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APPLICATION OF AUTOMATED TRANSLATION SYSTEMS USING ARTIFICIAL INTELLIGENCE TOOLS FOR UNIVERSITY STUDENTS' TRAINING IN WRITTEN TRANSLATION

APLICAÇÃO DE SISTEMAS DE TRADUÇÃO AUTOMÁTICA UTILIZANDO FERRAMENTAS DE INTELIGÊNCIA ARTIFICIAL PARA A FORMAÇÃO DE ESTUDANTES UNIVERSITÁRIOS EM TRADUÇÃO ESCRITA

APLICACIÓN DE SISTEMAS DE TRADUCCIÓN AUTOMÁTICA MEDIANTE HERRAMIENTAS DE INTELIGENCIA ARTIFICIAL PARA LA FORMACIÓN DE ESTUDIANTES UNIVERSITARIOS EN TRADUCCIÓN ESCRITA

Aliya ABDRAKHMANOVA[1]
a.a.abdrakhmanova@mymail.academy
Marina VINNIKOVA[2]
m.n.vinnikova@mymail.academy
Elena SEMUSHINA[3]
e.y.semushina@mymail.academy
Guzel FASSAKHOVA[4]
g.r.fassakhova@mymail.academy
Liliya ISLAMOVA[5]
l.r.islamova@mymail.academy
Elena SLEPNEVA[6]
e.v.slepneva@mymail.academy

[1] Kazan Federal University, Kazan – Russia. Candidate of Sciences, Associate Professor at Department of Practice and Theory of Translation.

[2] Kazan Federal University, Kazan – Russia. Candidate of Sciences, Associate Professor at Department of Practice and Theory of Translation.

[3] Kazan Federal University, Kazan – Russia. Candidate of Sciences, Associate Professor at Department of Practice and Theory of Translation.

[4] Kazan State Agrarian University, Kazan – Russia. Candidate of Sciences, Associate Professor at Department of Foreign Languages.

[5] Kazan State Agrarian University, Kazan – Russia. Senior Teacher at the Department of Foreign Languages.

[6] Kazan National Research Technological University, Kazan – Russia. Candidate of Sciences, Associate Professor at Department of Service Technologies.

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ABSTRACT: This article examines the features and prospects of using artificial intelligence (AI) tools in written translation and translation training in higher education institutions. The study aims to provide a theoretical and practical justification for modern trends in AI technology development within translation activities. The article identifies the prerequisites for AI technology application and presents a comparative analysis of AI tools in written translation. Through a comparative study, the characteristics of automated translation systems (CAT) in written translation—namely Trados, SmartCAT, and MemoQ—were described. The study analyzed CAT system indicators

such as functional capabilities, software availability for installation, ease of use for beginners or student translators, and the clarity of the user interface. The comparative analysis of CAT systems like Trados, SmartCAT, and MemoQ demonstrated that student translators should use these tools in written translation only after mastering the basic skills of more user-friendly programs, particularly the cloud-based SmartCAT system. SmartCAT, while matching Trados Studio and MemoQ in functionality, offers an intuitive learning experience, as it includes a built-in translation training system—an important advantage for beginner translators. The article also identifies the challenges of mastering CAT translation systems and outlines their future development prospects.

KEYWORDS: Machine translation (MT). Automated translation (AT). CAT system. Artificial intelligence (AI). Translation training.

