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**CAT AND LINGVO TUTOR TOOLS IN EDUCATIONAL  
GLOSSARY MAKING FOR NON-LINGUISTIC STUDENTS**

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***Abstract***

This article is devoted to the use of special information and communication technologies (ICT) tools such as computer assisted translation (CAT) and Lingvo Tutor in the educational process of teaching foreign languages at technical higher educational institutions. Such kind of work is a reflection of the urgent needs of modern educational environment, as well as an essential component of the requirements for the cutting edge foreign languages lessons. The need of analysis of the use of CAT and Lingvo Tutor is determined by necessity of achieving the goals of intensification of educational process, improving occupational competence of future engineers and increasing motivation for foreign languages learning. The research describes the experiment of using CAT and Lingvo Tutor options by non-linguistic technical students for making glossaries connected with their future professional field. This kind of work was one of the types of extracurricular activity of the students at the Mining University involving online platform Smartcat and computer application Lingvo Tutor. The analysis of the results obtained in the experiment allows us to highlight the main advantages of using such kind of work at the process of vocabulary enlarging of future science and technique specialists. In comparison with traditional work this method of compiling virtual glossary improved results in language mastering. CAT and Lingvo Tutor tool training technologies in technical students' glossary making proved to be extremely successful due to the novelty of such process and in turn led to the increasing of motivation and improving the knowledge of future specialists.

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**Keywords:** CAT, glossary making, ICT, Lingvo Tutor.



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## 1. Introduction

In the Russian Federation there is a special Federal Educational Standard for learning foreign languages in the non-linguistic higher education institutions which stipulates that such students study the language gradually enhancing the complexity and difficulty level, starting from general topics and coming up to the enhanced and advanced professional topics within their specialty. By the end of the foreign language course students will have studied essential grammar and vocabulary essential to communicate within the international professional community as well as will have practiced a number of skills and abilities such as listening and audio perception, reading of the authentic texts, speaking and clothing their thoughts into the words in the language being learnt, and writing skills to the extent of profound knowledge (Semushina et al., 2019).

It is important to mention that in the educational standards of the third generation, information and communication competence is included in a number of both professional and universal competencies. It also means the mandatory introduction of ICT as a teaching principle. In such conditions, the requirements for tuition of a foreign language also increase, since traditional teaching methods and techniques are becoming obsolete quite fast. In such circumstances of rapid development of knowledge traditional teaching methods, such as paper media, do not withstand competition with the tools offered by electronic technology. Another frequent drawback of the traditional language teaching is the lack of feedback between the teacher and the student, which makes the teaching process one-sided.

However, there are still numerous techniques and methods used by various higher educational institutions for achieving these goals. In the modern world, they are trying to diversify the educational process as much as possible involving information and communication technologies (Razinkina et al., 2018). Thus, it is vital to be aware of all the possibilities rising in the technological world that might be applied in language learning. This point is proved by numerous researchers: Alenezi (2020) stipulates that language performance and competence of the students increases if various electronic tools and computer-based materials are used.

In the present day context of superfluity of the educational process with the modern technological and computerised environment, the need for ICT in teaching university students is growing and has become an urgent need (Murzo et al., 2019). Integrating ICT in English teaching becomes possible with using different applications which turns the process of learning more productive and significantly enhances the learning motivation of students. Different applications provide learners with additional opportunities for training skills, quick development of special vocabulary, especially on the initial stage of learning the language.

As one of the teachers' primary goals is to get students of non-linguistic specialties more interested in learning the language, the work of the teacher implies not only the correct lesson planning, but also the constant skills improvement. One of the ways to motivate students to learn a language is to use special environment connected with their future specialties as a method. Frolova et al. (2018) also pointed out the importance of creative approach in application of ICT in humanitarian subjects taught to the students of technical specialties.

