

ENHANCING STUDENTS' SKILLS TO WORK WITH TEXTS IN FLT FOR SPECIAL PURPOSES AT THE UNIVERSITY OF MINING AND GEOLOGY "ST. IVAN RILSKI" – WORK DONE TO DATE

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ABSTRACT. The current project we are working on is with a pronounced practical orientation towards the student side in the educational process. It is aimed at a more active involvement of students from all courses of studies offered at the University of Mining and Geology "St. Ivan Rilski" in the retrieval of terms from original scientific texts in the respective foreign language and in the identification of the exact Bulgarian terminological equivalent in various scientific areas: mining production, computer technologies, geology, ecology, electrical energy, etc. The aim of the team of authors is to further raise the level of students' obtaining knowledge in the module of special purpose foreign language. The students participating in this project are faced with the following tasks: retrieval of terms from strictly specialized scientific texts for the various courses of studies; selecting the precise Bulgarian equivalents to the retrieved terms in accordance with the context of the respective term; production of lists of fixed phrases where the retrieved terms participate; establishing the etymology of the respective term. The expected results are: enhanced skills to identify the technical terms in the foreign language, as well as their respective equivalent meanings in Bulgarian; improved communication skills of the students; enhanced capacity to work with scientific literature and with special purpose educational materials; determining the current trends and the degree of influence of foreign language terminology on the Bulgarian terminology. Five benefits for students with regards to their involvement in the project are outlined.

Keywords: FLT, terminology, terms

ПОВИШАВАНЕ НА УМЕНИЯТА НА СТУДЕНТИТЕ ЗА РАБОТА СЪС СПЕЦИАЛИЗИРАНИ НАУЧНИ ТЕКСТОВЕ НА ЧУЖД ЕЗИК В МГУ „СВ. ИВАН РИЛСКИ“ - ПОСТИГНАТОТО КЪМ МОМЕНТА

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РЕЗЮМЕ. Настоящият проект, по който работим, е с определена практическа насоченост към студентската страна в процеса на обучение. Насочен е към по-активното включване на студентите от всички специалности в МГУ „Св. Иван Рилски“ при извличането на термини от оригинални научни текстове на съответния език и идентифицирането на точния български еквивалент на термини от различните области – минно производство, компютърни технологии, геология, екология, електроенергетика и т.н. Целта на авторския колектив е да издигне на качествено по-високо ниво усвояването на терминологични знания на студентите в модула по специализиран чужд език. Задачите към студентите-участници в проекта включват: извличане на термини от подбрани тясно специализирани научни текстове за различните специалности; намиране на точния български еквивалент на извлечените термини съобразно контекста на съответния научен текст; изготвяне на списък с устойчиви словосъчетания, в които участват извлечените термини; установяване на етимологията на съответния термин. Очакваните резултати са: подобрени умения за идентифициране на технически термини на чужд език и на съответните еквивалентни значения на български език; подобрени комуникативни умения на обучаемите; развит капацитет за работа с техническа литература и за работа със специализирани материали; определяне на актуалните тенденции и степента на влияние на чуждата върху българската терминология. Обсъждат се пет ползи за студентите от работата им по проекта. Анализира се работата по проекта до настоящия момент.

Ключови думи: ЧЕО, терминология, термини

Introduction

The current project of the Department of Foreign Languages is within the Philological scientific field, in the area of the

Humanitarian Sciences, and more specifically within the foreign language teaching (FLT) methodology related to foreign language for specific purposes. Its implementation started in April 2017.

The project is a logical continuation of former in-depth research of 2/3 of the project team, while 1/3 of the research team is new colleagues who enthusiastically joined the work on the project activities. There is continuity in our approach which we also applied in our previous scientific activities. We started with creating conditions for applying contemporary methods for FLT (2005), we set up the beginning of a multimedia language laboratory (2008), introduced new information and communication technologies in FLT (2011) and specifically for the FLT for specific purposes we developed, tested and started to use new training materials, developing the presentation skills of our students at the University of Mining and Geology "St. Ivan Rilski" (2014). Our current project is targeting the practical training of the students. It is aimed at the more active involvement of the students from all courses of study in UMG "St. Ivan Rilski" in the retrieval of scientific terms from original scientific texts in the respective language and the identification of the precise Bulgarian terminological equivalent from different areas – mining, computer technologies, geology, ecology, electrical engineering, etc.