RESUMO: *Este artigo analisa as caraterísticas e as perspectivas da utilização de ferramentas de inteligência artificial (IA) na tradução escrita e na formação em tradução em instituições de ensino superior. O estudo visa fornecer uma justificação teórica e prática para as tendências modernas no desenvolvimento da tecnologia de IA nas atividades de tradução. O artigo identifica os pré-requisitos para a aplicação da tecnologia de IA e apresenta uma análise comparativa das ferramentas de IA na tradução escrita. Através de um estudo comparativo, foram descritas as caraterísticas dos sistemas de tradução automática (CAT) na tradução escrita, nomeadamente o Trados, o SmartCAT e o MemoQ. O estudo analisou os indicadores dos sistemas CAT, tais como as capacidades funcionais, a disponibilidade de software para instalação, a facilidade de utilização para tradutores principiantes ou estudantes e a clareza da interface do utilizador. A análise comparativa de sistemas CAT, como o Trados, o SmartCAT e o MemoQ, demonstrou que os estudantes de tradução devem utilizar essas ferramentas na tradução escrita apenas depois de dominarem as competências básicas de programas mais fáceis de utilizar, particularmente o sistema SmartCAT baseado na nuvem. O SmartCAT, embora iguale o Trados Studio e o MemoQ em termos de funcionalidade, oferece uma experiência de aprendizagem intuitiva, uma vez que inclui um sistema de treino de tradução incorporado — uma vantagem importante para tradutores principiantes. O artigo também identifica os desafios de dominar os sistemas de tradução CAT e descreve as suas perspectivas de desenvolvimento futuro.*

PALAVRAS-CHAVE: *Tradução automática (MT). Tradução automatizada (AT). Sistema CAT. Inteligência artificial (IA). Formação em tradução.*

RESUMEN: *Este artículo examina las características y perspectivas del uso de herramientas de inteligencia artificial (IA) en la traducción escrita y la formación en traducción en instituciones de enseñanza superior. El estudio pretende ofrecer una justificación teórica y práctica de las tendencias modernas en el desarrollo de la tecnología de IA dentro de las actividades de traducción. El artículo identifica los requisitos previos para la aplicación de la tecnología de IA y presenta un análisis comparativo de las herramientas de IA en la traducción escrita. Mediante un estudio comparativo, se describen las características de los sistemas de traducción automática (TAO) en la traducción escrita: Trados, SmartCAT y MemoQ. El estudio analizó indicadores de los sistemas TAO como las capacidades funcionales, la disponibilidad del software para su instalación, la facilidad de uso para principiantes o estudiantes de traducción y la claridad de la interfaz de usuario.*

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El análisis comparativo de sistemas TAO como Trados, SmartCAT y MemoQ demostró que los estudiantes de traducción deberían utilizar estas herramientas en la traducción escrita sólo después de dominar las habilidades básicas de programas más fáciles de usar, en particular el sistema SmartCAT basado en la nube. SmartCAT, aunque iguala en funcionalidad a Trados Studio y MemoQ, ofrece una experiencia de aprendizaje intuitiva, ya que incluye un sistema de formación en traducción integrado, una ventaja importante para los traductores principiantes. El artículo también identifica los retos que plantea el dominio de los sistemas de traducción asistida por ordenador y esboza sus perspectivas de desarrollo futuro.

PALABRAS CLAVE: *Traducción automática (MT). Traducción automatizada (AT). Sistema CAT. Inteligencia artificial (IA). Formación en traducción.*

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INTRODUCTION

Globalization (Pankratova, 2023) and the rapid pace of scientific and technological progress in the modern world have led to the automation of many areas of human activity (Besschetnova et al., 2024), including language and translation industries (Safiullin et al., 2024). The 21st century is closely linked to the active development of GILT technologies (Globalization, Internationalization, Localization, Translation) (Vandepitte & Lefever, 2018). In particular, computer translation technologies are advancing, with increasing use of text editors, online machine translation (MT) systems, spell checkers, electronic dictionaries, and other software to facilitate and improve translation efficiency (Levit, 2024; Rarenko, 2021). All these auxiliary tools are connected to the advancement of artificial intelligence (AI) in the translation industry (Appakova-Shogina et al., 2024).

The key concepts related to AI in translation include MT and automated translation (AT). To avoid terminological ambiguity, it is important to emphasize that MT refers strictly to fully automated systems such as Google Translate, while AT may involve varying degrees of human–computer interaction. CAT tools, by contrast, function as professional environments where human translators use AI-based support systems to improve quality and efficiency. These distinctions will be consistently maintained throughout the text.