With the help of certain applications like CAT tool and Lingvo Tutor, one or another language skill can be quite successfully developed. Although nowadays more and more teachers prefer to use the

communicative approach, nevertheless, the development of students' verbal ability remains one of the important tasks. Sometimes enlarging of students' vocabulary seems a lesser problem than developing conversational skills; however, it is also equally important. An extensive vocabulary in its professional field is an indicator of the education and competence of a specialist. With the help of the enlarged vocabulary students get rid of fear of reading texts, especially on professional topics and do not have the difficulty with finding the information they need from a foreign language source.

## **2. Problem Statement**

According to the Federal Educational Standards English as a foreign language is taught at every non-linguistic university as it is included in the list of obligatory disciplines. Rudskoy et al. (2018) described general issues regarding the professional competence of a contemporary engineer in Russia. Therefore, teaching English in technical universities requires special attention and this opinion is shared by numerous researchers (Goman, 2019; Trostinskaia et al., 2018; Muñoz-Luna & Taillefer, 2018). Also, the need for language teaching is determined by a number of reasons. In a modern technical university, the study of English occupies an important place and is an important component in the training of specialists for various sectors of industrial branches as well as for the economy. The English language is recognized as not just an academic discipline, but also as a very important element in the education system, which influences the competitiveness of a future specialist. Language competency is also an indicator of the career prospects: an English-speaking specialist can continue education abroad, exchange experience with colleagues and, in addition, get engaged in cooperative scientific work; keep abreast of all the innovations in those fields of science that he or she takes interest in (Shreve & Angelone, 2010).

We cannot but mention the features of teaching English in a technical university. Currently the role of the English language at non-linguistic universities has been significantly reconsidered due to the development of student's professional awareness and requests of the modern labour market. The fact that the mining industry is a crucial sector of the economy and often the main source of national income makes universities responsible in the issue of training highly qualified personnel.

The scale and complexity of changes in the modern society driven by the globalization and informatization leads to the transformation of all parameters of social structures, including global transformations of the modern educational process.

We live in a post-information society when information is transmitted and processed faster than a human thought (Cortada, 2020). This is due to the fact that computer technology has entered all spheres of our lives so firmly that any activity without them becomes inconceivable. This suggests that the mental processes and processes of perception of information have changed a lot.

Today we are witnessing a very rapid development of science, engineering and technology, and the task of any specialist is to know much about the innovations and scientific cutting edge technologies. The 21st century's challenges have been encouraging various changes in the forms and modes of education (Mynbayeva et al., 2017). Innovations in all spheres of science and technology also cannot pass by the language teaching methods and tools. For this reason, language teaching methods must meet the requirements, specified by the modern society.

One of the vectors of the educational process transformation is the active integration of various educational applications that the digital industry offers us today. Glukhov and Vasetskaya (2017) suggested improving the teaching quality with a smart-education system. The tendency of preference by students of ICT over traditional methods must be taken into account when teaching a foreign language. Knowledge has become available to them at a screen touch or a mouse click. And we should take into account this cognitive feature of a new generation of students.

### 3. Research Questions

Nowadays it is becoming common for sophisticated educational programs to resort to such method as CLIL, which implies simultaneous immersion both into language and content of specific subject. This would be especially topical for universities and other higher education institutions of high rank (Baranova et al., 2019). In Russia, guiding federal standard for the discipline “Foreign language” for non-linguistic students stipulates that approximate amount of allocated academic hours amounts to 340 h (Ter-Minasova, 2009). As a result, at most of the Russian technical universities and colleges a foreign language is taught over the first and second years of studies, only sometimes longer. Thus, a portion of the foreign terminology that is supposed to be learned by the students might still be unfamiliar to them even in their native tongue due to the fact that some of the subjects are still yet to come in the 3rd or 4th years of studying. Hence, coming to the endpoint of foreign language course in the higher educational institution for non-linguistic specialties, it is necessary to turn to CLIL technology which comprises learning some professional skills in the foreign language so that the language is a tool not the purpose of studying. At this point learning professional vocabulary and practical usage of it (in all the aspects) comes to the fore but students are still unaware of the context and do not understand the processes described by the terminology to be learned. So we immerse them into professional environment through English texts and speech containing not just new vocabulary on their specialty but also new information about processes – the content.

