The European Proceedings of
Social and Behavioural Sciences
EpSBS

www.europeanproceedings.com
e-ISSN: 2357-1330

DOI: 10.15405/epsbs.2020.12.03.13

Joint Conference: 20th PCSF and 12th CSIS-2020
20th conference Professional Culture of the Specialist of the Future
12th conference Communicative Strategies of Information Society

SPECIFIC PURPOSES TEXTS' TRANSLATION TRAINING FOR MINING AND CIVIL ENGINEERING SPECIALTIES STUDENTS

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Abstract

The article is devoted to the problem of professionally-oriented translation training for engineering students. The formation of translation skills contributes to improving the competence of undergraduates in the field of a foreign language and gives them an additional tool that is in demand both when working in the main specialty and when learning foreign languages. Teaching a foreign language at a technical University is aimed at developing students' skills and abilities to use their knowledge in real communication. In programs of training of the mining and civil engineering specialties students "Foreign Language" is a subject included in the basic cycle, i.e. it is not a profile discipline. Nevertheless, its study is an integral component of training of highly qualified specialists in the technical branches of knowledge. Teaching translation to students of non-linguistic universities faces a complex of difficulties such as low level of English, lack of motivation and limited hours for language training in the engineering universities In this article, the authors conducted a study of the main problems of translation of scientific and technical texts, which are faced by teachers and students of the Mining University. The relevance of the topic is justified due to the importance of translation training of students as future researchers and specialists in various fields of the economy.

Keywords: Competence, Federal educational standards, foreign language teaching, scientific and technical text, term, translation methods.

https://doi.org/10.15405/epsbs.2020.12.03.13
Corresponding Author: Anna Y. Maevskaya
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

1. Introduction

In today's world, professional information is regularly exchanged in English. The processes of globalization and informatization, the expansion of interstate relations, the rapid development of science and technology, the regular exchange of scientific and technical information have made relevant the search for means and methods to improve the quality of students' training in the translation of specialized texts.

In the system of teaching a foreign language for specific purposes, one of the important competences for future civil engineers, surveyors, architects and mining engineers is the work with texts on their specialities. Federal Educational Standards of the third generation as a requirement for the results of program development determine the need for graduates having several universal competences, among which the most important competence in foreign language learning is "Communication". A graduate should be able to apply modern communication technologies also in a foreign language for academic and professional interaction. The indicators of achievement of this competence are: reading and understanding with a dictionary of information in a foreign language on topics of everyday and business communication, conducting a dialogue in a foreign language of general and business nature, making reports in a foreign language after preliminary preparation. By the end of the foreign language course students will have studied essential grammar and vocabulary necessary to communicate within the international professional community as well as will have practiced their listening, reading, speaking and writing skills to the extent of profound knowledge (Semushina et al., 2019).

To meet the requirements of Federal Educational Standards educational process must involve the modern technological environment. The need for use of information and communication technologies for teaching students is constantly growing and has become an urgent need (Murzo et al., 2019)

Communicative foreign language competence is necessary for successful socialization and self-realization and is a tool for intercultural communication in the modern multicultural world. In this regard, authentic texts on professional topics using specific vocabulary are an integral part of training. Working with authentic specialized materials becomes a very important experience for students to use the language for its intended purpose and therefore it contributes to the formation of a correct, adequate perception of the language, which is undoubtedly the key to future success.

2. Problem Statement

According to the Federal Educational Standards the discipline “Foreign language” is taught at every non-linguistic higher education institution, being the obligatory discipline. Rudskoy et al. (2018) described general professional competence of a modern Russian engineer. Therefore, teaching English as a foreign language in technical universities requires much attention. Numerous researchers share this opinion (Almazova et al., 2018; Goman, 2019; Odinokaya et al., 2019; Stroganova et al., 2019; Trostinskaia et al., 2018; Zemlinskaya & Fersman, 2017).