The latter is increasingly gaining recognition as a professional translation tool and is becoming an essential skill for modern translators. Consequently, the role of the translator and the essence of the profession itself are evolving. Only translators who complement their skills with technical knowledge and translation tools—and who can utilize AI to optimize and enhance their work efficiency—will be able to meet the challenges of the modern translation industry and labor market demands (Gudkov, 2022).

The relevance of this study is determined by the fact that, despite the growing demand for cutting-edge computer translation technologies, the prospects and opportunities for translators to use AT systems remain underexplored. Additionally, the issue of improving translators' technical competence is still in development. Today, translation graduates are often required to independently master these technologies, which lowers the quality of translation education.

LITERATURE REVIEW

In this article, the following terms will be used consistently: MT—fully automatic translation performed by a program; AT—computer support provided to a human translator during the process; and Computer-Assisted Translation (CAT) tools—professional software such as Trados, MemoQ, or SmartCAT that integrate AT and Translation Memory. These distinctions will be maintained throughout the text.

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The concept of artificial intelligence (AI) generally refers to a computational system's ability to perform tasks characteristic of human intelligence, such as logical reasoning and learning (Garbovsky & Kostikova, 2019; Sultonova et al., 2023). According to El-Rahman et al. (2018) and Kubrak (2023), AI in the field of translation includes the phenomenon of AT. In English terminology, different terms are used to describe this phenomenon, including "machine translation" (fully automatic translation) (Brynjolfsson et al., 2019) and "machine-aided translation" or "machine-assisted translation" (MAT) (automated translation) (Karpińska, 2017).

According to Litwinowa et al. (2022), it is advisable to distinguish between MT and AT. The term "automated translation" refers to a type of translation in which a computer program assists a human in translating texts, whereas in the case of machine translation, the entire process is carried out by the program with minimal human involvement (Xu, 2020). AT includes the following forms of interaction:

- Partially automated translation: for example, the use of digital dictionaries by a human translator;
- Division of labor systems: the computer is trained to translate only strictly structured phrases (which do not require further human editing), while all other text that does not fit into the predefined scheme is translated by a human (Han, 2020).

One of the most widely used and popular AI tools in written translation is computer-assisted translation (CAT) systems, or CAT tools (from the English "Computer-Assisted Translation" or "Computer-Aided Translation") (Çetiner, 2018).

First and foremost, it is important to note that machine translation is only a specific part of automated translation and constitutes just one of the capabilities of CAT tools (Arcan et al., 2017). The primary function of a CAT tool is to reduce translation time by incorporating machine translation, inserting pre-translated segments from translation memory, performing automatic translation based on glossaries, conducting automatic quality checks, and utilizing other automation tools (Parsa, 2021). CAT tools enable spell and grammar checking, terminology management, the use of specialized dictionaries, text indexing, access to terminology databases, merging translations with source texts, project and translation memory management, and overall translation process automation (Kashkin & Haladay, 2024).

CAT tools can "learn," provided a large dataset of source texts and their corresponding translations is created and loaded into a high-performance multiprocessor computing system. When translating new texts, the system selects similar segments from the dataset that can be used to generate the final translation (Alfuraih, 2020).

To date, many AT and MT systems, including CAT programs, have been developed based on this principle. The primary goal of CAT programs is to simplify the translation process for repetitive documents. Unlike MT systems, in CAT-assisted translation, a human translator must be actively involved, performing their role in full. The entire translation process is conducted

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by a human, while the software only assists in generating the final text more efficiently or with improved quality (Ukolova & Afanasyev, 2023). The main function of a CAT tool is to store translated text segments and reuse them in future translations. This technology is called Translation Memory (TM)—a database that retains previous translations for potential reuse and allows for quick content searches (Thawabteh, 2018).

The main purpose of TM tools is to store sentence pairs in a translation database. The working principle of TM tools is mainly based on integration with office applications such as Microsoft Word. Some TM tools have built-in text editors, with interfaces similar to those of standard word processors commonly used by translators. A modern TM tool is a sophisticated computer system comprising multiple programs, each serving a specific function (Juan & Yahaya, 2019).