This process could be described as follows: studying of general English evolves from basic concepts and knowledge that has already been acquired by the learner. Using these concepts and knowledge familiar from his or her native tongue a student develops his or her foreign language skills.

A foreign language at some point is supposed to become a tool not the purpose of the learner on his or her way to knowledge and professional development (Gerasimova et al., 2019). Studying professional topics within a foreign language discipline contributes to that purpose.

At this point universities and colleges engage language materials elaborated by the teaching and methodological staff so that these would comprise with the particular educational programme and would fully correspond to its purposes. One of the tasks for the students of advanced level of language studies is to scrutinize different texts of their professional area.

In order to understand an issue or perceive some technical process described in the unadapted professional text in the foreign language, students have to work thoroughly with vocabulary and grammar structures (Kogan et al., 2018). During training the engineering students to understand special subjects in English, one of the most recognized methods is to compile a glossary. In this respect the term ‘glossary’

means a list of terms (previously unfamiliar to the compiler of the glossary) containing translation and/or definition as well as further commentaries necessary for better understanding of the terms.

Traditionally students used to write out necessary vocabulary into their notebooks and learn the terms afterwards. In this article we suggest using ICT for these purposes. A lot has already been said about using ICT in language learning. Let us scrutinize some other ICT tools from adjacent field. Computer assisted translation (hereinafter referred to as CAT) tools are gaining popularity all over the world due to their convenience in practical use when translating a text from one language into another. Mainly these tools are used by professional translators in order to accelerate their work and improve quality of translation. However, we suggest using one of the CAT tools and Lingvo Tutor options for non-linguistic learning.

#### **4. Purpose of the Study**

As for the purposes of the research, the authors contemplated to analyse, first of all, the experience and future prospects of using ICT, namely CAT tool and Lingvo Tutor in teaching a foreign language in the professional field; evaluate the effectiveness of these applications and give the recommendations on its implementation in the educational process of a non-humanitarian university. Moreover, within the framework of the study, the authors were interested in displaying the effectiveness of using digital educational technologies and their impact on students' success in learning the language.

#### **5. Research Methods**

To assess the effectiveness of using CAT tool and Lingvo Tutor tool training technologies at all stages of the study the authors used qualitative and quantitative methods of analysis. The dynamics of students' knowledge of a foreign language vocabulary formed in the course of training with the help of CAT and Lingvo Tutor tools was evaluated through questionnaires of the students and the analysis of results of the educational process with the help of different forms of control (tests, exams).

Lack of terminological and special vocabulary is one of the central problems faced by the teachers. Often a student, having good knowledge of grammar, shows passivity at the lesson precisely because of insufficient vocabulary. Vocabulary acquisition is one of the central points in learning English. In our case it includes not only words and expressions of everyday speech, but also terms, which must be properly used in an environment connected with their future profession. Since accurate communication is the most important aspect of the implementation of professional activities, the proper use of special terminology increases its effectiveness significantly.

The research took place from January, 9th 2019 to December, 25th 2019. During this research, the authors analysed methodological and theoretical approaches of using the ICT in the process of teaching English the students of the Mining University and revealed the new aspects of the use of up-to-date educational technologies. The research was conducted with the use of statistical methods and questionnaire survey of the students. Since the main aspect of teaching in the second year is connected with work with texts devoted to their future professional field, so the respondents chosen by the authors were the 2nd year students of Mineral raw materials processing faculty of St. Petersburg Mining

University. The total number of students tested is 45 people of intermediate level of English (15 students in each group).

For this purpose, the authors developed the questionnaires that reflected the students' opinion about the CAT and Lingvo Tutor and their effectiveness.

