



## Translation-Focused Technological Competence: Bridging Tradition and Innovation

Haldun Vural<sup>1,a,\*</sup>

<sup>1</sup>Department of English Interpreter and Translation, Faculty of Humanities, University of Kapadokya, Nevşehir, Türkiye

\*Corresponding author

### Research Article

History

Received: 14/01/2025

Accepted: 13/02/2025

### ABSTRACT

Translation has become a multidisciplinary profession which is influenced by technological advances rather than being a traditional linguistic discipline. Translators have long acted as intermediaries between languages and cultures, facilitating communication across boundaries. The field of translation studies has broadened in the contemporary age, including theories from other fields and adjusting to technological advancements that are changing the nature of translation both in practice and education. The idea of translation-focused technological competency is examined in this study, with an emphasis on how technology improves the productivity, accuracy, and efficiency of translators. Instant information sharing via Facebook, Instagram, WhatsApp, YouTube, and other platforms has been made possible by the emergence of digital media and Web 2.0 technologies, which have completely changed communication. By providing interactive communication and translation solutions via software, mobile applications, and smart devices, these innovations have also revolutionized translation methods. Machine translation enabled by artificial intelligence lacks emotional intelligence and nuanced comprehension required for precise interpretation of complicated texts. Therefore, human translators are still essential, even if technology helps to increase accessibility and decrease workload. Consequently, human translators are moving into positions that concentrate on correcting and improving translations produced by machines. This change emphasizes how crucial it is for translators to be technologically proficient since it enables them to use digital tools efficiently without sacrificing the quality and authenticity of their translations. Translators may improve their performance, ensure accuracy, and satisfy the needs of a globalized society by being proficient with technology tools and being aware of their limitations. This paper positions translators as crucial mediators in the digital era by highlighting the necessity of ongoing adaptation and skill improvement in translation methods. In the end, the human element is still essential to producing translations that are suitable for the target culture and setting.

**Keywords:** translation competence, technological innovation, digital media, machine translation, *Web 2.0 tools*, *artificial intelligence*.

## Çeviri Odaklı Teknolojik Yeterlilik: Gelenek ve Yenilik Arasındaki Köprü

### Öz

Bir zamanlar geleneksel bir dilbilim disiplini olan çeviri, teknolojik gelişmelerle şekillenen çok disiplinli bir mesleğe dönüşmüştür. Çevirmenler tarihsel olarak diller ve kültürler arasında iletişimi kolaylaştırmışlardır ve bugün alan çeşitli teorileri içermekte ve uygulama ve eğitimdeki teknoloji odaklı değişikliklere uyum sağlamaktadır. Bu çalışma, teknolojinin çevirmenlerin üretkenliğini, doğruluğunu ve verimliliğini nasıl artırdığını vurgulayarak çeviri odaklı teknolojik yeterliliği araştırmaktadır. Facebook, Instagram ve WhatsApp gibi platformlar da dahil olmak üzere dijital medyanın ve Web 2.0 teknolojilerinin yükselişi, iletişimi devrim niteliğinde değiştirmiş ve yazılım, mobil uygulamalar ve akıllı cihazlar aracılığıyla etkileşimli çeviri çözümleri sunmuştur. Ancak yapay zeka destekli makine çevirisi, karmaşık metinleri yorumlamak için gerekli olan duygusal zekadan ve nüansları anlayıştan yoksundur ve bu da insan çevirmenlerin vazgeçilmez rolünü pekiştirir. Çevirmenler, kalite ve özgünlüğü korumada teknolojik yeterliliğin önemini vurgulayarak, makine tarafından oluşturulan çevirileri gözden geçirmeye ve iyileştirmeye giderek daha fazla odaklanmaktadır. Dijital araçlarda ustalaşarak ve bunların sınırlamalarını tanıyarak, çevirmenler performansını optimize edebilir, hassasiyeti garanti edebilir ve küreselleşmiş bir dünyanın taleplerini karşılayabilir. Bu makale, çevirmenin dijital çağda kritik bir arabulucu olarak rolünün altını çizerek, devam eden beceri geliştirme ve gelişen çeviri uygulamalarına uyum sağlamayı savunurken, kültürel ve bağlamsal olarak uygun çeviriler sunmada insan unsurunun yeri doldurulamaz değerini yeniden teyit etmektedir.

**Anahtar Kelimeler:** çeviride yeterlilik, teknolojik gelişmeler, makine çevirisi, yapay zeka, web 2.0 araçları.

Copyright



This work is licensed under  
Creative Commons Attribution 4.0  
International License

<sup>a</sup> [haldun.vural@kapadokya.edu.tr](mailto:haldun.vural@kapadokya.edu.tr)

[ORCID: 0000-0002-4638-4084](https://orcid.org/0000-0002-4638-4084)

**How to Cite:** Vural, H (2025) Translation-Focused Technological Competence: Bridging Tradition and Innovation, CUJOSS, 49(1): 85-95

## Introduction

Translation has traditionally served as a bridge between linguistic and cultural divides, transforming the unfamiliar into the comprehensible. Translators, as mediators of language and culture, have played a pivotal role in facilitating global communication (Bassnett, 2013, p. 44). However, the field of translation has evolved into a multidisciplinary domain, integrating elements of linguistics, cultural studies, and increasingly, technology. This shift underscores the necessity for translators to adapt both theoretically and practically, as technological advancements continue to reshape the landscape of international communication (Cronin, 2013, p. 125). The rapid development of communication technologies has profoundly influenced translation practices. The 20th and 21st centuries witnessed a dramatic transformation in how people communicate, transitioning from traditional written correspondence to instantaneous global connectivity through digital platforms. The advent of Web 2.0 technologies, such as YouTube, Facebook, Instagram, and messaging applications, has revolutionized international communication, generating a dynamic and interactive digital environment. For translators, this shift presents both opportunities and challenges, as they must now navigate and adapt to these evolving modes of communication (O'Hagan, 2019, p. 361).

In this digital age, communication has expanded beyond written text to include multimedia formats like radio, video, and television broadcasts, enabling real-time access to global events. The rise of the Internet and Web 2.0 technologies has further transformed interaction, moving from static information retrieval to interactive, user-driven platforms. Tools such as machine translation software, smart keyboards, and mobile translation applications have become indispensable for translators, enhancing efficiency and accessibility in their work (Pym, 2011, p. 2). As technology continues to permeate daily life, translators must increasingly rely on these digital tools to meet the demands of a globally connected world.