Considering the use of CAT programs in professional translation, let us examine the benefits these AI tools offer to translators.

First and foremost, proficiency in CAT tools has become a mandatory requirement for translators participating in large-scale translation projects. As a result, translation agencies, bureaus, and direct clients increasingly demand a certain level of competence in automated translation tools. In some cases, even for small documents, texts, or projects, translation via CAT programs is explicitly required (Osipov, 2023).

Furthermore, specialized translation fields (e.g., medical or legal translation) involve recurring terminology and standardized expressions. When translating manually, a translator must repeatedly translate identical elements, whereas CAT tools optimize the process using TM technology, significantly reducing the time required for translation (Zhilkibaeva et al., 2024). According to PROMT, the use of CAT technologies can increase translation efficiency by up to 80% (Kolin et al., 2021).

The ability of CAT programs to create and continuously update a personalized TM database further enhances their value compared to other translation technologies, including MT systems (Bowker, 2019).

However, researchers note that while CAT systems are highly effective for technical texts, they offer little benefit in literary translation. This is due to the nature of literary texts, which rarely contain standardized expressions and rely heavily on context, authorial style, sociocultural factors, and pragmatic nuances (Karlgren et al., 2020). Nevertheless, apart from standard CAT programs, there are specialized tools designed specifically for localization of software, websites, video games, etc. These advanced automated translation tools possess greater capabilities and have the potential for further development, including the creation of TM databases that may one day be applicable in literary translation.

The aim of this study is to provide a theoretical and practical justification for trends in AI technology development in written translation. To achieve this objective, the study sets out to:

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- Identify the prerequisites for AI technology adoption in translation;
- Conduct a comparative analysis of CAT systems;
- Determine the features of CAT systems in written translation training;
- Identify challenges in mastering CAT systems and outline their future development prospects.

The educational dimension of this study lies in demonstrating how AI-based translation tools can be integrated into translator training, contributing to modernizing curricula and equipping students with competencies required in today's digital labor market.

RESEARCH METHODS

This study employs a comprehensive methodological approach, combining the comparative-contrastive method, contextual-interpretative analysis, functional analysis, and translation analysis, all of which are aligned with the formulated research objectives and correspond to the parameters of the studied subject.

The research material consists of the features of CAT translation systems such as Trados, SmartCAT, and MemoQ, as these are among the most widely used tools among professional translators.

Trados is an AT system and one of the global leaders in TM systems. The Trados system operates entirely based on the TM concept, meaning it detects segments in the translated text that already have corresponding translations stored in the database, thereby reducing the translator's workload.

SmartCAT is a cloud-based platform that, unlike Trados, cannot be installed on a computer, as it functions as an online service rather than a standalone software package.

Another AI-powered AT tool is the MemoQ software suite, which integrates translation memory, terminology management, machine translation, and reference management across desktop, client/server, and web applications.

To achieve the study's objective, an attempt was made to conduct a comparative analysis of AI tools in 2024–2025. For this purpose, an expert survey method was employed. To collect the necessary data, the study employed an expert survey. Invitations were sent by email to 41 specialists who met the selection requirement of having published at least three papers on the topic in peer-reviewed journals. Of these, 38 experts agreed to participate, and their responses were obtained through electronic correspondence.

When discussing the study results, inductive reasoning was applied, allowing for general conclusions to be drawn based on detailed observations and analysis. This approach was crucial in formulating assumptions regarding translation challenges using CAT systems, as well as recommendations for their use in professional translation and the future prospects of AI tools in translation.

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RESEARCH RESULTS

When conducting a comparative analysis of CAT system capabilities for written translation, it is important to note that using Trados Studio requires not only purchasing a relatively expensive license but also going through a complex installation process that must meet specific technical requirements. This makes Trados Studio less accessible to individual translators and places it among CAT programs best suited for translation companies or highly professional translators who require its extensive functionality.