In a modern technical university, the study of English is crucial in the training of specialists for various sectors of the industry and economy. Translation of texts connected with the students’ future profession is one of the most important aspects of the process of teaching a foreign language, as it

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introduces students not only the specific features of the language, but also professional vocabulary and scientific concepts. The main task of translating such texts for the future specialist is to obtain information, and therefore to achieve the accuracy of the translation of the meaningful content, i.e. its equivalence, is extremely important. The equivalence of translation is obtained by precise transferring lexical, grammatical, stylistic, and phraseological meanings (Latyshev, 2003).

It should be noted that teachers bring the necessary tools, frameworks, and principles of course design to apply them to new material. “The material should always be authentic (the main purpose of teaching skills is to enable students to deal with authentic information despite their level of English), up-to-date (the informational exchange is growing more intense), and relevant for the students’ specializations as they ought to be given the information representative for their target language use situation” (Bojovic, 2006, p. 493).

In the scientific works various descriptions of translation methods and techniques are represented. Newmark (1988), an English scientist and interpreter, considers that “only semantic and communicative translation fulfills the two main aims of translation, which are first, accuracy, and second, economy” (p. 48).

Komissarov (1997) highlights the features of the scientific and technical text:

- lack of emotional coloring that allows to translate scientific and technical texts accurately;
- the desire for a clear and accurate presentation of the material, which, in turn, leads to the widespread use of abbreviations, participial symbols, infinitive, gerundial constructions and the use of special terms;
- reinterpretation of spoken words is one of the methods of constructing terms;
- the rarity of using idioms.

Translating teaching is connected with the development of communicative competence, "the ability to understand and generate foreign-language utterances in a variety of socially determined situations, taking into account the linguistic and social rules that native speakers adhere to" (Galskova & Gez, 2007, p. 19).

Translation of scientific and technical texts is a part of the general translation notion. Engineer and linguist Klimzo (2017) underlines the application of four types of scientific and technical texts translations: good-quality, adequate, lexical, intralinguistic translations. The authors of this article determine that the most suitable translation methods for students of technical institutions include lexical and intralinguistic types of translation.

It should be mentioned that numerous researchers stipulate translation methods of different lexical and grammar peculiarities of professional texts such as translation of term-phrases with attribute relations (Bykova, 2019), non-equivalent terms (Popova & Semyonova, 2016). Also, the research of Junye & Pinglan (2019) provides a new method for relevant texts translation which studies and summarizes some translation strategies of civil engineering texts.

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3. Research Questions

The authors believe that reading, translating and understanding of scientific texts is fundamental not only for improving the level of professional knowledge and solving professional tasks, but also for the speaking evaluation and developing of language competencies.

Due to the fact that translation is the most complex component of the thought process, a foreign language teacher in a non-linguistic university faces certain difficulties because of the small number of academic hours provided for language learning and because of the lack of proper motivation among students. Motivation is one of the most important points in teaching foreign languages and the use of professionally-oriented texts engages students in learning, they are interested in performing the tasks presented, answering questions, and sharing their experience. In addition, when referring to the original source of information, it increases the practical value of foreign language proficiency.

The choice of the genre of texts and exercises should contribute to the formation of students' motivation. It should be noted that the organization of foreign language teaching should take the form of a dialogue, contributing to the students' evaluative judgments, the ability to think critically, and the ability to comprehend what is read. Therefore, the most important criteria in foreign literature translation are the significance and relevance of information for further practical application by students in their professional sphere.

Translation of scientific and technical text from English to Russian requires a future specialist to take into account grammar and vocabulary features, peculiarities of the text, characterized by semantic accuracy and informative content, knowledge and ability to translate terms and concepts.

The authors of the research decided to analyze examination translations made by the students of Mining and Civil Engineering Faculties of the Mining University which were obtained at the multi-component examinations. During the last five years of exams the translation of a fragment of the original unadapted professional text on the speciality of the student is an obligatory element of intermediate and final control. During the years of the written examinations at the Department of Foreign Languages a kind of "data bank" has been formed, analyzing which, the teachers of the department can trace the main mistakes and difficulties arising in the process of translation of professional unadapted texts.

