DESENVOLVIMENTO DA COMPETÊNCIA E CULTURA DA UTILIZAÇÃO DE FERRAMENTAS DE TRADUÇÃO AUTOMÁTICA EM FUTUROS TRADUTORES (A EXEMPLO DE DOMINAR O USO DE FERRAMENTAS GATOS)

DESARROLLO DE LA COMPETENCIA Y CULTURA DEL USO DE HERRAMIENTAS DE TRADUCCIÓN AUTOMÁTICA EN FUTUROS TRADUCTORES (SOBRE EL EJEMPLO DE DOMINAR EL USO DE HERRAMIENTAS CAT)

DEVELOPMENT OF THE COMPETENCY AND CULTURE OF USING AUTOMATIC TRANSLATION TOOLS IN FUTURE TRANSLATORS (ON THE EXAMPLE OF MASTERING THE USE OF CAT TOOLS)

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RESUMO: O estudo tem como objetivo explorar o aspecto do conteúdo do domínio das ferramentas CAT no sistema de treinamento de futuros tradutores.
O artigo analisa os fatores que garantem o domínio dos futuros tradutores nas ferramentas CAT. Com base em recomendações de especialistas e considerando estes aspectos, é proposto um curso especial "Tecnologias CAT em atividades de tradução" utilizando o sistema CAT Trados. As vantagens e funcionalidades do uso da tecnologia SDL Trados são identificadas.
Conclui-se que é necessário introduzir um curso especial na formação profissional de tradutores com o objetivo de assegurar o potencial necessário para o domínio das ferramentas CAT e ensinar-lhes os fundamentos do trabalho com estes programas, o que aumentaria a eficácia geral da formação e criaria um base para o desenvolvimento de profissionais competitivos no mercado de trabalho moderno.

PALAVRAS-CHAVE: programas CAT. Ferramentas CAT. Memória de tradução (TM). Gerenciamento de terminologia. Tradução automática. Avaliação da qualidade da tradução.

***RESUMEN**: El estudio tiene como objetivo explorar el aspecto del contenido del dominio de las herramientas TAO en el sistema de formación de los futuros traductores. El artículo analiza los factores que garantizan el dominio de las herramientas TAO por parte de los futuros traductores. A partir de las recomendaciones de expertos y teniendo en cuenta estos aspectos, se propone un curso especial "Tecnologías TAO en actividades de traducción" utilizando el sistema TAO Trados. Se identifican las ventajas y funcionalidades de utilizar la tecnología SDL Trados.*
Se concluye que existe la necesidad de introducir un curso especial en la formación profesional de traductores con el objetivo de asegurar el potencial necesario de dominar las herramientas TAO y enseñarles los conceptos básicos para trabajar con

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estos programas, lo que aumentaría la eficacia global de la formación y crearía un base para el desarrollo de profesionales competitivos en el mercado laboral moderno.

***PALABRAS CLAVE**: programas TAO. Herramientas TAO. Memoria de traducción (TM). Gestión terminológica. Traducción automática. Evaluación de la calidad de la traducción.*

***ABSTRACT**: The study aims to explore the content aspect of mastering CAT-tools in the system of future translators' training.*
The article analyzes the factors ensuring future translators' mastery of CAT tools. Based on expert recommendations and considering these aspects, a special course "CAT technologies in translation activities" using the CAT system Trados is proposed. The advantages and functionalities of using SDL Trados technology are identified.
It is concluded that there is a need to introduce a special course into the professional training of translators aimed at ensuring the necessary potential of mastering CAT tools and teaching them the basics of working with these programs which would increase the overall effectiveness of training and create a basis for the development of professionals competitive the modern labor market.

***KEYWORDS**: CAT programs. CAT tools. Translation memory (TM). Terminology management. Machine translation. Translation quality assessment.*

Introduction

The globalization processes currently taking place in many spheres of human activity require the provision of various forms of communication of its participants, first and foremost, the language form (Golubev et al., 2021). The goal lies in a deeper understanding of a range of aspects starting from the content of professional-production messages to the deeper essence of the political, economic, spiritual, cultural, ethnic, religious, and other characteristics of the representatives of different peoples and countries (Pekkanli, 2012). All of the above implies the need to ensure the translation of the growing language flows which shifts the focus of translators from the creative plane and individual activities to the translation industry (Doherty, 2016).

The translation industry, like any other, assumes the availability and development of appropriate means and technology on the one hand and, on the other hand, high qualification of specialists capable of fulfilling modern high-tech tasks by virtue of their mastery of a set of specialized knowledge and skills (Mokhov et al., 2021; Barashkina et al., 2021; Nikonova, Zalutskaya, 2021).