Historically, a translator has been defined as someone who bridges gaps—first between signs, then across languages and cultures—transforming the incomprehensible into the comprehensible. This role has evolved over time, and today, translation is recognized as a multidisciplinary field with distinct theoretical frameworks and interconnected study areas. While the field draws from linguistics, cultural studies, and other disciplines, its practical application has been significantly shaped by technological advancements. These advancements have not only facilitated translation education and practices but also redefined the translator's role in a rapidly changing digital landscape. From ancient times to the present, communication methods have undergone profound transformations, yet human translators remain indispensable. Despite the rise of machine translation systems and artificial intelligence (AI), these technologies often fall short in handling complex texts, lacking the emotional intelligence and nuanced cultural understanding required for effective and culturally appropriate translations (Bowker & Fisher, 2010, p. 60).

As a result, technology makes translation easier in certain ways—by increasing accuracy, speed, and customer satisfaction—it redefines the role of the translator as well. Instead of replacing human translators, technology directs their attention to editing, proofreading, and improving writing produced by machines. Translators must become technologically competent in this dynamic environment by learning how to use digital tools and being aware of their limits (Király, 2014, p. 21). They can maintain strict quality and accurate requirements in this way, guaranteeing that the final product represents both linguistic and cultural correctness.

As the world becomes more interconnected, technological products are developed to satisfy people's growing needs in a variety of fields. These days, even schoolchildren's wristwatches have computers and internet connections, which were previously exclusive to certain establishments and organizations. The abundance of options and affordability of technology items has made them extremely accessible. The emergence of Web 2.0 technology has led to the appearance of a new communication paradigm that facilitates interactive communication within digital spaces. People in need of translation can readily use written and oral translation programs and software, mobile translation apps, smart keyboards with built-in translation functions, and written and verbal translator features integrated into telecommunications applications.

Although technology is developing quickly and in a variety of ways benefit translators in terms of labor, time, profit, and customer satisfaction, it also gives them more control over the work they do. Aside from all these benefits, it is crucial to keep in mind that artificial intelligence (AI) produces the algorithms and tools used for machine translation. These kinds of technologies are now lacking in emotional intelligence (EI/EQ) and perform poorly in many different kinds of texts. It follows that translators will never be out of work; instead, they will eventually transition into editing roles, revising writings that have been entirely translated into digital settings and even reproduced in the target language after proofreading and grammatical checks. To put it another way, when translating between any two languages, human translators will always have the last say. Translators may reduce workloads, increase productivity, and provide error-free output to target language text recipients by knowing which digital media technologies to use, how to use them, and for what purposes.

As the role of technology in translation continues to expand, it is evident that its integration is not merely a matter of convenience but a transformative force reshaping the profession. While AI-driven tools offer unprecedented efficiency, their limitations in handling nuanced, culturally sensitive, and emotionally intelligent tasks underscore the enduring importance of human translators. This dynamic interplay between human expertise and technological innovation raises critical questions about how translators can adapt to these

changes. How can they leverage technology to enhance their work without compromising the artistry and cultural depth that define their craft? These questions form the foundation of this article's exploration into the evolving relationship between technology and translation.

Therefore, this article examines the expanding relationship between technology and translation, emphasizing the growing need for translators to develop technological competencies. While machines can assist in translation tasks, human intervention remains indispensable, particularly when producing complex, contextually relevant results. Rather than viewing AI as a replacement for human skills, the future of translation lies in fostering a collaborative partnership where technology enhances, rather than diminishes, the art of translation. This raises an important question: How can translators effectively integrate technological tools into their workflows while preserving the nuanced, culturally sensitive aspects of their work?

### ***Translation Focused Technology Competence***

Due to today's market conditions and needs, as well as the rapid advancement of technology, it is becoming increasingly difficult for professional translators and students to complete the translation process independently of technology. A substantial amount of translation is needed in terms of geopolitical locations and relations with other countries, particularly in countries where translation is needed in the military, political, commercial, health, and educational fields, among many other areas. These translations must be finished as quickly as possible while maintaining accuracy, dependability, and acceptability. According to this viewpoint, translators working in modern times must make use of online technologies, digital media contexts, and translation tools. By doing so, they may both make use of all the advantages that come with technology while working on additional translation projects. Besides, instrumental competence is a sort of translation competency that has been established and recommended for the use of technology in translation (PACTE, 2017; Froeliger et al., 2023, p. 13-29). It is crucial to have translation memories, understand how to generate terminology database, and be able to access the desired current information using electronic search engines, in addition to being familiar with various software programs like Excel and PowerPoint, which are part of the basic computer skills. Participating in industry initiatives, particularly after graduation, may also help translation students understand how technology impacts the translation process.

Translation students will become specialists in their profession and acquire confidence in translating if they know how to utilize and arrange a translation database, word bank, and associated translation technologies. Thus, instructing students on the appropriate use of technologies like machine and computer-assisted translation, as well as their benefits and drawbacks,

during their translation education can help them later on in the translation industry (Sikora, 2014, p. 7).

Technical proficiency and familiarity with translation tools are highly valued in translation education, in addition to theoretical understanding and study in the subject of translation studies, as prerequisites for translating. A sector-wide study on the competencies of potential translators, particularly in the areas of technology and translation, yielded results that are a degree in translation with specialization in translation; familiarity with technical writing and content management; knowledge of terminology research skills and the ability to critically assess sources; familiarity with information and communication technologies for both general and more specialized translation-related purposes; e-mail, websites, web forums, search engines, reference protocols, file management servers, desktop office programs and applications; familiarity with database management systems; familiarity with electronic data management; the ability to use translation memory systems with proficiency; read, revise, and post-edit documents with ease; and understand the technology and software utilized in document development and management processes (Gouadec 2007, pp. 331-32). It may be considered imperative that technology be incorporated into translation education so that students may comprehend computer structure and issues associated with computer technology. In order to prevent inaccurate translations, students will therefore start to learn and comprehend how to distinguish between the parts of a text that can be translated and those that cannot in software systems. Therefore, it would be beneficial to incorporate into the course material on translation technologies subjects like open source applications, audio, image, video editing, localization and corpus, machine translation, language tools, web 2.0 and 3.0 technologies, translation memories, terminology tools, online bookmarking, social bookmarking, web editors, online document management systems, desktop publishing software, speech recognition systems, text browsers, search engines, online communication, and word processors.

