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## Project-based Method in Teaching Foreign Language for Specific Purposes

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### Abstract

This paper considers the innovative methods of teaching Foreign Language for Specific Purposes. The methods are intensively implemented in teaching 3–4-year students at the Institute of Natural Resources, Tomsk Polytechnic University (TPU), Russia. In particular, the paper presents the international project “Approaching the Arctic” developed in cooperation with NTNU (Norwegian University of Science and Technology), Norway. This paper analyzes the efficiency of the implementation of the project-based method in teaching English for Specific Purposes.

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### 1. Introduction

The education policy of the modern higher education institution aims at accommodating the needs of personality, society, and state. Among highly esteemed and sought-after personal qualities, one can distinguish individuality, independence, erudition, originality, and the ability to take the initiative. The process of teaching a foreign language at a technical institution of higher education is unique in terms of its educational opportunities. Today, the

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enhancement of the educational process is one of the priorities in the process of optimizing language education. Experience in teaching foreign language in an institution of higher education allows us to note that both the content and the methods of teaching are changing. Russian methodology at the current stage of its development is searching for new methods and techniques of teaching foreign language. Project-based teaching is one such breakthrough technology , as it allows students to generate their own ideas and to integrate knowledge obtained through different disciplines to solve hands-on tasks.

Currently, the project-based method is a topical issue at many seminars and conferences worldwide and it is intensively used in teaching foreign languages. The method can be successfully implemented in teaching foreign language for specific purposes as it aims for hands-on outcomes, accommodating students' needs and satisfying their interests. The project is an essential element for modern education programmes of institutions of higher education, and this is relevant not only for language but also for technical disciplines. Implementation of group work, and of project work in particular, is a requirement set by international accreditation organizations for higher education programmes in engineering. It is important to note that foreign language for specific purposes is a discipline within which project-based teaching can be intensively implemented. Project activities are characterized by numerous advantages in comparison with other teaching techniques. The main strength of the method is that students immediately turn to their specialty no matter which year of studies they are in. As the previous studies of project-based teaching indicate, students are involved in self-determination and identification of their future prospects (Kopylova, 2003), that is, self-identification in a future profession and motivation to get additional information in the field of the studied discipline. Performing project activities, students not only perform tasks they can cope with but also learn to work in a team, where it is important to listen to partners, agree or disagree with them, give arguments to support one's opinion in other words, to express one's individuality, which is a challenge for Russian students. Working together, students perform different social functions: duty-holder, initiator, expert, and researcher. Thus, they try themselves in different positions and act out various situations which can happen at work. Group work makes communication an essential component of the education process while the topics are learning results: while studying, students exchange their learning results in discussions or disputes. Personal interaction increases students' motivation through social incentives, such as personal responsibility and satisfaction from group success. This changes the traditional attitude to disciplines as they are currently taught – students start feeling they contribute to the group project. As a result, project work not only provides students with specific knowledge but also develops their individual abilities and skills, while foreign language is improves their professional toolbox.

This advantage was pointed out in a publication by the English researcher D.L. Fried-Booth, (Fried-Booth, 2002), who noted that project work allows each student to make a contribution to a shared project, which reflects individual abilities and gifts. As they are all different, students learn to communicate and work together. Besides the advantages mentioned above, project-based teaching can be implemented in self-study activities, which is especially important in view of the reduced number of academic hours assigned for foreign language for specific purposes in accordance with the academic programme.

## 2. Project description

According to Polat's classification (Polat, 2001), in terms of dominant activity (research, informative, creative, role-playing, practice-oriented), the first three project types are readily applicable to teaching foreign language for specific purposes, though the rest can be adapted to the aims and objectives of this discipline as well. To give an example, let us turn to the project work of third- and fourth-year students performed at the Institute of Natural Resources, TPU, where English for specific purposes (ESP) is included in the curriculum.

The project preparatory stage included a survey of students' opinions on how well they were prepared for independent work, as well as their preferences for home assignments and the ways information is exchanged in class. The survey results showed that 75% of students prefer creative forms of independent work (searching the Internet for information, writing and submitting reports, drawing bulletin boards, designing videos, etc.); 80% of polled students prefer doing their home task on teams, as in this case, in the students' opinion, they can find a solution to the problem more quickly , and the results are remembered for longer; 95% find the information acquired

during ESP classes insufficient and would like to exchange additional information. Thus, the student survey revealed their ability to participate in research project work.

To meet employers' requirements, as well as students' needs, and to keep pace with advances in higher education, the Department of Foreign Languages of the Institute of Natural Resources (TPU, Russia) has commissioned the project "Approaching the Arctic" that embraces almost all aspects of case-based teaching. The project is aimed at enabling students to explore the issues surrounding the development of the Arctic region in cooperation with master's students from the Norwegian University of Science and Technology (NTNU). Based on an analysis of petroleum companies' strategies, it was determined that more than half of the companies operating in West and East Siberia plan to be engaged in the development of Arctic hydrocarbon fields. The representatives of the petroleum industry indicated a need for specialists capable of working in harsh arctic conditions and of applying knowledge that would contribute to effective mineral resource extraction (Bolsunovskaya & Bolsunovskaya, 2015). Besides, it is clear that the Arctic region is a unique area not only because of singular ecosystems, but also due to the fact that eight countries possess territories extending beyond the 66th Parallel: Norway, Sweden, Finland, Russia, the United States (Alaska), Canada, Denmark (Greenland), and Iceland. The joint cooperation, which was first initiated on September 19, 1996 by signing the Declaration on the Establishment of the Arctic Council, stipulated that Dr. Arild Rodland, Professor, IPT-NTNU and faculty members of the Foreign Language Department of TPU should launch such a cooperative project. Consequently, the strategic objectives of this project are:

- to enhance cooperative research in the Arctic region within the framework of higher education;
- to encourage students to apply theoretical knowledge in respect to real practical challenges and reflect on their understanding of theories and on their foreign language competence.