The objective of the research is to systematize the main mistakes which were made by the students in these translations; then the scope of errors and mistakes was categorized; the main problems and lack of knowledge in linguistic and non-linguistic areas were understood and ways of solution of the most common difficulties were suggested.

4. Purpose of the Study

The purpose of the research is to describe the problems of teaching and learning a foreign language for specific purposes texts' translation in a technical university and suggest possible ways to overcome them.

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5. Research Methods

Theoretical and methodological basis of this research was the system of the theory of personal learning, the general theory of translation and peculiarities of translation of scientific and technical literature, modern scientific concepts of the theory of forming the model of a specialist, the concept of new learning strategies, and the position of a competence approach to education.

The main methods used for the research were: analysis of literary sources and publications of recent years on the issues of foreign language teaching in higher education and the problems devoted to the peculiarities of training translation of texts dealing with professional field and translation of special vocabulary; the method of generalization of practical experience in translating original unadapted texts and terms by students studying at the Mining University, which allowed to identify the main difficulties encountered in teaching; the method of expert evaluation. The research was conducted with the use of statistical methods.

The basis of the research was the St. Petersburg Mining University. The study covered 280 students' papers at different stages. The study was conducted from 2017 to 2019.

6. Findings

The authors of this article carried out an expert analysis of the main mistakes that occurred in the examination works of students of the Mining and Civil Engineering Faculties in their examination translations in 2017-2019. The authors have analyzed 280 works of the students. According to the survey the main mistakes that were made by the students were:

1) grammatical mistakes – 42% (118 students);
2) lexical errors – 33% (92 students);
3) other types of errors (spelling, stylistic, punctuation, etc.) – 25 % (70 students).

As we can see, grammatical and lexical errors make up the vast majority of all available errors, which led the authors of the research to think about the necessity of the analysis of the accumulated material, its systematization and searching for ways to overcome the existing difficulties.

Among grammatical errors, the most frequent ones were:

1) inability to translate the passive constructions correctly – 24% of all grammatical errors;
2) incorrect translation of non-personal verb forms (infinitive, gerund, participles – 18% of all grammatical errors;
3) inability to recognize in the text and translate impersonal constructions correctly – 17% of all grammatical errors;
4) poor translations of complex and compound sentences –14% of all grammatical errors;
5) ignorance of some meanings of modal verbs – 9% of all grammatical errors;
6) other types of grammatical errors – 18%.

Everybody understands that professional texts are characterized by the use of non-personal forms of verbs, indeterminate-personal constructions, passive voice, modal verbs, complex and compound

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sentences. Thus, during all two years of the educational process, the teachers of the department try to anticipate and reduce the main grammatical difficulties, which are most typical for the work with technical texts.

The next important and one of the most difficult tasks in translation of a scientific and technical text is translation and understanding of terms and professional vocabulary. Translation of terms has come a long way in foreign and domestic translation science. The formation of the school of translation of professional terms was stimulated by the appearance of new branches of science and technology, which, in turn, was reflected in speech and language.

Despite deep consideration of this topic in the Russian science, there is no single definition of the term yet. The authors of this research use the definition given to the concept of "term" by Leichik (2007), he described the term as "a lexical unit of language for special purposes, denoting a general – specific or abstract – concept of the theory of a certain special field of knowledge or activity" (p. 31).

Let's consider what difficulties students face in the educational process when translating terms, as the accurate translation of terms is one of the most important aspects of work with scientific and technical texts.

Firstly, it is the lack of background knowledge in the field of future speciality among the first and second year students of the Mining University, and sometimes even among the students of the Master's degree. This problem is aggravated by the possibility of using the same term in different spheres of language functioning and areas of technology and science, but its adequate translation is determined by the context of its use. The correct use of a suitable variant of a term translation is helped by possession of wide professional background knowledge, which is often lacking for first and second year students. In this case, the teacher of the Department of Foreign Languages has a double burden - to explain the basics of the profession and to illustrate them by comparing the means existing in the native and foreign languages. To overcome this difficulty, the teachers of the department of foreign languages have close integrative relations with almost all special departments of the Mining University, constantly improving their qualification.