These subjects fall into the category of technology in oral and written translation that ought to be included in translation education. Screen recording, screen capture, PDF tools, cloud printers, search engines, desktop publishing, corpora, terminology management systems, translation memories, internet browsers and plug-ins, toolbars, word processing programs, digital dictionaries, Web 2.0 and 3.0 tools, and computer translation and editing, localization. Subjects including online audiovisual resources, note-taking, blogs, virtual worlds, remote interpreting, translation memory systems for interpreters, and audio sources can all be covered in detail within the oral translation category.

The knowledge of generating text on a document, spelling and orthographic rules, grammar check, the internet, translation memories, terminology databases, voice recognition, and the knowledge of translation,

correction, and terminology management are all examples of the requirements for technological competence. Other requirements include the ability to adapt to new tools, particularly when translating multimedia and audiovisual materials, the ability to prepare text for translation in various formats and technical environments, the ability to produce the translation, and an understanding of the potential and limitations of machine translation (Froeliger et al., 2023, p. 13-29).

The PACTE competency model states that it is critical to employ information communication technology and documentation sources while translating. Various dictionaries, encyclopedias, grammar, morphology, parallel texts, electronic media, and search engines are examples of these sources and technology. It should be noted that the technical and digital environments that support the research competence to be utilized in the translation process are really the instrumental competence included in the PACTE paradigm (Albir et al., 2011, p. 5). The use of electronic corpora for translation purposes and instrumental competence is covered under subheadings, and translation competence is recognized as meta-competence in another research that suggests it as a competency in the use of electronic corpora in translation education. Translation-oriented electronic corpus use competence includes understanding the principles of corpus building, mastering corpus-related software, and applying corpus to solve translation problems, whereas instrumental competence in this model includes descriptive and procedural knowledge about using information communication technology tools and documentation sources to solve translation problems (Rodríguez-Inés & Albir, 2012, p. 97). Professional translators and translation students nowadays are required to follow technical advancements in parallel with modern times in order to generate and deliver translated materials more quickly and reliably.

The following items can be generalized from the literature review on translation-oriented technological competence: the ability to use basic computer software; the development and utilization of databases and translation memories; knowledge of electronic search engines; familiarity with spell-checking and proofreading rules for documents; awareness of the potential and constraints of translation management systems and machine translation; and access to online dictionaries, encyclopedias, and parallel texts.

It appears that translators can use any word processing software or online dictionary to translate. Two categories can be used to analyze computer-aided translation technologies. As a result, the heading of translation software can provide further insight into the things listed above under the translation focused technology competency. Software and apps intended for direct online usage in translation processes are included in this group of translation software. Translation is directly tied to the main purposes of the software in this category. Applications and software falling under this category can

be utilized in translation procedures. Word processors, online document management systems, online and offline dictionaries, optical readers, and document management software that aids in digitizing source texts are examples of translation-assisting software, whereas SDL Trados, Across, MemoQ, Wordfast, and Google Toolkit are examples of translation software.

### **Translation Software**

Localization software, machine translation programs, translation memory, terminology management systems, and translation management systems utilized by the translator are all examples of translation software. Machine translation programs, translation memories, term banks, terminology management systems, and localization software are examples of translation software that assist translators in their work and are believed to offer benefits in terms of time and money by shortening the translation process. In addition to this translation software, various fields and professional associations can use word processors, document, audio, and text converters, online document management systems, online notebooks, transcription software, digital dictionaries and corpora, and post-editors as well. The fundamental computer programs that translators should be informed on and utilize, as well as the programs and software that translators specifically require but that researchers or specialists from other disciplines may also use, are crucial.

### **Corpora**

Translators also need to be familiar with and employ corpora, as another result of translation technology. Translation scholars and translators use corpora, which are defined as a collection of machine-readable written or spoken materials gathered for linguistic research, to shorten the translation process and finish the translation text in the target language with appropriate terminology. In lexicology and linguistics, a corpus is an extensive compilation of spoken and written texts as well as text units saved on electronic media. Understanding the source text, producing a competent text in the target language, and learning about text kinds, collocations, and idiomatic language usage are all things that corpora may assist translators, translation researchers, and translation educators (Hu, 2016, p. 35). Three primary corpora exist for translation studies and teaching, according to Mona Baker (1995, p. 224). These are a) Comparable corpus: Two distinct sets of texts in the same language make up this corpus. The original texts in the target language are found in one corpus, while translations from any source language or languages into this language are found in the other corpus; b) Parallel corpus: This consists of texts in language A together with their translations into language B; and c) Multilingual corpus: This comprises one or more sets of monolingual corpora in several languages that are grouped together in the same or distinct units according to comparable design standards (Baker, 1995, p. 226).

The five other categories that examine the functions of corpora are mediation for the representation of written or audio texts; mediation for the representation of printed or electronic corpora; possibilities for monolingual and multilingual usage; characteristics of selected texts, such as historical, social, and regional variations; statistical factors; and characteristics in the process of preparing explanatory texts (Austermuhl, 2014, p. 124).

### **Post-editors**

Final editing is done by post-editors. Post-editors can operate apart from machine translations as well as incorporated into machine translation algorithms. In addition to identifying incorrect usages, incorrect patterns, or colloquial expressions that may occur in the translation, post-editors offer support for grammar, uppercase and lowercase spelling, contiguous and separate spelling, punctuation, spelling rules, date and number spelling, and the preference for a more formal language or a more sophisticated style. The quality of the translation is influenced by post-editing and is determined by machine translation's automated metrics. Professional and inexperienced translators' translation expertise is not taken into consideration by post-editing tools. However, post-editors can help with spelling, punctuation, semantic ambiguities, and structural issues (Daems et al., 2017, p. 5). Another study assesses the effects of online automated post-formatting on neural machine translation systems' output. Given the necessary resources and technological know-how, the automatic post-formatting technology that is now in use in the majority of Language Service Providers' environments seems to be efficient (Negri et al., 2018). Another definition of post-editing is the process of making changes to the machine translation result without having to re-translate the text. The goal of post-editing is to fix recurring and systematic mistakes in the machine translation output (Vu and Haffari, 2018, pp. 3048-3053). Since neural machine translation contributes to improving the quality of translated materials, it has been recognized as a revolution in translation studies. In this regard, post-formatting systems provide a special chance to advance neural machine translation systems (Peris et al., 2017, pp. 201-220). The quality of the translated material in the target language may be divided into two categories: post-editing and machine translation. The first level of quality (limited post-editing) defines "good enough" as the ability to properly and sensibly express the content of the original material without the need for formal or grammatical revisions. At this stage, the editor has to make sure that the content written in the target language is without any semantic complexity and that there are no improper additions or omissions that affect the translation's semantic correctness. The translation must be of publishable quality at the second quality level, which is complete post-editing. The translation must be accurate, clear, and grammatically and formally correct (Koponen, 2016, pp. 133-135).