The main specificity of the modern translation market is translating large volumes of technical texts and other business documents that often contain a significant amount of repetitions in the shortest possible time (Olohan, 2011). Moreover, the client expects the formatting of the final document to correspond to the original as precisely as

possible while also meeting the standards adopted in the given country (Karpińska, 2017). New technologies, particularly automated translation, help translators to cope with such challenges (Azmetova et al., 2021; Pogrebinskaya et al., 2021).

Studies (Fan, Zhang, 2017; Baar, 2012) indicate that graduates of translation departments who are proficient in CAT programs have significant advantages when entering a high-tech environment (such as a modern translation agency equipped with these programs) which is an environment that is becoming increasingly prevalent today.

Modern ICT also poses new challenges for teachers of university departments of translation due to the need to introduce a new component into the content of professional training which requires making certain changes in the program itself, as well as selecting the necessary educational information with the subsequent construction of special training materials. All this, in its turn, calls for a considerable amount of research both at the theoretical (analysis of scientific sources) and practical level (experimental training).

The problem of using information technology in translation activities arose almost simultaneously with the emergence of computer technology. However, the issue of mastering CAT tools in the system of training for future translators remains a topical subject of research of many scientists, both theorists and practitioners.

Literature review

Research provides evidence (Pym, 2011; Bowker, Fisher, 2010) that automated translation systems are widely used in the translation industry both by large translation companies and by freelance translators. According to the calculations made by PROMT company, the use of CAT tools allows increasing the efficiency of translations up to 80% (Bowker, 2015).

The very term “automated translation” is broad and not quite precise as it encompasses a wide range of simple and complex instruments for translating documents and localizing software, as well as for managing translation projects (Zhang, E., Zhang, 2013; Han, 2020), in particular: translation memory systems (TM-tools); machine translation systems (MT-tools); electronic dictionaries; terminology databases and terminology management systems; full text and similarity search systems (concordance); parallel text processing systems (bitext); translation project management systems; word processors; spell and grammar checking systems; etc. Thus, CAT tools (Computer Aided Translation tools) are software systems that help humans translate

faster and improve the quality of their translations as well (Bundgaard, Christensen, Schjoldager, 2016).

The importance of mastering CAT systems is evidenced by the fact that translation courses in European and American universities necessarily include training in using CAT tools (Starlander, 2013) as higher education institutions strive to provide their students with the necessary and relevant professional skills (Song, Zhang, Wang, 2010). For example, T. Marchenkova and A. Kolobkova (2020) argue that today there is a need to reform the process of training future translators, primarily accounting for the need to teach machine translation and design an effective method of teaching translation.

Globally, active scientific work is aimed at developing a framework for the creation of training methods for these programs (Mafulah et al., 2018) and the development of such methods themselves (Liu, 2017). Numerous researchers engage in the development and implementation of training courses (Juan, Yahaya, 2019) and the methodological advancements in the educational process of training future translators (Zhang, Yang, 2012) that would ensure the development of appropriate competencies in the use of automated translation systems in translation activities.

Thus, linguists and methodologists point to the need to add the ability to use the latest information and computer technology for translation in one's translation activity to the list of competencies of future translators.

The training of translators in European and American universities necessarily includes studying the basics of working with modern automated translation systems, particularly CAT systems that allow future specialists to develop the professional skills of using information technology in the translation industry (Çetiner, 2018). Meanwhile, it should be noted that the issues of the use of such systems in the provision of translation services are included in the American ASTM F2575-14 standard (n.d.) and the European BS EN 15038:2006 standard (2015) regulating the conditions of implementation and quality assurance of translations.

However, the issues of developing the content of special courses that would account for the requirements to the mastery of CAT tools in the system of training future translators call for separate research.

The goal of the present study is to research the content aspect of mastering CAT tools in the system of training of future translators.

The study hypothesis suggests that there is a need to introduce a special course into the professional training of translators aimed at ensuring the necessary potential of mastering CAT tools and teaching them the basics of working with these programs which would increase the overall effectiveness of training and create a basis for the development of professionals competitive the modern labor market.

The study objectives:

1. to identify the factors ensuring future translators' mastery of CAT tools by means of an expert survey;

2. to propose the content of a special course "CAT technologies in translation activities".

The article consists of an introduction, a literature review, a research methods section, the study results section, their discussion, and a conclusion.

