

**TILTM 2020****Topical Issues of Linguistics and Teaching Methods in Business and Professional Communication****ENGLISH LANGUAGE TEACHING METHODOLOGIES IN THE SCIENTIFIC SPHERE: ENGINEERING SCIENCES**

Francesco Rubini (a)\*

\*Corresponding author

(a) Moscow, Russia, francesco.rubini@mail.ru

***Abstract***

The new socio-political and socio-economic conditions prevailing in Russia over the past decades have revealed a number of problems in the field of higher education and put society before the need to solve them. One of these issues is that of teaching foreign languages. At the same time, a significant intensification of the process of teaching foreign languages by applying effective methods, in particular design methods, contributing to the implementation and improvement of teaching foreign languages at the university level. The importance of this study is also related to how modern-day education interacts with various subjects in different countries of the world, since social processes change not only grammar language aspects, but also the functions they perform in human communication. This article describes methods of teaching English in engineering sciences. The paper analyzes theoretical and methodological bases of knowledge and skills which are key among students of engineering sciences and a study of criteria for selection and distribution of educational material. This research shows that the program designed ensures a full-fledged and efficient level of training for students of engineering sciences. The aim of this work is to substantiate in a theoretical way the design methodology for teaching students of engineering specialties and its practical application in the creation of electronic teaching aids based on modern information technologies. The research hypothesis lies in the assumption that ensuring the necessary level of communicative competence of future engineers is more effective if the learning process follows the project method using digital materials.

2357-1330 © 2020 Published by European Publisher.

**Keywords:** Engineering sciences, scientific English language, methodologies of teaching, foreign languages in the scientific sphere.

## **1. Introduction**

The new social and economic reality consolidated in Russia over the last years has presented a number of important issues in matter of higher education which the scientific community still feels the need to solve. One of these is that of foreign languages teaching at a university level.

Parallely, the new international academic community of today and its standards urge a net and more standardized improvement of the methods of English language teaching, and also the constant meeting of precise didactic requirements, for instance those of the “Concept of the Federal Targeted Program for the Development of Education” (The Russian Government, 2013).

## **2. Problem Statement**

The relevance of the research is strictly connected with the current didactic aims of today’s international scientific community, whose task is also to contribute in the integration and formation of a more and more internationalized spectrum of sciences and schools of thought; in fact, frequently the integration of social processes not only may change the very status of foreign languages in the society we belong to, but also their very communicative functions, for one the keys to understand and accept the variety of different politic and social environments is also the ability to ensure a reliable and effective linguistic comprehension between different peoples or cultures.

The object of the research is the analysis of those methods of English language teaching commonly adopted in preparing engineering students.

The subject of the study is the design methodology for teaching oral foreign language communication in English classes, examining also the observations of Bogacheva (2015) in her research.

## **3. Research Questions**

The main questions of the current research are: the needs university students of today have in studying English Language; the more effective teaching methods and materials for today’s university students of engineering. (Strelkova, 2004).

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

The purpose of this work is to examine the theoretical effectiveness and structure of the design methodology adopted in preparing engineering students and its practical use in the formation and selection, on the basis of modern information technologies, of digital didactic material.

The hypothesis of the research finds its basis in the idea that for our future engineers the guarantee of a high-level of linguistic preparation can be significantly more effective if the didactic process is developed around the main points of the project method with the use of electronic resources.

## **5. Research Methods**

The achievement of this goal required the solution of the following tasks:

1. To provide a scientifically complete and clear definition of the design methodology

2. To foster an effective model for teaching professional communication in English, considering the precise didactic methods, topics and lexicon engineering students need to be acquainted with
3. To point out the precise criteria according to which both the selection and the constant organization of the linguistic didactic material need to be performed, enhancing the necessity for a specialist of guaranteeing a good level of professional communication
4. To develop a reliable programme for engineering students of English language and oral communication, with a high-quality course book, and structured for a didactic module of one academic year, during which each student shall be guaranteed a precise number of home tasks, group works and individual exercises.