It might be argued that post-editors are helpful in terms of speed and time, grammatical rules, punctuation and spelling standards, and a high degree of language usage, as well as the quality of translation in the target language.

### **Electronic Dictionaries**

In the dictionary, the term "dictionary" has two distinct meanings. The first of which is 'a reference book on a certain subject, usually arranged in alphabetical order' while the other is 'a book or electronic resource that lists the words of a language (usually in alphabetical order); a resource that provides the meanings, pronunciations, origins and usage information of words in a different language' (Stevenson, 2010, p. 730). It is widely acknowledged that the earliest bilingual dictionary was likely produced on clay tablets by the Akkadians or Babylonians in Western Asia in 2600 BC, and that the dictionary's foundations extend back about 4,000 years. Today, dictionaries that are entirely produced in a technical and digital context and that are accessible both online and offline can be said to have replaced printed dictionaries and encyclopedias. Electronic dictionaries are those that can be accessed online to interpret the language of the original text. They also contain information like synonyms, antonyms, and definitions of terms. By identifying the meaning provided in the lexical context, these dictionaries aid in the comprehension of in-text information (Austermuhl, 2014, p. 68).

As technology advanced, electronic dictionaries replaced hard-copy dictionaries and encyclopedias, and they have made the job of numerous scholars, students, and translators easier. Due to the fact that translators, scholars, and language learners often choose electronic dictionaries, it is evident that numerous options of online dictionaries have been presented to the market over time (Heletka, 2022). Some electronic dictionaries provide translations in many languages, while others exclusively provide translations in the source and target languages. These electronic dictionaries have limited yet variable word memory, but free online digital dictionaries have become available on the Internet.

### **Transcription Software**

The use of transcription software throughout the translation process can help with time management. by enabling them to finish their job more quickly. Video encoding is usually used for recordings that contain an audiovisual version but no written text, or when the target device does not support the original format or has limited storage space for the original file.

Audio or video recordings may also be used as the source text in translation, and they may also need to be converted into textual form in the target language. It may occasionally be necessary to write out a transcription of a conference speech, video recording, or film. Spoken messages are transformed into written form using transcription software. By listening to the sound of a voice recording, a speech, or any video recording, the transcription software's voice writing or voice printing ability may be used to quickly turn the full speech into written text. Audio and video recordings may be obtained in written form in the source language by utilizing the URL copy and video copy and translation tool. Once the transcription process is finished, the translation can begin.



Certain applications can be used for transcription, even though their primary function is not to directly extract transcription from audio or video recordings. On the other hand, transcription software is undoubtedly one of the most crucial tools a translator would require, particularly when translating subtitles. These apps are a type of document converter and may also be found in many places as video encoding. Converting video from one format to another, as MKV to MP4 or 3GP to MP4, in order to make it compatible with a destination format, player, platform, editing program, etc., is known as video encoding.

### **Online Document Management Systems**

Online document management systems are also known as cloud systems. An online document management system is one that allows documents to be generated, saved, and viewed online from any location with an internet connection. Frequently used online document management systems include Revver, DocuPhase, Folderit, Adobe Document Cloud, Zoho WorkDrive, OneDrive, Google Drive, iCloud, SkyDrive, Zotero, Mendeley, Yandex Disk and Dropbox. These systems may be utilized with mobile applications that are compatible with iOS and Android software and can be accessed through smartphones and tablets.

The Docs on Google Drive may be considered to serve the same purpose as all other online and offline word processors. Multiple people may collaborate on a document generated in Drive Docs, complete tasks, and provide immediate feedback. Online document sharing allows users to communicate with one another via instant messaging and collaboration. Additionally, documents may be shared by email, and those who share them can remark on them. Direct intervention in the text is another option (Nagrama et al., 2024, pp. 1-6). Translators and anybody from any field who needs to save working documents might benefit from online document management systems in terms of task sharing and work monitoring.

### **Online Notebooks**

The usage of online notebooks, which are compatible with portable devices like tablets, smartphones, and desktop or laptop computers, facilitates its users' everyday daily tasks. Smart mobile phones may be used to store notes digitally, eliminating the need for a pen and paper (Krüger, 2022, pp. 503-523). Numerous online-accessible notebooks are available for download on iOS and Android devices. Keyboard, handwriting, or voice typing are all options for taking notes with notebooks like Notion, Goodnotes, Evernote, Microsoft OneNote, Colab, Jupyter Notebook, and Zoho Notebook. Online notebooks allow users to share their notes with other users, make reminders for their notes, archive and preserve them for as long as they like. Notes stored in online notebooks can also be sent by email or using any smart device's online application.

### **Document Converter Programs**

Knowing how to use document converter software is essential for speedy translation of documents into the target language. Nowadays, individuals from many disciplines who record and submit papers utilize document converters for two distinct procedures. These procedures can take the form of converting audio recordings to text or written text to another written text format (e.g., Word-Excel, Excel-Word, Pdf-Word, Word-Pdf, Excel-Pdf, etc.). Online document management systems and word processors may generate documents that integrate document converters. With the "save as" feature, documents may be changed to the preferred formats. Online applications can be used to convert documents if the requested program is not accessible.

Applications that can convert written documents into various written formats and audio recordings are needed. Examples of these applications are Google Text-to-Speech API, Speechelo, TTSMaker, Voicemaker and others that can convert written documents into audio recordings. As technology advances, it is now possible to see apps in portable smart devices that are comparable to these converter programs.

### **Word Processing Devices**

An understanding of the subject, proficiency in the language pair to be translated, a piece of paper, and a pen would have been enough to complete a written translation years ago. But in the current era of technical advancements and growing industry needs, translators are expected to do as much accurate work as possible in a short amount of time. In order to help keep information longer and more efficiently as it moves into a digital environment, computer software applications are now available for organizing papers and paperwork. A word processor is the first application that people in any field of study and research who want to organize and save materials need (Sin-wai, 2014, pp. 2-31). The broadest definition of a word processor given by dictionaries is a computer software or device that may be used to generate text using a keyboard and then process, format, store, and print it. LibreOffice Writer, WPS Office Free Writer, Google Docs, Microsoft Office Word, OpenOffice, and FocusWriter are the most widely used word processors on personal or business computers.