Existing needs and constraints addressed by the project

All students at the UMG "St. Ivan Rilski" in the full-time courses of the Bachelor degree, study a foreign language, and most of the curricula give a choice between English, French, Spanish, German and Russian languages. The curricula for two of the courses of study: Computer Technologies in the Engineering Activities (KTID) and Geology and Geoinformatics (GGI) foresee training only in English. The syllabi for all courses of study include studying of technical terminology as part of the overall FLT. The technical terminology is extremely important as most of the materials the students use during their university training and further during their professional careers, include between 30 and 80% of terms, i.e. the terminology is a major means for transmitting facts and knowledge. Knowing the precise terms reduces the ambiguity and increases the clarity of the speech and writing - in other words, the quality of communication of the engineers – specialists in different fields depends to a large extent on the quality of the terminology.

Over the last two decades the world has been becoming more and more globalized and quite often the mining and production of raw materials, the creation and distribution of different products, including scientific research, include both multidisciplinary teams and specialists from different countries. The quick technological development and the appearance of new industries and productions lead to the necessity of quick and effective communication which is facilitated by the modern computer and telecommunication technologies. In the contemporary world the information is one of the most significant factors together with the capital, ownership and workforce. That is why, the acquiring of knowledge about terminological concepts in a foreign language in the respective courses of study at the UMG "St. Ivan Rilski" is quite important for the successive training and professional development of the Bachelor degree students.

The object of our study are the students from all courses of study at the UMG "St. Ivan Rilski" and their work on retrieving terms from original scientific texts in the respective language.

The reason for our interest is related to the fact that the communication of specialized knowledge and information, especially in foreign language environment, is inevitably connected with the creation and distribution of terminological resources and the management of the terms in the most general sense. The terminology allows the creation and distribution of scientific products, effective presentation of different achievements and know-how. The work with engineering terminological texts includes the usage of different methods and approaches related to the identification, retrieval, arrangement, translation and storage of the terms. The present project is aimed at the more active involvement of students from all courses of study at the UMG "St. Ivan Rilski" in the extraction of terms from original scientific texts in the respective language and identifying the precise Bulgarian terminological equivalents from different fields – exploration, geology, ecology, mining, mining production, electrical energy, computer technologies, etc.

Objectives

The project objectives are as follows:

- The students should retrieve terms from selected specialized scientific texts for the different courses of study;
- The students, supported by the lecturers, should try and identify the etymology of the respective term;
- The students should try to find by themselves the Bulgarian terminological equivalent of the extracted terms according to the context of the respective scientific text;
 - The students should prepare a list with stable collocations with the retrieved terms;
 - On the basis of the independent work of the students a comparative study will be carried out focusing on the difficulties which the students encounter in their work with specialized texts in the respective languages. The study will try to define the contemporary trends and the level of impact of the foreign terminology on the Bulgarian one.

Implemented activities

So far we have implemented the following *project activities*:

The lecturers who participate in the project selected technical texts in English, German, French, Spanish and Russian. The main criteria for the selection of the texts included the topicality of the materials and the difficulty level of the texts. The second criterion is of significant importance having in mind both the different English classes depending on the level of knowledge of the language, the mixed groups studying the other languages and the English groups which are not part of the combined groups in the three faculties.

The active work with students is implemented both in the combined groups in the three faculties of UMG (since April 2017) and the KTID and GGI groups (in May and June 2017).