The questionnaires contained the following questions:

1. What is the main obstacle in reading texts connected with your future profession?
2. What resources do you use to overcome these obstacles?
3. Have you ever used any applications for learning a foreign language (if yes, specify which ones)?
4. Do you prefer paper or digital dictionaries?
5. Have you ever used any CAT tool or Lingvo Tutor before?
6. Do you think CAT or Lingvo Tutor helped you to improve your language skills?

## **6. Findings**

During the research the authors pursued two goals. The first one was to improve students reading and understanding skills, mastery and the ability to apply terms, operate with scientific material, because they have to work with foreign language sources. The second goal is to integrate a modern resource into the educational process, which could help students to master their new vocabulary.

The results questionnaires of the students are as follows:

Regarding the first question from the abovementioned questionnaire «What is the main obstacle in reading texts connected with your future profession?» the most common answer was “complex grammatical constructions” (appr. 50%). However, more than 40 percent replied that the most difficult part is “the understanding and translation of professional terms”. This, in our opinion, is associated primarily with insufficient professional knowledge at this stage of training, as well as with the lack of structural glossary for professional topics.

The answers to the second question caused a certain anxiety. 65% of the respondents admitted that they used software translators to overcome difficulties in understanding texts. This, of course, is not encouraged by the teachers, as it has a negative affect on the ability to translate a foreign language text meaningfully; besides, this is completely contrary to the main teaching objectives. 10% of the students do not see any difference between an electronic dictionary and an electronic translator. On the other hand, such answers can be explained by the obvious desire to find an easy way to solve the problem, so digital technologies provided the students this opportunity. It is important to mention, that unlike digital translators, CAT and Lingvo Tutor are not substitutes, but training applications.

Speaking about answers to the third question 37% of students wrote they had never used any digital language learning application before the experiment. The rest majority of respondents (63 %) said they had used educational applications before. Most of them were some popular applications aimed at memorizing words through images.

About 90% of the students preferred digital dictionaries to paper ones. Moreover, over half of those surveyed admitted that they had never been familiar with a paper dictionary. This answer was

obvious, because, as we know, digital technologies, including dictionaries and translators, are not only accessible to the current young generation, but also has become a self-evident replica to a paper dictionary.

Answering the fifth question «Have you ever used CAT or Lingvo Tutor before?» the majority (78%) answered they had never heard about such applications. 22% said they heard of them, but had never used. We can find an explanation that both of these applications are intended for targeted use, in contrast to applications containing entertainment content. The fact that our respondents are students of a non-linguistic university also affects this.

We received quite interesting answers to the sixth question. As it was mentioned before, 37% (17 persons) of respondents had never used any digital application when learning a language before the experiment. However, they showed an enthusiasm in using these applications.

54% (24 persons) of the respondents, initially having shown a mediocre interest in using CAT and Lingvo Tutor, subsequently demonstrated a significant improvement in their vocabulary knowledge.

9% (4 persons) of the students said they hadn't noticed any improvement while using CAT and Lingvo Tutor application.

The analysis of the answers allows us to draw to the conclusion that students can understand new material connected with their future professional field better through using a new advanced method of presentation.

During the research the authors have discovered that making glossaries with the help of CAT and Lingvo Tutor tools is much more interesting for the students than working with traditional lists of vocabulary. This work should be an extracurricular activity for the students when they have computers or laptops with access to the Internet or to the special software.

Another positive issue is that students compiled their own glossaries which contained only the terms which they had not learnt yet in comparison with a list of vocabulary meant to be learnt by everybody in the educational process.

As for CAT tools they provided the students with an opportunity to exchange glossaries, merge them, import and export them between each other. Such mobility caused great response from the learners as it gave them opportunity to work with terms, share and expand their knowledge within their group.

One of such available tools is online platform Smartcat. After authorization it allows users to work with its options one of which is making glossaries. It provides opportunities for creating several glossaries. An authorized user creates a glossary, gives it a name and description. In the mode of editing the user creates entries for each term. An entry contains such sections as the term itself, its translation, and space for any necessary commentaries.