Methods

Study design

To test the proposed hypothesis, the study deploys a mixed study design based on the combination of requirements for data collection and analysis necessary to meet the study goal. The following methods are selected for data collection:

- analysis of scientific literature using theoretical methods (analysis, synthesis, comparison, synthesis) – to explore the current state of the studied problem, determine the functionality of CAT tools, and the advantages of using CAT technologies;

- expert survey method – to determine the factors ensuring future translators' mastery of CAT tools and the approximate content of the special course "CAT technologies in translation activities";

- ranking method – to determine the ranking of factors ensuring future translators' mastery of CAT tools according to the number of expert mentions.

Procedure and research methods

At the first stage of the study, we selected the information sources for the realization of the study goal: articles published in Scopus and Web of Science indexed journals and conference presentations by researchers from various countries, containing statements on the functionality of CAT tools, the advantages of using CAT technologies, and their implementation in training future translators (23 sources in total).

At the second stage of the study, experts identified the factors ensuring future translators' mastery of CAT tools based on which we determined the approximate content of the special course "CAT technologies in translation activities" using Trados as the most common CAT system (SDL Trados Studio, n.d.).

Criteria for the selection of experts (23 people) include no less than 11 years of experience in teaching and no less than 3 articles on teaching published in Scopus and Web of Science indexed journals.

The third stage of the study involved the analysis of the collected information and the interpretation of results.

Statistical data analysis

The study deployed numerical methods of calculation using Microsoft Excel software product to calculate the percentage of expert mentions of factors ensuring the mastery of CAT tools by future translators.

Results

According to the surveyed experts' opinions based on pedagogical experience, the development of the content of special courses in mastering CAT tools has to account for a range of factors that ultimately have to ensure the level of mastery of CAT tools required by the modern translation industry (Table 1).

Table 1. Factors ensuring future translators' mastery of CAT tools

№	Factors ensuring the mastery of CAT tools	%*	Rank
1	Awareness of the essence of working with CAT tools as a separate type of translator's activity requiring special competencies	82.6 %	1
2	Understanding of the role of CAT systems and their effect on the effectiveness of reaching the final result in completing translation projects	73.9 %	2
3	The ability to work using CAT systems at each stage of translation preparation and implementation	65.2 %	3
4	Readiness to interact with the structural elements of the system in which the translation is performed	60.9 %	4

Note: compiled based on the expert survey; *percentage of expert mentions

The importance of accounting for the identified factors is supported by several relevant scientific developments on the studied topic, as well as by the state of the translation services market. In particular, according to TRADOS, the leading company

in CAT software development, when translations are performed using such systems, 60% of a translator's efforts are devoted to the implementation of linguistic technologies that imply using translation memory and the respective terminological databases for translation; 30% of activities are focused on the technological support of translation through managing resources and capabilities of the respective software (Olohan, 2011).

Considering the aforementioned factors that affect the development of the content of special courses on mastering CAT tools, as well as based on the expert recommendations, we propose the following special course "CAT technologies in translation activities" using Trados as the most common CAT system (Table 2).

Table 2. Content of the special course "CAT technologies in translation activities"

№	Components of the special course	Content
1	software	the main types of software licenses, machine and automated translation systems, client-server technology programs, terminology database programs, translation memory systems, search systems, parallel text alignment programs
2	hardware	principles of the construction, operation, and use of local networks, conditions of access to Internet resources and exchange of information resources, technical characteristics of server platforms, workstations, other hardware, providing for the realization of translation
3	information support	electronic catalogs, electronic libraries and journals, electronic encyclopedias, text corpora, industry portals for information and reference searches on the designated topics, electronic bilingual dictionaries of general and special purposes for selecting correspondences and equivalents for translation
4	regulatory requirements	standards for the provision of translation services using automated translation systems
5	file formats and the features of their use	.txt, .doc, .rtf, .odt, .pdf, .html, .xml, .indd, .tmx, .tbx, .xliff, .sdltm
6	the main	preparing a translation workspace, terminology recognition (inserting terms), automatic substitution during localization (inserting placeable elements), segmentation rules, Autoconcordance function (database search), adding a terminology database entry, error correction, data import/export
	the translator's	the study of organizational systems and algorithms of completing

	readiness to cooperate in a translation project	translation projects using CAT systems

Note: compiled based on the expert survey

Discussion

Thus, to ensure the training of highly qualified translators, it is expedient to include a special course for mastering CAT tools as a separate type of professional activity in their professional training. The content of such a special course has to account for the requirements for the activities of translators and provide for the performance of their professional functions at all stages of preparation, introduction, and completion of the translation.