88 students participated in the project during the summer semester of the 2016/2017 academic year:

- English language groups, II level (from the Faculty of Mining Technology (MTF) – 8 students from Mine Surveying and Geodesy (MiG); from the Faculty of Geology (GPF) – 6 students from the courses in Geology and Exploration of Mineral and Energy Resources (GPMER), Drilling, Extraction and Transport of Oil and Gas (SDTNG), Ecology and Environmental Protection (EOOS) and Biotechnology (BT); and the Faculty of Mining and Electrical Mechanics (MEMF) – 5 students from the courses in Gassy, Combustion, and Purifying Equipment and Technologies (GGPTT) and Electrical Power Engineering and Electrical Equipment (EEEE) and III level (MEMF – 5 students from the courses in EEEO and Automation, Information, and Controlling Equipment (AIUT), and from GPF – 9 students from the courses in GPMER, SDTNG, EOOS, BT, Applied Geophysics (PG) and Hydrogeology and Engineering Geology (HIG);
- German language groups (from MTF – 7 students from Underground Construction (PS) and MiG, from MEMF – 3 students from EEEO and AIUT);
- French language groups (from MTF – students doing MiG, from GPF – students doing SDTNG);
- Spanish language groups (from MTF – students doing MiG, from MEMF – students doing EEEO, and from GPF – students doing SDTNG;
- Russian language groups (from MEMF – 4 students, from GPF – 7 students);
- the groups which are not part of the combined groups (from MEMF – 10 students from KTID, 1st year: 3 students from the lower level and 7 students from the higher level English group; 2 students from KTID, 2nd year; 3 students from KTID, 3rd year,

11 students from KTID, 4th year; from GPF – 1 student from GGI , 1st year, and 2 students from GGI, 2nd year).

Since the syllabus for this semester foresees the studying of specialized terminology (related to the courses of study in the three faculties) in the respective foreign language, the lecturers selected scientific texts which corresponded to the students' level of knowledge of the respective language. Our starting point was the set of knowledge expected from the students in the respective course of study at this stage of their studies. The texts were selected according to the following criteria:

- complexity;
- number of terms;
- length.

The students had to extract terms from specialized scientific texts for the different courses of study, to try to identify the etymology of the respective term, to find the precise Bulgarian terminological equivalent according to the context of the text and to prepare a list of the stable collocations with the respective term.

The format for the collection of the retrieved terminological data was pre-defined: a table with information about the main terms, their definitions, noun and verb collocations, Bulgarian terminological equivalents, etymology. The project team prepared and provided to the students the table in electronic form with an example of an analysed term to help the students in their work.

The table is presented further on:

Table 1.
Sample table

TERM	DEFINITION	BULGARIAN EQUIVALENT TERM	MEANING IN EVERYDAY LANGUAGE	DERIVED WORDS	COLLOCATIONS (VERB, NOUN, PREPOSITION, ETC.)	ETYMOLOGY
oil	a naturally occurring, yellow-to-black liquid found in geological formations beneath the Earth's surface	нефт	олио	oily (в общия англ.ез.)	Noun collocations with "oil" - heavy light crude refined offshore engine, fuel, heating, lubricating, motor linseed, paraffin Verb collocations with "oil" - extract, obtain, produce drill for	word oil comes from Old French oile, from Latin oleum,[2] which in turn comes from the Greek ἔλαιον (elaion)

Some of the students preferred to work during the seminar classes, while others preferred to complete the task at home. The students worked on their own using library resources,

terminological dictionary and general language dictionary (either in printed or electronic form) and electronic sources of information.

Analysis of the participating students' work

It is worth noting the large number of students from the different language groups who were willing to take part in the project and showed diligence in performing the tasks – we currently have 88 participating Bachelors. For most of them, the participation in the project was voluntary, with the exception of the KTID students in the 4th year of study who performed the task as part of their exam - since they had already completed their semester at the time when the project started. Herewith, we present a general summary of the results from the individual work of the students with technical texts for the special purposes FLT module.