### **Term Banks and Terminology Management Systems**

As with corpora, term banks and terminology management systems are also thought of as tools that may be included in machine translation systems to speed up and optimize the translator's job. Term banks may appear to be translation software and together with machine translation software, they facilitate automatic translation by imposing term-terminology constraints while translating, much like translation memories, and give translators the ease of knowing that their translations are consistent.

Independent dictionaries generated with the actual definitions of words from any field of study or skill are

known as term banks. Translators can build a term bank by inputting new terms that they come across while translating into a database. The field of the translated text (technical, legal, agricultural, construction, engineering, etc.) will determine the type of word bank used, and translators using term banks need to have a basic understanding of information technology. Term banks such as GrandDictionnaire, IATE (Interactive Terminology for Europe), and EuroTermBank may contain grammatical information, synonyms, and contextual terms. Many entities, including government agencies, commercial businesses, and institutions, utilize terminologies to guarantee uniformity in their papers and to bring language and terminology together (Candel-Mora, 2017, pp. 243-260).

### **Localization Software**

Owing to localization, software on modern electronics like computers, tablets, and smartphones may be utilized concurrently anywhere in the world. A computer game that is played worldwide or any program downloaded to a smartphone or tablet might be an example of this. According to this viewpoint, localization may be studied within the context of technological proficiency that is centered on translation.

Localization often entails a variety of information technology, marketing, and language-related tasks. Definitions of localization characterize the process as preparation, editing, or adaptation and speaking of products rather than texts. For some theorists, localization is only a particular kind of translation, even though the localization industry often considers translation to be a component of localization. Adapting a product to the language and culture of the target market where it will be sold is known as localization (Pym, 2023, p. 156).

The practice of altering goods or services to accommodate for market variations is another definition of the localization concept. This concept divides the evaluation of localization into three primary categories: technical concerns, content and cultural issues, and language difficulties. Linguistic tools (also known as language technology) and administrative tools are the two central categories of localization tools. The purpose of administrative tools is to automate and optimize procedures, workflows, project management, individual productivity, and more. Since the pace and volume of localization work have made the use of technology tools vital, both categories are highly demanded in the localization industry. These tools can be useful not just for speed and volume but also for financial benefits (Wright, 2019, pp. 21-44).

Another definition of localization is the process of transferring digital material to the target language and context by linguistic, cultural, and technological modifications. With the help of the localization industry, digital product content translations may be made accessible on the market at the same time as the original and localized product versions. Businesses who intend to

simultaneously launch their items in many locations may accomplish their objective in this manner without experiencing any delays or financial losses (Kabát & Koscelníková, 2022, pp. 4-26). GALA (Globalization and Localization Association), SDL Passolo, Multilizer, Alchemy Catalyst, Visual Localize, Okapi Framework, Mojito, Weglot, MotionPoint, GlobalLink, Lokalise, POEditor, Transifex, and Crowdin are a few examples of popular localization software and enterprises.

### **Translation Memories**

The software which is often employed in the field of textual translation is called translation memory. Each translation work gets a little simpler as the translator's translation memory gets stronger by translating the same kind of content. Translation memories have always been preferred by a large number of institutions and organizations with global ties, translation companies, and individual translators. When translation memories are loaded and reinforced in accordance with specific areas of knowledge, they often become significantly more efficient. For instance, translators who work on agriculture all the time may eventually encounter identical lines and even passages in their translation memory, which will allow them to alter just the material they receive in the target language. In machine translation programs, translation memories are frequently a component of the software. By storing previously translated texts, words, and word groupings in a database and utilizing them later when translating comparable materials, translation memory might facilitate translators' work (Reinke, 2018, pp. 55-84).

Jumoo, Nubuto, Deja Vu, Trados Translator's Workbench, Star Translation services, Transit NXT, and SDL Trados are the most often used translation memories. The translator must employ many translation memories and maintain them current since eventually, utilizing just one may not be sufficient. The primary distinction between translation memory and machine translation is that the former is entered into the database manually, whilst the latter is handled automatically. Translation memories rely on a single source, which sets them apart from machine translations. When translating texts that the translator has already loaded and matched into the database, translation memories provide the translator with convenience (Heyn, 2016, pp. 123-136).

Databases that hold translated texts that correlate to the original texts are another way to describe translation memory. It is also true, though, that texts are not saved in their whole, but rather as translation units or fragments. A phrase may occasionally be regarded as a translation unit, even though in many situations, translation units are short pieces, such as data in table cells, list items, or even individual words. On the other hand, it may be claimed that translation memory systems identify unique and comparable translation units by comparing the new text with the database using their search algorithms.

Additionally, translation memories enable translators to access previously recorded information and documents

when translating, which can improve consistency and quality by allowing the usage of pre-existing translations more quickly and efficiently (Ramos & del Mar, 2016, pp. 119-139). When translating a lot of documents, translation memory systems are very useful especially when translating new papers that have already been translated and employ similar or almost identical terminology and sentences. Terminology, stylistics, and other translation elements between both the source and the target texts can be matched with the use of translation memory (O'Hagan & Ashworth, 2002, p. 44).

All of these translation memory features are offered in both free and commercial editions, and the online translators are among the most popular translation memories that is publicly accessible online. Although it is meant for professional translators, anybody who wants a translation memory can use these online translators. With the help of online tools, a dictionary can be uploaded, and terminology can be improved, edits can be made, translations can be saved, and memory information can be shared with other translators or users, another translator can be invited to the translation text being worked on, and finished translations can be exported as an original file (O'Neill, 2019, pp. 47-65).

The translator's terminology management is supported by terminology banks, digital dictionaries, machine translation software, word processors, and other technological instruments required for the translation process. Translators are expected to provide the final translated document fast, error-free, and most importantly consistently, all at a reasonable cost, in accordance with the always rising market demand and technical advancements (Bowker, 2002, pp. 77-78). Previously exclusive to users, terminology management systems and term banks may now be shared with other academics or translators and linked into machine translation software, enabling them to collaborate with these programs in an integrated way. Data management systems, word processors, memory cards, and hypermedia systems can all be used to handle terminology for translators. There are three methods for generating terminology data input, particularly in technical translation. These three categories include encyclopedic data, which provides definitions for terms, images, and relationships with other terms as well as information about the field to which the term belongs; administrative data, which is updated as data is entered; and grammatical data, which includes information about grammar, context, and collocations. Anylexic, TermWikiPro, SDL Multiterm, and Termbases are a few examples of terminology management systems (Austermuhl, 2014, p. 134).