The expert survey results indicate that translation in Trados Studio is quite complex for beginners. To create a new project, the user must select the source and target languages, upload the document or text for translation, and create a new TM. If a TM file is provided by a project manager or client, the translator can import it. Similarly, the user must choose a Termbase glossary, which can be added if a pre-existing glossary is available. The translated text is then stored in the TM.

Trados Studio offers several advantages, including seamless integration with MS Word, allowing users to start working within an hour or two after installation, as well as a variety of additional components that significantly expand the software's functionality, such as MultiTerm and TagEditor. However, Trados Studio also presents disadvantages, primarily the complexity of installation and the initial learning curve. For this reason, Trados is considered a valuable tool for experienced CAT system users but may be too costly and difficult for student translators to master.

A significantly easier alternative in terms of installation is MemoQ, which also offers a 30-day free trial and is more affordable when purchasing a licensed version. MemoQ features an intuitive interface that requires fewer steps to complete a translation compared to Trados.

Translation in MemoQ begins with project creation, specifying translation memory and a termbase. When a project is created, MemoQ imports the content of the source documents into its workspace, allowing the final translation to be exported in the original format. The translation process itself takes place in a specialized text processor, structured as a bilingual table. During translation, MemoQ automatically searches the translation memory and termbase for relevant entries. Within a single project, multiple documents can be edited simultaneously, but working on multiple projects at once is not possible.

Overall, MemoQ offers nearly the same functionality as Trados Studio while being easier to learn and use, making it more suitable for student translators. However, it still requires installation and some effort from the translator to import translation memory.

In contrast, the cloud-based automated translation resource SmartCAT does not require installation. To use SmartCAT, a user must create an account on the platform, which can be used for freelance translation or on behalf of a translation company. The website is

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designed efficiently and intuitively, with built-in training materials and tips to assist new users in navigating its features.

The primary advantage of SmartCAT lies in its simplified approach to using glossaries and TM, as well as its free built-in training system. SmartCAT enables users to maintain up-to-date corporate glossaries and provides translators with accurate terminology. Additionally, SmartCAT incorporates machine translation (MT), offering suggested translations for text segments based on translation memory and glossary databases. The translator can either use the suggested translation, edit it, or, if necessary, translate the text manually.

To facilitate comparison, an analysis of the discussed CAT systems—Trados Studio, SmartCAT, and MemoQ—based on various criteria is presented in Table 1.

Experts emphasized that the steep learning curve of Trados was the most significant barrier for students (76% of respondents), while 68% highlighted SmartCAT's accessibility and integrated training materials as key advantages. MemoQ was noted by 55% for its balance between professional functionality and usability.

Table 1

Comparative evaluation of CAT systems (Trados Studio, SmartCAT, MemoQ) based on functionality, accessibility, and usability according to expert survey results

CAT-system	Comparison Criteria					
	Functional Capabilities		Program Accessibility for Installation and Use		Interface Usability	
	Level	Rank	Level	Rank	Level	Rank
Trados Studio	High	1	Low	3	Low	3
SmartCAT	Medium	2-3	High	1	High	1
MemoQ	Medium	2-3	Medium	2	Medium	2

Note. Own research; expert survey results; concordance coefficient W = 0.77 ($p < 0.01$), indicating strong agreement among expert opinions.

Based on these findings, it is advisable to include CAT tools in translation curricula through a progressive model. For instance, SmartCAT can be introduced during the first or second year of study via supervised lab sessions, followed by guided project-based assignments using MemoQ, and culminating in capstone or internship projects with Trados. Embedding these tools in syllabi not only enhances students' technical skills but also aligns academic training with real-world industry standards. Collaboration with translation agencies and inclusion of certification modules can further bridge the gap between training and employment.

