modules, AI and machine learning applications, industry case studies, feedback mechanisms.

The further direction of the study will be the issues of assessing the effectiveness of online training programs for localization, particularly in the context of remote learning and conducting longitudinal studies to track the career trajectories of graduates from localization-focused programs to assess long-term outcomes.

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ТЕХНОЛОГІЗАЦІЯ ПРОФЕСІЙНОЇ ПІДГОТОВКИ МАЙБУТНІХ ПЕРЕКЛАДАЧІВ: ФОКУС НА ЛОКАЛІЗАЦІЇ

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Анотація. У статті висвітлено авторський погляд на технологізацію професійної підготовки майбутніх перекладачів на засадах локалізації в умовах цифровізації вищої лінгвістичної

освіти, оскільки в умовах сьогодення майбутні перекладачі повинні бути готові до створення локалізованого інтернаціонального перекладацького продукту, який однаково активно використовуватиметься користувачами з різних країн світу. Для цього використовувались різноманітні методи: *літературний огляд* (проведення ґрунтовного літературного огляду передбачає актуальні дослідження, наукові статті та методології, пов'язані з технологізацією освітнього процесу); *аналіз педагогічних практик* (аналіз успішних практик підготовки майбутніх перекладачів до професійної діяльності загалом й локалізації зокрема та виявлення ефективних цифрових технологій, що показують високу ефективність і нівелюють освітні втрати). Крім того, було проведено ретельне порівняння цифрових технологій, щоб оцінити їх ефективність у підготовці майбутніх перекладачів на засадах локалізації. У дослідженні зроблено висновок, що професійна підготовка повинна озброїти майбутніх перекладачів навичками ефективного використання цифрових технологій у сучасних технологічних умовах, революціонізуючи навчання перекладачів шляхом цифровізації перекладацької освіти, з особливим акцентом на локалізацію. Цей підхід покращує освітній прогрес, поєднуючи рекурсивні та дискурсивні парадигми, гарантуючи автентичність, сприяючи навчанню локалізації та створенню прозорої та гнучкої атмосфери у ЗВО. Інтеграція цифрових технологій вирішує кілька важливих проблем в освіті та гарантує її ефективність: створення віртуального та реального іншомовного середовища, яке дає можливість забезпечити індивідуальну траєкторію навчання, орієнтовану на здібності студентів; покращення контролю знань, умінь і навичок; підвищення ефективності навчання через інтерактивність, мультимедійність та індивідуалізацію.

Ключові слова: аудіовізуальні продукти; цифрові технології; перекладачі; локалізація; навчання локалізації; технології навчання.