Originally offering only a few definitions, electronic dictionaries today define terms under a wide range of categories, including engineering, landscaping, education, construction, health, marine, law, and many more. This has greatly simplified the translator's task. Because they provide various word use patterns based on many disciplines, today's digital dictionaries may also be

incorporated in term banks and terminology management systems. Because translators may now recommend additions to dictionaries, these dictionaries can be included into terminology management systems. It can be claimed that terminology management systems, translation memories, term banks, and machine translation programs all have versions that are available for sharing with other users and that these components all function together within machine translation programs.

### **Machine Translation**

The term "machine translation" refers to computer programs that generate translations between languages, either with or without human assistance. The goal of machine translation is complete translation automation (Kenny, 2018, pp. 428-445). Among the instruments introduced to the translation practice and translation studies discipline in the 20th century are machine translation systems, which were initially developed with the goal of guaranteeing high-quality texts to be obtained through translation in the target language. These systems are particularly utilized in the fields of technical text translation and localization (Hutchins, 1992, pp. 147-158).

Examining the development path reveals that the effects of the Cold War necessitated machine translations in the English-Russian language pair towards the end of the 1940s. Machine translation was mostly used for military applications during this time (Yves, 2019, pp. 344-361). It is widely recognized that machine translation is not limited to military applications; it can also successfully translate documents that need word-oriented translation, such as technical and commercial writings.

In its current form, machine translation seeks to convey a text's core concept; without human assistance, it would not be able to attain the precise meaning. Even though machine translation offers comprehensive translation across languages in close language groups, there are situations in which a successful translation may not be achieved regardless of how similar the languages are. Machine translation software is known to translate words rather than concepts. It is well established that machine translation does better at translating basic descriptive or definitional texts than argumentative or idiomatic ones, regardless of the language group to which they belong (O'Hagan & Ashworth, 2002, pp. 38-44). It has been observed that a large number of private sector institutions and companies in need of translators offer job openings for staff members familiar with computer-aided translation software and machine translation. It is now feasible to translate documents with countless words in a single day thanks to machine translation software.

In addition to saving time, machine translation has the benefit of lower translation costs because it eliminates or only minimally requires direct human interaction, with the sole expense being the cost of these tools and software. However, to guarantee this quality, human intervention is still necessary because machine translations differ in the target text's translation quality (Chan, 2018, 25-59).



Machine translation, which initially supported word-based translation, now offers the ability to translate texts prepared in a variety of ways, including handwriting and virtual keyboard translation, voice translation, bilingual chat translation, web page and document translation, written text translation into the target language, and text in images into text. Along with all of this, they also provide services like the ability to save translations and accept translation ideas. Previously, they only gave their consumers a small number of translation options, but now they provide them with more alternatives by suggesting a variety of words and even phrases (O'Brien et al., 2018, pp. 237-262).

Nevertheless, it might be argued that some academics, translators, and translation students view machine translation as a professional danger despite its benefits. These workers worry that machine translation programs, one of the computer-aided translation technologies that keeps becoming better every day, may take their place in the industry and possibly even replace them. However, machine translation tools could still be a good option for translation education courses. Due to the growing demand for translation services in the industry, a translator must be quick and practical in order to do a large amount of work in a short period of time. Like all the abilities that must be learned in translation education, using machine translation can help you fulfill market expectations and finish more translations.

### ***Systems for Translation Management***

The process of translating text across languages is automated by translation management systems. By automating important processes throughout the translation process, these systems seek to optimize overall content and reduce the need for a human touch. Both businesses with internal translation capabilities and translation service providers utilize these tools. Translation management systems may extend over the whole lifespan of a translated text and help with marketing or product localization to tailor global content to particular locations. In addition to serving as a central point for businesses to monitor and work together on translations, translation management systems frequently interact with computer-aided translation and machine translation software. They can also be integrated with corporate content management solutions. Since employing a translation management system to translate websites or products is one of the best choices to make, they are crucial for handling various translation jobs.

A translation management system has to include a few fundamental features in order for data to be represented and reused in a meaningful way. The first step is to import the text that needs to be translated. This is done as part of a basic project setup when parameters like the language and original file format are given. The first draft of the text is taken out of the document to be translated in the internal editor during import. The material is automatically separated into sections using section-end delimiters to make editing easier. The foundation for the

section's meaningful storage as a translation unit in both the source and destination languages is text segmentation. The translation unit is saved in the translation memory for future usage and always consists of a language pair i.e. source and destination languages. Any translation memory that already exists is immediately used as the foundation for project analysis for any new translation project. In this manner, the project manager or translator may immediately determine whether any portion of the new material has already been translated in a manner identical to or comparable to an earlier translation before the real translation process starts.

The translation units in the translation memory may serve as the foundation for potential time and money savings for every new translation. Time and money planning is made easy by automatic analysis that indicates the amount of material that has to be retranslated. To sum up, translation management systems offer quality assurance, alignment, project management, translation memory, terminology databases, and translation editors (Shuttleworth, 2014, pp. 678-691).

Automating translation processes, enabling the use of computer-aided or machine translation tools, centralizing multilingual content, enabling administrators to target particular languages, regions, or audiences, providing tools for communication between translators, project managers, and other staff members, and analyzing the quality and efficacy of translations are all requirements for a product to be classified as a translation management system. Transifex, Memsource, Phrase TMS, Localize, Lokalise, Smartling, Systran, PhraseApp, memoQ, and POEditor are a few examples of widely used translation management systems (Rothwell et al., 2023, p. 183).

### **Conclusion**

The use of technology in translation has become essential in today's interconnected, fast-paced society. Both students and professional translators are now required to integrate cutting-edge technical tools into their workflows in addition to their language competence. The necessity for translators to embrace and become proficient in technologies like translation memory, terminology databases, and machine translation systems is highlighted by the demand for quick and precise translations across various fields, including politics, business, health, and education. This integration ensures that translations meet the constantly increasing standards for reliability, precision, and speed. A key component of contemporary translation practice is technological proficiency, as emphasized by models such as PACTE. This involves not only mastering tools specific to translation but also understanding the broader digital and technological environments in which translations are produced. Familiarity with online document management platforms, word editing software, and spell-checking programs equips translators to bridge the gap between human expertise and machine efficiency, positioning them to handle the ever-evolving demands of the profession.