The duration of the project is almost three months and its implementation includes several stages. At the first stage, students must organize a team by themselves. However, the main focus of the first stage is not only to build up a team, but also to set a basic goal for the project, elaborate the work plan, and define the structure of the team, particularly, the numbers of sub-teams. As the project consists of a number of stages (starting from team formation and ending with a presentation of research results, including the development of a work plan, data analysis, appraisal of hydrocarbon reserves, a feasibility study, and a field development risk assessment), the team must be made up of students from various departments and with different educational backgrounds. As in any team, a team leader is selected by team members. Team structure is defined in relation to the project tasks, which can vary from project to project but in most cases refers to the development of a certain field located within the Arctic region. Each sub-team is accountable for its definite task set by the scientific advisor who is typically a faculty member of the relevant departments. The faculty member of the Foreign Language Department is responsible for issues related to the English language itself, data searching and analysis, and making and preparing oral presentations. The structure of the team and of the project itself, including its goal and objectives, are discussed at the first on-line meeting with the students and scientific advisors of NTNU. The strategic objective of the first meeting is not only to present the projects of the two teams, but also to find common ground for further collaboration between the Norwegian and Russian universities. One of the most important requirements of the first meeting is to create a special email address or social network group to share and coordinate research activities.

The second stage of the project is devoted to the research itself, that is, to the achievement of certain research objectives set at the first stage. All the problems and challenges which arise in any given sub-team during the project, are stated in terms of technical tasks and are discussed weekly at general meetings in order to find the most appropriate solution. At each meeting, sub-teams present their interim research results, which are thoroughly discussed by all members of the team. The efficiency of each sub-team is assessed according to the obtained results and these results, in turn, anticipate the achievement of the final goals and objectives.

The final stage is an on-line conference, where TPU and NTNU students present their findings, discuss the results, and define follow-up actions concerning the development of the Arctic region. To make the discussion more effective, the presentations of both teams are sent in advance to all members of the project. At this stage, special attention is also given to the development of presentation skills and competence in public speech. Students are encouraged not only to defend their position, but also to listen to opponents, to try to find a solution to the problem under discussion, and to overcome various disagreements.

Therefore, it can be stated that the project-based method, which has been introduced at TPU, corresponds to real-world petroleum engineering as it embraces almost all stages of oil and gas field development and provides students

with the opportunity to gain experience in solving complex engineering problems, distributing roles and responsibilities, defending their position in a foreign language, and carrying out research in an international environment.

### **3. Results and discussion**

At the end of each project, the Department of Foreign Languages carries out a survey aimed at revealing the opinions of students and faculty members about implementing project-based methods in general and the project "Approaching the Arctic" in particular. The proposed survey questions are as follows: "Are you satisfied with your participation in the project?", "Have you found any limitations to this project?", "What are the main advantages of this project-based method?" Let us provide the results of the survey carried out in 2014. In general, both students and faculty members held a positive view of implementing such project-based methods in Higher Professional Education. Precisely, 96% of respondents (students) agreed that they were satisfied with participation in the described project. The majority of participants did not notice any disadvantages or limitations to project-based teaching. Some respondents, however, noted a number of difficulties encountered during the project, such as a lack of time and limited access to the required technical facilities, program tools, and scientific data. It is worth noting that the revealed limitations should be considered in further educational program development and can be easily eliminated through appropriate curriculum planning and financing. Most respondents reported finding project-based methods effective for learning both English and their major subject as they stimulate students' creativity and interest and encourage them to work in a collaborative team environment.

The project work during ESP classes in TPU should be combined with another innovative and widely used technique – case-study. Its idea consists in the fact that students are given a set of learning materials in a case. Having learnt the materials, the students are required to suggest new perspectives to the problem discussed. The students are to propose their solution based on their professional knowledge and skills (Shchukin, 2010). In fact, this technique in ESP teaching is certain to presuppose definite language and professional training, allowing students to use their acquired knowledge practically. When formulating the problem, it is important to collaborate with engineering teachers who are able to set a problem correctly, define the stages of its solution, and make the problem interdisciplinary. As Ch. Chien and M. Hsu define it, "English teachers will then be able to develop an ESP curriculum that takes the classroom into the real world and brings the real world into the classroom" (Chien & Hsu, 2010).

It should be noted that participation in projects allows students to compile their portfolios with resumes, presentations, certificates, and diplomas. It permits these future specialists to present their achievements, foster their skills in document design, and become aware of the practical significance of their learning activity.

### **4. Conclusion**

In conclusion, we would like to highlight the basic attractive characteristics of the techniques considered above, namely an increase in students' motivation for learning activity, development of interest in foreign languages, a focus on practical outcomes significant for all project participants, growth of students' world view, conditions for enriching communication both in native and foreign languages, and fostering skills of professional communication. It should also be noted that using these techniques in arranging students' independent work in ESP, the role of the teacher changes greatly. Depending on the project stage, the teacher may be a consultant, observer, helper, source of new information, or coordinator. The application of innovative techniques in educational activity is an indicator of a teacher's high qualifications, his or her advanced teaching experience, and students' progress.

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