The students from the three faculties, studying English in the II level group, were provided with original texts with average to low difficulty in correspondence with their level of knowledge of the language. Their task was to get acquainted with the text and to find words defined as technical terms. As a whole, the texts for this level do not include many terms which have different meanings in the technical and general Bulgarian language. In the texts with average level of difficulty the terms which were expected to be retrieved were 15 and 5 in the text with low level of difficulty. The students from MTF received a text related to mine surveying and geodesy. All students from the group managed to find words which are technical terms, to provide a definition for the term and to translate it in Bulgarian. Most of the students succeeded in identifying the etymology of the term. The students from GPF managed to identify the technical terms, their definition and translation to Bulgarian. They encountered no difficulties in identifying the etymology of the words. The students from MEMF worked with a text related to the production of oil and gas. They managed to identify some of the technical terms and most of them succeeded to write the definitions and their translation in Bulgarian.

The students studying English in the III level group were provided with original texts with average to high difficulty in correspondence with their level of knowledge of the language. The students from MEMF received a text with more than 30 terms related to electronics and electrical equipment. This group has lower English language proficiency and hadn't worked very diligently during the semesters, so the students identified between 2 and 4 terms from the text. They encountered difficulties in completing the information in the table. The students from GPF were offered the text "What are minerals?" with more than 35 geological terms. This group managed to complete the task much better in view of the better English language proficiency and the knowledge they gained during their active work during the semester. They identified between 4 and 13 terms from the text.

The students from the German language groups in the two faculties were provided with the following original texts: for the students from MTF the text was related to mineralogy and earth structure (*Das Baumaterial der Kruste. Die Minerale*) from the "Reader" by Senior Lecturer Maria Ketibova, and the students from MEMF worked on the text "Electricity and how to save it" (*Energiesparung*) taken from the Internet site <https://de.wikipedia.org/wiki/Energiesparung>. Three of the students from MTF successfully completed the first 3 to 4

columns from the table. The other 4 students included information in all columns but it was not complete. The analysis of the results shows both very good and not so good knowledge of the terminology. The results of the MEMF students are similar. The student doing AIUT showed the best knowledge.

The students in the French and Spanish language groups in the three faculties were provided with texts with preliminary selected identical number of terms. The project participants identified most of the terms, provided correct definition, and found the Bulgarian equivalent term. One of the students gave a definition in Bulgarian, while the rest of them gave the definitions in Spanish. It was not difficult for all participants to provide the general meaning of the word. One of the students studying French managed to complete the information about the etymology of the terms. It can be concluded that the students from the Spanish and French groups successfully identify terms from the specialized texts.

The students who study Russian language in combined groups from MEMF and GPF also identified terms from specialized texts in Russian and defined their characteristics. They were provided two texts with different difficulty because of the different level of Russian language proficiency. The text "Organisation and implementation of mining saving works in shafts", G. G. Sobolev, ("Организация и ведение горно-спасательных работ в шахтах") was easier and it was given to the group from MEMF. The overall number of terms in the text was 20. The group from GPF was offered the text "Water sewage" ("Канализация") by S. V. Yakovlev with 15 terms to be identified and a higher level of difficulty. In each group all students presented identical tables both in terms of content and formatting. They identified the maximum number of terms and identical information in the columns. This might be attributed to the similarity and kinship between the Russian and the Bulgarian languages. The best results were displayed in the identification of the Bulgarian equivalent terms and the worst – in the general meaning and the etymology. The students managed relatively well to give definitions and derived words. As a whole, the results are very good. To a large extent the correct answers are close to the maximum which is an indication of the sufficient proficiency in Russian language and capability to apply the knowledge in situations closely related to their professional training.