Understanding and using electronic corpora is another crucial aspect of this competency. The ability to generate and utilize corpora, combined with proficiency in corpus-related technologies, enables translators to tackle challenging translation issues more effectively. This approach, when paired with procedural knowledge of digital tools, enhances the overall quality of their work and strengthens their problem-solving capabilities. By adopting these innovative techniques, translators can maintain their relevance in a field that increasingly prioritizes technological proficiency. The distinction between computer-aided translation technologies and translation-assisting tools further illustrates the extent of technology integration in translation. Programs such as word processors, optical readers, and document digitization software support the initial and supplemental phases of translation, while specialized tools like Wordfast, MemoQ, and SDL Trados directly enhance the translation process by improving efficiency and streamlining workflows. Together, these technologies provide translators with a comprehensive toolkit for modern translation tasks.

However, the development of technology does not diminish the importance of human translators. While tools like machine translation systems are often helpful, they frequently lack the contextual awareness and cultural sensitivity required for nuanced communication. Translators' ability to edit, verify, and refine machine outputs ensures that the final product meets the high standards for accuracy and cultural appropriateness demanded in professional settings. This collaborative partnership between technology and human expertise underscores the enduring value of human knowledge in an increasingly automated world.

Ultimately, the integration of technological proficiency into the translation field reflects the profession's evolution in response to contemporary challenges. By adopting these tools, translators not only enhance their productivity but also reaffirm their role as essential mediators in a globalized society. Translators continue to bridge linguistic, cultural, and now technological divides, fostering understanding and connection across nations. In doing so, they ensure that the art and science of translation remain as vital and relevant as ever.

### Genişletilmiş Öz

Geleneksel olarak dilsel bir disiplin olarak kabul edilen çeviri, teknolojik gelişmelerin hızlı temposuyla şekillenen çok yönlü ve disiplinler arası bir mesleğe dönüşmüştür. Tarihsel olarak, çevirmenler farklı topluluklar arasında iletişimi kolaylaştırmak için dilsel ve kültürel uçurumları kapatan kritik araçlar olarak hizmet etmişlerdir. Çağdaş bağlamlarda, çeviri çalışmaları alanı teknoloji, iletişim çalışmaları ve kültürel analiz gibi disiplinlerden gelen teorileri entegre ederek önemli ölçüde genişlemiştir. Bu entegrasyon, çevirmenlerin hem çeviri uygulamasını hem

de eğitimini etkileyen teknoloji odaklı değişikliklere uyum sağlamaları için artan gerekliliği yansıtmaktadır.

Mevcut çalışma, çeviri odaklı teknolojik yeterlilik kavramını ele alarak teknolojik araçların çeviri süreçlerinde üretkenliği, doğruluğu ve verimliliği nasıl artırdığını vurgulamaktadır. Dijital medyanın ortaya çıkışı ve Facebook, Instagram, WhatsApp, YouTube ve diğer etkileşimli uygulamalar gibi platformlar da dahil olmak üzere Web 2.0 teknolojilerinin yaygınlaşması, iletişim yöntemlerini kökten değiştirmiştir. Bu yenilikler anında bilgi paylaşımını mümkün kılarak çevirmenlere karmaşık çeviri zorluklarını ele almak için yeni araçlar ve çözümler sunmaktadır. Mobil uygulamalar, yazılım çözümleri ve akıllı cihazlar artık etkileşimli ve dinamik çeviri seçenekleri sunarak mesleği daha da devrim niteliğinde değiştirmekte.

Bu teknolojik gelişmelere rağmen, yapay zekâ destekli makine çeviri sistemleri temelde sınırlı kalmaya devam ediyor. Erişilebilirliği artırıp iş akışlarını düzene sokarken, bu sistemler duygusal zekadan ve karmaşık ve bağlam duyarlı metinleri yorumlamak için gereken nüanslı anlayıştan yoksundur. Bu eksiklik, uzmanlıkları yüksek kaliteli, kültürel olarak uygun çevirilerin üretilmesini sağlayan insan çevirmenlerin sürekli önemini vurgular. İnsan çevirmenler, makine tarafından üretilen çıktıları gözden geçirme ve iyileştirmeyi içeren rolleri giderek daha fazla üstleniyor ve bu da çeviri sürecinde gelişmiş teknolojik yeterlilik ihtiyacını ortaya koyuyor.

Teknolojiye olan artan bağımlılık, çevirmenlerin dijital araçları etkili bir şekilde yönetmek için çeşitli beceriler edinmesini gerektiriyor. Bu beceriler arasında çeviri yazılımına aşinalık, terminoloji veri tabanları bilgisi, çeviri belleklerini kullanma yeteneği ve yazım denetimi ve dil bilgisi araçlarında yeterlilik yer alıyor. Ayrıca, çevirmenler, etkili ve sorumlu bir şekilde kullanıldığından emin olmak için makine çevirisinin ve diğer otomatik sistemlerin yetenekleri ve sınırlamaları hakkında bilgi sahibi olmalıdır. Küreselleşmiş bir dünyanın talepleri geliştikçe, çevirmenlerin yeterlilikleri de gelişmelidir. Bu makale, çevirmenleri dijital çağda hayati arabulucular olarak konumlandırarak, hızla değişen teknolojiler karşısında sürekli beceri geliştirme ve uyum sağlamayı savunmaktadır. Eğitim programları ve müfredatları, bu yeterlilikleri içermeli ve gelecekteki çevirmenlerin hem modern çeviri ortamlarının sunduğu zorlukların hem de fırsatların üstesinden gelebilecek şekilde donatılmasını sağlamalıdır.

Sonuç olarak, insan unsuru çeviride yeri doldurulamaz olmaya devam etmektedir. Çevirmenler, hiçbir makinenin kopyalayamayacağı bir kültürel içgörü, bağlamsal anlayış ve duygusal zekâ derinliği getirir. Çevirmenler, bu benzersiz insan niteliklerini teknolojik yeterlilikle birleştirerek, en yüksek kalite, özgünlük ve kültürel uygunluk standartlarını karşılayan işler üretebilirler. Bu çalışma, nüanslı ve bağlamsal açıdan hassas çeviriler sunmada insan çevirmenlerin vazgeçilmez rolünü yeniden teyit etmekte ve dijital çağda çeviri mesleğinin önemini ve mükemmelliğini sürdürmede sürekli mesleki gelişimin kritik önemini vurgulamaktadır.