Secondly, the plurality of terms creates one of the main difficulties in translating technical texts. Rozenthal and Telenkova (1976) define plurality as "the presence of several related meanings in the same word, usually arising from the development of the original meaning of the word". The lecturers of the department overcome this difficulty by explaining to students that, despite the existing plurality of terms, specialized lexical units most often acquire a well-defined unambiguous meaning when they get into a certain sphere of use.

The next difficulty faced by students of the Mining University is the lack of equivalence of some terms. Equivalence often arises either from the absence of a similar phenomenon in the mother tongue or from the relatively recent introduction of the term into the language practice. In order to assist in adequately translating equivalent terms, faculty members of the department use the following classic methods of translation theory:

1) selection of the term of the native language that has a close meaning: "jackhammer drill" should be translated as “buril`niy molotok; pnevmaticheskiy ruchnoy molot”; "total station" – “taxeometr”;

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2) transliteration – formal letter-by-letter creation of a lexical unit with the help of the alphabet of the target language – words are literally translated with the help of the alphabetic imitation of the native language: "metane" – “metan”;

3) methods of descriptive translation: e.g. "cherry picker" is translated as “avtokran s gidravlicheskim upravleniem, avtogidropod`jemnik”; "grouting" – “cementaciya treshchiny`; zalivka cementnym rastvorom”; "derrick" – “vyshka dlya burovogo stanka”; "monkey board" – “ploshhadka dlya verxovogo rabochego”.

Thus, in order to achieve the adequacy and equivalence of the translation, it is necessary to use the means and methods of the terminology system of the language in which the translation is carried out. This rather difficult task has to be solved during the whole educational process by the teachers of the Department of Foreign Languages at the Mining University, since the differences in terminology of the source language and the language of translation are the reason for one of the most significant problems and difficulties arising in the process of this activity.

The fourth emerging difficulty is interference, which appears if the system of the mechanism of changing the language codes is not well formed in the minds of students. Interference is the influence of norms and principles of the native language on the language under study, a mixture of language systems of two languages. Accordingly, when translating a specialized professional text, students often apply the norms of their native language, without taking into account that each language functions using its own unique system of norms and rules. Such translations may contain many mistakes, including distortion of the content of the text being translated, violations of the principles of language functioning, literalism, etc.

Teaching the translation of terms of professional texts the teachers of the foreign language department are guided by the principle of conscious consideration of interference and strive to minimize the negative impact of the native language. To overcome the destructive interference of future mining and civil engineers the authors consider it is appropriate to use a number of exercises aimed at removing lexical interference difficulties. For example, when translating texts on construction specialties students are explained that the word combination "intelligent house" can’t be translated as “intelligentniy dom”, that this is ridiculous, and it is necessary to choose the existing construction in the native language that is “umniy dom”.

Students of technical specialties have already had a certain formed conceptual apparatus, which should be involved in the process of translation activities.

7. Conclusion

The general conclusions based on the given research make it possible to admit that the main difficulties faced by students in translating scientific and technical texts are as follows: lack of knowledge of some grammar structures in English; insufficient background knowledge of the specialty; the polysemantic terms; no equivalence of some terms; the negative impact of the native language system – interference. Despite the existence of a number of works dedicated to the study of various aspects of scientific and technical translation, there isn’t a complex analysis of existing lexical and grammatical

difficulties of translation of texts of mining and civil engineering directions and ways to overcome them, this fact emphasizes the relevance of this work.

To sum it up, the above research has revealed the peculiarities and identified the main difficulties that arise in the process of teaching translation of technical university students, and presented the ways to overcome them, applied by the teachers of the Department of Foreign Languages of the Mining University. The authors of the research came to the conclusion that the analysis of difficulties and constant methodical work on their overcoming contribute to the improvement of the skill of translation of scientific and technical texts, which is so important for training of a highly qualified engineer in mining and civil engineering areas.

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