According to the data in Table 1, Trados Studio has low ratings in terms of installation accessibility and interface usability. This program is recommended for professional and experienced translators who aim to enhance their skills and meet the requirements of companies that specifically demand proficiency in Trados. The medium-level functionality of SmartCAT and MemoQ is considered sufficient for high-quality translation. Since MemoQ also requires installation on a computer and lacks a built-in training and guidance system, it ranks at a

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medium level in terms of installation accessibility and interface usability. Many translators, according to one of the experts (Expert respondent A), either opt for self-learning through video tutorials and manuals or invest in paid training courses to master MemoQ.

Additional courses or self-study using external resources are not required in the case of SmartCAT, which also does not require installation on a computer. According to another expert (Expert respondent B), beginner translators find this AI-powered translation tool significantly easier to use. Therefore, within our study, we focus particularly on SmartCAT and its potential for training student translators in the application of AI technologies in professional translation. Accordingly, more complex CAT systems, such as Trados Studio, should ideally be introduced only after mastering simpler tools, particularly the cloud-based SmartCAT system.

It is also important to note that most modern CAT systems, including SmartCAT and MemoQ, are compatible with Trados files. Thus, the common requirement from translation agencies to "be proficient in Trados" does not necessarily mean that a translator must immediately master this specific software. In professional practice, a translator may receive a project with a Trados-formatted file but work with it in a different CAT system that they find more user-friendly. However, Trados may become essential when working in a networked environment, where a project is shared among multiple translators and editors.

DISCUSSION

When examining the features of CAT system usage in written translation, it is essential to consider the challenges translators face when using these AI-based tools. Although CAT systems are designed to streamline the translation process, they often require lengthy training, present technical difficulties during installation and use, and demand certain hardware specifications to function properly.

One significant drawback of CAT systems is their complexity in mastering the software. While modern AT systems do not require users to have programming or computational linguistics knowledge and typically feature user-friendly interfaces, the learning curve varies among individuals and depends on their prior experience with computer technology.

Modern CAT programs are equipped with comprehensive dictionaries and well-defined translation algorithms, but they often fail to grasp the overall meaning of a text, requiring manual adjustments to grammar and lexical structures. This is because AI-based translation tools lack intuition and the ability to comprehend meaning in context. At this stage, the translator or post-editor must intervene to refine the text.

Another crucial aspect is that machine and automated translation yield the best results when working with technical and official-business texts. In contrast, texts containing literary elements often exceed the capabilities of AI-based translation systems. Machines lack subtle linguistic sensitivity, fail to interpret figurative language and wordplay, and struggle with

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cultural and stylistic nuances. Even Translation Memory (TM) systems are ineffective in literary translation, as the same phrase may require a unique interpretation depending on its context, the author's style, and historical or cultural factors (Karlgren et al., 2020).

Therefore, CAT systems are not fully applicable to literary translation, where human intuition, expertise, and creativity are far more valuable than AI capabilities. Literary translation is a creative process that no machine, software, or AI system can effectively replicate.

The primary goal of CAT systems in translation is to optimize the translator's workflow, reduce translation time, ensure terminological consistency in long-term projects, and eliminate redundant translation work for technical and business texts, which constitute a significant portion of the translation industry. However, automated and machine translation cannot fully understand context or make decisions in ambiguous situations. In contrast, a professional translator can analyze the context and apply their expertise to produce an accurate and meaningful translation.

Researchers also emphasize that AI-assisted translation remains far from perfect, making post-editing and professional correction essential (Juan & Yahaya, 2019).

To summarize, the combination of AI-assisted translation and post-editing has become a competitive alternative to traditional translation workflows, following strategic recommendations developed by experts. The ongoing advancements in computational technologies reinforce the importance of effectively integrating AI tools into the translation industry. Consequently, the interaction between humans and AI in translation is expected to improve over time.

However, it is important to recognize that even the most advanced CAT tools cannot fully address the most complex challenge of translation: selecting the contextually appropriate equivalent. The quality of a translation depends on the style and subject matter of the source text, as well as the syntactic, grammatical, and lexical similarities between the languages involved. The more formalized the source text, the higher the accuracy of automated and machine translation. This is why technical and official-business texts demonstrate the best results when using AI-based translation tools.