## References

- Albir, A. H., Beeby, A., Fernández, M., Fox, O., KUZNIK, A., Serra, W. N., ... & Wimmer, S. (2011). Results of the validation of the PACTE translation competence model: Translation project and dynamic translation index. In *Cognitive explorations of translation* (pp. 30-53).
- Austermuhl, F. (2014). *Electronic tools for translators*. London: Routledge. <https://doi.org/10.4324/9781315760353>
- Baker, M. (1995). Corpora in translation studies: An overview and some suggestions for future research. *Target. International Journal of Translation Studies*, 7(2), 223-243.
- Bassnett, S. (2013). *Translation studies*. Routledge.
- Bowker, L. (2002). *Computer-aided translation technology: A practical introduction*. University of Ottawa Press.
- Bowker, L., & Fisher, D. (2010). Computer-aided translation. *Handbook of translation studies*, 1, 60-65.
- Candel-Mora, M. Á. (2017). Criteria for the integration of term banks in the professional translation environment. *Sendebarr*, 28, 243-260.
- Chan, S. W. (Ed.). (2018). *The human factor in machine translation*. Routledge.
- Cronin, M. (2013). *Translation and globalization*. Routledge.
- Daems J, Vandepitte S, Hartsuiker RJ and Macken L (2017). Identifying the Machine Translation Error Types with the Greatest Impact on Post-editing Effort. *Front. Psychol.* 8, 1282. doi: 10.3389/fpsyg.2017.01282
- Froeliger, N., Krause, A., & Salmi, L. (2023). Institutional translation–EMT Competence Framework and beyond. *Institutional Translator Training, Routledge*, 13-29.
- Gouadec, D. (2007). *Translation As A Profession*, Amsterdam/Philadelphia: John
- Heletka, M. L. (2022). The concept of modern electronic translation dictionaries. *Publishing House "Baltija Publishing"*.
- Heyn, M. (2016). Translation memories: Insights and prospects. In *Unity in diversity* (pp. 123-136). Routledge.
- Hu, K. (2016). *Introducing corpus-based translation studies*. Berlin: Springer.
- Hutchins, J. & Somers, H. (1992). *An Introduction to Machine Translation*, London: Academic Pres Ltd.
- Kabát, M., & Koscelníková, M. (2022). Localization and Its Place in Translation Studies. *L10N Journal*, 1(1), 4-26.
- Kenny, D. (2018). Machine translation. In *The Routledge handbook of translation and philosophy* (pp. 428-445). Routledge.
- Kiraly, D. (2014). *A social constructivist approach to translator education: Empowerment from theory to practice*. Routledge.
- Koponen, M. (2016). Is machine translation post-editing worth the effort? A survey of research into post-editing and effort. *The Journal of Specialised Translation*, 25(2), 131-148.
- Krüger, R. (2022). Using Jupyter notebooks as didactic instruments in translation technology teaching. *The Interpreter and Translator Trainer*, 16(4), 503-523.
- Nagrama, N. D. C., Lingating, M. L. D., Calleno, J. T., Rato, R. K. A., Catungal, M. L. P., & Encarnacion, P. C. (2024). Web-based Document Management System. *International Journal*, 13(3).
- Negri, M., Turchi, M., Bertoldi, N., & Federico, M. (2018). Online neural automatic post-editing for neural machine translation. In *Proceedings of the Fifth Italian Conference on Computational Linguistics (CLiC-it 2018)*.
- O'Brien, S., Simard, M., & Goulet, M. J. (2018). Machine translation and self-post-editing for academic writing support: Quality explorations. *Translation quality assessment: From principles to practice*, 237-262.
- O'Hagan, M., & Ashworth, D. (2002). *Translation-mediated communication in a digital world: Facing the challenges of globalization and localization* (Vol. 23). Multilingual Matters.
- O'Hagan, M. (Ed.). (2019). *The Routledge handbook of translation and technology*. Taylor & Francis.
- O'Neill, E. M. (2019). Training students to use online translators and dictionaries: The impact on second language writing scores. *International Journal of Research Studies in Language Learning*, 8(2), 47-65.
- PACTE. (2017). *PACTE translation competence model: A holistic, dynamic model of translation competence*. In A. Hurtado Albir (Ed.), *Researching translation competence by PACTE group* (pp. 35-42). Amsterdam/Philadelphia: John Benjamins Publishing Co. <https://doi.org/10.1075/btl.127.02pac>
- Peris, Á, Domingo, M., & Casacuberta, F. (2017). Interactive neural machine translation. *Computer Speech & Language*, 45, 201-220.
- Pym, A. (2011). What technology does to translating. *Translation & Interpreting: The International Journal of Translation and Interpreting Research*, 3(1), 1-9.
- Pym, A. (2023). *Exploring translation theories*. Third edition. New York: Routledge.
- Ramos, S., & del Mar, M. (2016). Community healthcare translator training and ad hoc corpora. *Current trends in translation teaching and learning*, 3, 119-139.
- Reinke, U. (2018). State of the art in translation memory technology. *Language Technologies for a Multilingual Europe; Rehm, G., Stein, D., Sasaki, F., Witt, A., Eds*, 55-84.
- Rodríguez-Inés, P., & Albir, A. H. (2012). Assessing competence in using electronic corpora in translator training. *Global Trends in Translator and Interpreter Training: Mediation and Culture*, 96-126.
- Rothwell, A., Moorkens, J., Fernández-Parra, M., Drugan, J., & Austermuehl, F. (2023). *Translation tools and technologies*. Routledge.
- Shuttleworth, M. (2014). Translation management systems. In *Routledge encyclopedia of translation technology* (pp. 678-691). Routledge.
- Sikora, I. (2014). The need for CAT training within translator training programmes. *TRAlinea Special Issue: Challenges in Translation Pedagogy*, 1-6.
- Sin-wai, C. (2014). The development of translation technology 1967–2013. In *Routledge Encyclopedia of Translation Technology* (pp. 2-31). Routledge.
- Stevenson, A. (2010). *Oxford dictionary of English*. Oxford University Press.
- Vu, T. T., & Haffari, R. (2018). Automatic post-editing of machine translation: A neural programmer-interpreter approach. In *Empirical Methods in Natural Language Processing 2018* (pp. 3048-3053). Association for Computational Linguistics (ACL).
- Wright, S. E. (2019). Standards for the language, translation and localization industry. In *The Routledge handbook of translation and technology* (pp. 21-44). Routledge.
- Yves, G. (2019). Impact of technology on Translation and Translation Studies. *Russian Journal of Linguistics*, 23(2), 344-361.