We have practiced the creation of glossaries on Smartcat platform with their students. This proved to be extremely successful due to the novelty of this process and hence higher motivation from the students. In comparison with traditional work when they are supposed to work with dictionary, write down and learn terminology, this method of compiling virtual glossary caused only positive feedback from the learners and also advanced results in language mastering. Students used the commentary section in various ways: grammatical peculiarities, usage of the term, its pronunciation, i.e. transcription (the

platform supports the International Phonetic Alphabet), explanation and definition of the term, context, etc.

The second useful translation tool, used in the research, is application Lingvo Tutor produced by ABBYY which is packaged together with the electronic dictionary ABBYY Lingvo. It allows the students to practice specific words that they want to learn. For more advanced students of technical university whose aim is to learn technical English for professional usage, it is especially relevant because they have access both to the terminological support from the dictionary and to the practical training of new terms in one application. The principle that the authors of the article used is the following: students were to work on the professional English text on their own and compile their own list of words to be drilled through the application. After that, they exported the list of words and brought them to the class. Thus, they had an ability to compare their lists, practice words with each other, pay attention to some previously unnoticed terms. During the lessons they practiced their vocabulary lists (that had already been drilled individually) through making crosswords for each other, playing vocabulary games, discussing the topic with spotting the new words.

Using both the described methods, it is possible to limit the computer usage to extracting and training terms at home. The collaborative vocabulary practice still takes place during the class together with the group mates and the teacher as a guide in terminology mastering. However, it is ICT tools that make it possible to export any type of vocabulary list and print it out for further usage. This way of language practice is easily taken up by the contemporary generation of students and allows the teaching staff to assimilate into the modern aspiration for digitalization.

The results of the analysis of the educational process progress are the following:

1. A significant expansion of the passive and potential vocabulary of approximately 80% of the whole number of the students, taken part in the experiment, can be mentioned as well as their active participation in the classes. We can also add that using CAT and Lingvo Tutor to a certain degree helped to attract passive listeners to active work due to expansion of their vocabulary.

2. Thanks to the CAT and Lingvo Tutor tools, the students practically didn't use any electronic translator during the experiment, thereby contributing to the development of their analytical skills and the ability to understand professional texts of various levels of complexity.

3. It was found that these applications intensified the cognitive interest of the students. Since the students had to compile their glossaries on their own in the application, they improved their skills in searching the necessary information, which definitely influenced the developing of students' information culture and intensified interest in their future professional field.

4. The results of the tests and the exams demonstrated that the students taken part at the experiment showed a significant progress in learning and passed the tasks connected with vocabulary and translating better than other students of their faculties (the number of good and excellent grades increased by about 9 %).

So, the aim of using CAT and Lingvo Tutor tools is not to develop translation skills, but to improve the skills of texts processing and analyzing whatever language it is, and such ability is absolutely necessary for any modern specialist.



## 7. Conclusion

The results of the experiment of using CAT tool and Lingvo Tutor training technologies confirmed the feasibility both of them in terms of improving the knowledge of future specialists, and in terms of increasing their motivation to learning English.

The experience has shown that those groups of students in which CAT and Lingvo Tutor technologies were used regularly showed more interest in learning the language and had better results at the exams.

In this aspect the introduction of innovative methods of using CAT tool and Lingvo Tutor and their skillful combination with traditional methods is of great practical importance in the modern educational environment

The use of CAT and Lingvo Tutor in the educational process has several advantages; it expands the boundaries of the information field through the use of new teaching aids, also it boosts the increasing of cognitive activity and motivation of students.

So, when using CAT and Lingvo Tutor we can speak about the innovative character of the educational process and the expansion of opportunities for acquiring knowledge and creating conditions for increasing students' motivation and their desire for self-education and self-improvement.

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