The basis of the the work lies in the theoretical and methodological research of both Russian and foreign linguistics specialists, in accordance with the discourse theory on the use of modern information technologies in foreign languages teaching, in matter of studying and structuring a design methodology for teaching a foreign language as a language of speciality.

## **6. Findings**

The study analyzed the educational and professional lexicon of the future engineers, which is revealed to be significantly connected with their entire professional and didactic formation at university, and which develops and improves during their professional activity.

Today the modern schools of thought are aware that, in foreign language teaching, one of the most important tasks for both students and teachers is the formation of effective communicative skills and competences. The use of a foreign language and its study have the precise purpose to develop both general and professional communicative competence.

Based on the practical results of using electronic teaching resources, it can be noted that the project method is a good aid in developing communication skills, and a key feature to learn English for special purposes by understanding the tasks of different activities connected with the precise terminology engineering students need to be acquainted with.

Moreover, the formation of the fundamental key skills for a specialist to succeed in a professional environment has proved that at the same time there is a net improvement in his general communicative abilities, and also an increase in the level of general and professional understanding. Practical results confirm the need to include new elements of design methodologies at the earliest stages of teaching English for special aims.

Thus, the illustrated model of teaching a foreign language in an environment, and with a didactic programme, near to a real type of professional communication provides effective memorization and a good and solid grasp of English; besides, it allows the students to solve a whole range of tasks, which can be useful to prepare them for their future professional activities.

The intensive development of international cooperation in different scientific fields requires an active knowledge of English, which implies the need to speak and understand promptly, read complex texts, and write precise statements.

A special role is given to the use of modern approaches in teaching foreign languages (in deluding design).

The design methodology is related to the main tasks of modern education, which are:

- To make teaching problem-oriented
- To stimulate the ability of students to formulate their own judgments
- To strengthen the degree of the student's autonomy
- To revise the traditional role of teachers and students in class

This involves the mastery of communicative competence, the active component of which is implemented in two ways.

On the one hand, the interaction of theory and practice is observed in the design work, as students use their scientific knowledge and experience, therefore it is much easier for them to feel their progress in facing various problems, which includes the progressive achievement of new abilities and the continuous acquaintance with new information sources. On the other, nevertheless, students have the possibility to practice with a more active cognitive activity when in the process of project work, for the intellectual and communicative need of a student with personality-oriented learning becomes his or her internal motive speech activity itself, while language articulates and formulates thoughts.

The technique of teaching English to engineering students is based on the use of the project method (Jolandan & Zangane, 2019). Students explore standard situations that may arise in their professional activities, propose and discuss various options for the development of events. Working with electronic teaching material involves working on the text, and requires students to perform a wide range of various exercises and tasks aimed at developing their communicative competence, for instance conducting discussions, and preparing presentations. Each learning feature developed in projects forms different types of skills (Ivanova & Pastukhova, 2018).

## 7. Conclusion

As a result of the experimental training, we concluded that the proposed model of teaching foreign languages in accordance with project methodology fully complies with the objectives, goals, and all the scientific requirements of teaching foreign languages. It provides effective memorization and mastering of the didactic material, allows solving a whole range of didactic tasks whose aim is to prepare students for their future professional activities, and contributes to a significant increase of the level of knowledge of English and the formation of applicable skills in various areas of communication.

## References

- Bogacheva, A. V. (2015). The design methodology on the lessons of foreign languages. <https://nsportal.ru/bogachyova-fyfcncfbz>
- Ivanova, S. V., & Pastukhova, L. S. (2018). The possibilities of using the project method in education and work with young people at the present time. *The education and science journal*, 20(6).

Jolandan, N. S., & Zangane, M. (2019). Project method in teaching Russian as a foreign language to Iranian university students. *Vestnik Kemerovskogogosudarstvennogo universiteta. Seria: Gumanitarnye i obshchestvennye nauki*, 3(3(11)), 250-254.

Strelkova, T. G. (2004). *English language for students of machinery specializations*. Severodvinsk.

The Russian Government (2013). On the Federal Targeted Programme for Research and Development in Priority Areas of Development of the Russian Scientific and Technological Complex for 2014-2020. <http://government.ru/en/docs/2129/>