In the context of exploring AI-driven translation technologies, it is also necessary to consider the future development prospects of CAT programs. At present, neural machine translation (NMT) combined with translation memory and terminology databases represents the minimum standard offered by AI-powered CAT tools. Developers of SDL (Trados), for example, avoid the term "post-editing" when referring to machine-translated content, preferring "reviewing" instead, as they claim their system's accuracy has reached 95%.

Regarding SmartCAT, which we identified as the most suitable CAT system for beginner translators and students, its developers plan to further integrate AI to enhance usability and efficiency. In the future, SmartCAT aims to match translators with projects suited to their

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expertise, eliminate manual tagging and number formatting corrections, and streamline invoice generation and payment tracking. Currently, up to 30% of a translator's working time is spent on administrative tasks, but AI-powered improvements in SmartCAT will help automate these processes (Çetiner, 2018).

Ultimately, CAT systems are already freeing translators from repetitive tasks, allowing them to focus on more complex and creative aspects of translation. In the near future, AI will further assist translators by handling technical and administrative tasks, allowing them to dedicate more time to linguistic and cultural aspects of translation.

For translation training, it is advisable to introduce CAT tools in a step-by-step manner: beginning with SmartCAT for its user-friendly and training-oriented environment, followed by MemoQ, and finally Trados Studio at an advanced stage. Embedding these tools in curricula through workshops, project-based learning, and collaboration with translation agencies would ensure students acquire both technical and critical competencies.

FINAL CONSIDERATIONS

The study of modern CAT programs has shown that automated translation (AT) is a translation method that utilizes computers to transfer texts from one natural language to another. AT systems help address communication barriers between speakers of different languages and enable specialists to translate multi-page documents with greater speed and accuracy.

The optimization of a translator's workflow can be achieved by reducing translation time, ensuring terminological consistency throughout long-term projects, and eliminating redundant translation efforts, particularly when working with technical and official-business texts.

This study analyzed the CAT systems Trados, SmartCAT, and MemoQ, as they are among the most widely used tools among translators. It was determined that Trados Studio, SmartCAT, and MemoQ are among the most popular and widely adopted AT systems, recommended for translators who seek to meet the demands of the modern translation industry.

A comparative analysis of CAT system capabilities in written translation revealed that student translators should begin by mastering simpler programs, particularly the cloud-based SmartCAT system. While SmartCAT offers similar functionality to other programs such as Trados Studio and MemoQ, it is easier to learn, more intuitive, and features a built-in translation training system.

The study also explored the challenges of using CAT systems, identifying that the primary drawbacks of AT are largely due to human factors. At the same time, machine translation systems, in their current state, do not yet pose a serious challenge to professional human translators. However, AT enables the most efficient collaboration between humans and machines, enhancing productivity while maintaining quality. Proficiency in CAT systems has

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become a mandatory requirement in the translation job market, and the demand for highly efficient translation specialists continues to grow.

From a practical standpoint, this study supports the development of structured modules and micro-credentials for CAT system proficiency. Universities could adopt a tiered model where students progress from user-friendly cloud-based tools to more complex desktop-based platforms. Moreover, translation instructors should receive training themselves to effectively facilitate such learning. Future research could focus on comparative studies of student performance across different CAT systems, as well as the cognitive and pedagogical impacts of AI-assisted translation in the classroom.

It was established that CAT systems, as AI tools, will continue to evolve and expand their capabilities in the future. AT technologies are expected to develop further, leading to even greater efficiency in translation workflows. Expanding translation databases and refining automation algorithms will improve the processing of texts from various stylistic categories. Additionally, advancements in programming and computational technology will further contribute to the enhancement of machine translation theory and practice.

The advantages of AT over traditional translation methods cannot be ignored in today's world. The rapid development and increasing adoption of AT systems make it essential to study and integrate these tools into translator training programs to ensure the effective development of translation education. The findings highlight not only technological aspects but also pedagogical implications, showing the need to embed CAT tools within translation education to prepare students for professional practice.

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