The leading universities also organize training in the use of CAT tools in the process of professional training of future translation specialists through developing and introducing the appropriate educational courses (Starlander, 2013). The examples of such courses are “Translation Information Technology of Translation” (University of Trieste, Italy), “Automated Translation” and “Computer Assisted Terminology Work” (EuroAcademy, Berlin, Leipzig, Dresden, Hannover; Germany), “Computer-Assisted Terminology Work and Computer-Assisted Translation” (Würzburg Interpreting School, Germany), “Professional Competence” (Ruprecht-Karls-Universität Heidelberg, Germany), “Information Technologies in Translation” (Moscow State University, Russia), “Computer Technologies in Translation” (Tyumen State University, Russia), “Infocommunication Technologies in Legal Translation” (Peoples’ Friendship University of Russia), “Terminology and the Use of Computers for Translators” (University of Kent, UK).

Undoubtedly, the development of the content of such a special course has to take into account the experience (Logachev et al., 2021) accumulated by the leading universities of the world and Europe and reflected in the above-mentioned training courses.

According to experts, the most popular translation memory system in the world is TRADOS (www.translationzone.com) which occupies 35% of the market (Han, 2020).

Based on our review of the literature (Bundgaard, Christensen, Schjoldager, 2016; Mafulah et al., 2018; Song, Zhang, Wang, 2010), we shall examine some

features of future translators' work with SDL Trados, specifically using the SDL TRADOS Studio 2019 version as an example. The system is based on the following basic concepts: Translation Memory (TM), TermBase (terminology base), and AutoSuggest Dictionary.

The discussed technologies demonstrate the following main advantages (Table 3).

Table 3. Advantages of using the SDL Trados technology

№	Technology	Advantages
1	Translation Memory	faster translation and saving time on translating the repeating segments
		the best content and quality of translation: a translator with TM is sure that they also translate segments that happened before, thereby not confusing the reader
2	TermBase	saving time and resources since there is no need to search for and type verbose expressions
		quality improvement, since if the same expression is used several times in the text, the terminology base helps avoid unnecessary variations that will disorient the reader
		the ability to create and manage terminology that is specific and cannot be found in an ordinary dictionary
3	AutoSuggest Dictionary	automatic suggestion of useful words, expressions, and phrases in translation memory analysis

In addition to the main module (Workbench) where the work itself is performed, the application contains several additional modules that are no less useful: MultiTerm, a program for creating terminology bases that connects to Workbench for increased productivity; WinAlign, a program for creating TMs (or blocks of pairs) using the existing translations; TagEditor, a program allowing to work in various formats, perform formatting, and many other useful functions (Han, 2020).

In addition, the system provides for work with files of various formats including MS Word, MS PowerPoint, MS Excel, and PDF that can be converted into the format convenient for the recipient which significantly simplifies work with the documents. The technical side of translation is also simplified by the fact that the entire text for translation is divided into segments (terms) with a certain status assigned to each of

them (translated, untranslated, draft) allowing to keep track of the amount of work done (Song, Zhang, Wang, 2010).

The program exists in two versions: for performing single projects and for performing network projects. A TM tool installed in the local network of a particular translation agency can provide access to a document for translation to several translators at the same time (Mafulah et al., 2018). When time is limited, translating large texts often requires more than one translator at a time which helps everyone involved in the translation process to keep the terminology unified and greatly simplifies the organization process in which each participant in the project is assigned a specific amount of work (Bundgaard, Christensen, Schjoldager, 2016).

Aside from the TM database, the TRADOS software package also contains other options: the alignment tool allowing creating a database of TMs from old documents with their translations; the text analysis tools (determining the number of repetitions as well as the number of matches with the TM database and the of the segments' match), the pretranslation tool (text processing that allows pasting the segments that match the database and, in some cases, highlights the segments that have no matches). The program provides for flexibility in customizing and modifying the interface to suit one's needs. The package also contains an additional program that allows you to create and work with terminology bases (Multiterm program) (SDL Trados Studio, n.d.). TRADOS also has an AppStore allowing one to purchase a variety of plug-ins through one's personal account and use them to optimize performance and improve the functionality of the program.

Conclusion

The use of CAT programs is essential in daily translation work as it presents a requirement of the translation market and the future of the translation industry that has to be taken into account in the educational process of training future translation specialists.

Mastering each element of CAT software and understanding its essence will ensure the future development of future translators' competence in the use of information technology and the proper culture of using automated translation. Knowledge and skills in using modern translation information technology will be useful for translation specialists, and their development can be ensured as a part of an elective discipline for higher education applicants.

Summarizing the above discussion, we conclude that the study confirms the hypothesis suggesting the presence of the need to introduce a special course into the professional training of translators aimed at ensuring the necessary potential of mastering CAT tools and teaching them the basics of working with these programs which would increase the overall effectiveness of training and create a basis for the development of professionals competitive the modern labor market.

Prospects for further scientific research are found in the development and approbation of appropriate teaching materials.

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