All groups of students who do not study English in the combined groups were also included in the project. The groups included were from the KTID course of study from MEMF (5 groups) and one group from the GGI course of study from GPF. Having in mind that their syllabi include longer term study of English, the terminology training is much more serious and in-depth and starts from the second semester of the first year. For the first time ever the KTID group, 1st year, was divided into two subgroups according to the level of knowledge of English language. Both subgroups worked on three computer texts with different length, complexity and number of terms. The topics were: "Computers in Everyday Life", "Types of Computer", and "Computer Components" for the group with lower level of English language competence and "What is the Computer?" /shorter and extended version/ and "History of

Personal Computing" for the group with higher level of English language proficiency. The two groups did not have any trouble giving the definitions, the translation of the terms, providing derived words and collocations. It is worth noting that all of the students had read a number of electronic sources to provide data for the etymology of the terms. The work of the 2nd year students from KTID was identical. They worked on 5 texts on the following topics: "Computer Technologies", "Operating Systems", "Digital Transmission", "Programming Languages", and "Programming in C++". The students from the 3rd year of study were provided with six texts related to digital data, programming languages, computer networks and network topologies, computer viruses. The participants have very good English language proficiency but they did not take the task seriously and concentrated only on the definition and translation of the terms. The undergraduates from the course of study in KTID worked individually on terms from one-page texts selected among the 30 pages which they had to prepare for the English language exam. Thus, it was not possible for the students to work together on one and the same table, or to multiply the table their colleague had prepared, moreover that each student worked on a different text. Here, the objectivity of the sample was the highest. Notwithstanding the fact that the texts were with a higher or lower number of terms, the students recognized them and, with small exceptions, filled in all cells in the table. It is worth noting however, and this is evident in all computer groups, that the students did not make any difference between the meaning of the term and the meaning of the word in general English. The reason probably is that to those students the computer is part of their everyday life and they perceive computer vocabulary as their daily language, not as a set of linguistic terms. The achievements of the students from the GGI group are more diverse since the students are at very different levels of knowledge of the English language. They worked on topics related to geology: "Rocks on the Earth's Surface", "Mechanical Sediments", and "Weathering of Rocks". Two of the students managed to identify all geological terms and to find complete information about them, while the others managed only to give definitions, Bulgarian equivalent terms and collocations.

Expected results

After the project implementation, *we expect to achieve the following results:*

- improved skills for identifying technical terms in a foreign language and the respective Bulgarian terminological equivalents;
- enhanced communication skills of the trainees;
- developed capacity to work with technical literature and specialized materials;
- the FLT to be compliant with the students' needs and interests and to be consistent with the contemporary trends in the field of education;
- definition of the contemporary trends and the level of influence of the foreign terminology on the Bulgarian one.

The benefits for the students from their work on the project are the following:

- through their participation in the project the students will have the possibility to take direct part in the documentation process of the correct Bulgarian meanings of the technical terms from the respective languages;
- the students, participants in the project, will be able to create banks of terms (including word etymology, synonyms, antonyms, abbreviations, hyponyms);
- thus, the students will be encouraged to actively participate in the education process instead of being only passive listeners;
- the individual research work will contribute to the more sustainable mastering of the technical terminology;
- the individual research work will also contribute to the easier use of specialized foreign texts in their further studies;
- in the long term, the acquired knowledge and skills of the students for individual terminological selection, analysis, systematization and usage will give them a possibility for better professional development in the future.

The benefits for the lecturers from their work on the project are the following:

- the comparison of the results from the students' work in the different language groups (English, French, Spanish, German and Russian) will give the lecturers a possibility to identify the common difficulties in the technical translations from the different languages;
- the comparative research is a possibility to look into examples of the influence of the respective foreign languages on the Bulgarian terminology in the field of mining and geology.

Conclusion

These are the results from the first part of the research. Our aim is to show the long term development of the students' level of foreign language proficiency with regard to the technical terminology and we will continue with the second part of the research in the next year of study.

The students from the three faculties show capacity to work with unfamiliar technical text which is consistent with their level of knowledge of the respective language. They can identify words which are defined as technical terms. They can formulate definitions of the terms in the respective language. They can also translate the term into Bulgarian and to identify the etymology of the term. The analysed works are a reference point for highlighting the etymology of the terms.

The lecturers from the Foreign Language Department will continue with the project implementation and the final results from our work will be published at the end of the year in the annual publication of the Department of the Humanities (HD), "Proceedings of the HD", which is planned within the project's budget.

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The article is reviewed by Prof. Dr. S. Terzieva and M. Papazova.