

**КУЛЬТУРА БЕЗОПАСНОСТИ И  
СОЦИАЛЬНО-ПРАВОВЫЕ АСПЕКТЫ РАЗВИТИЯ  
ТЕРРИТОРИЙ РАЗМЕЩЕНИЯ ОБЪЕКТОВ  
АТОМНОЙ ОТРАСЛИ**

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**ФОРМИРОВАНИЕ ЯЗЫКОВОЙ КОМПЕТЕНЦИИ СТУДЕНТОВ  
ВИТИ НИЯУ МИФИ В СВЕТЕ ЭКСПОРТООРИЕНТИРОВАННОЙ  
ПОЛИТИКИ ГК «РОСАТОМ»**

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Статья посвящена формированию языковой компетенции в рамках коммуникативно-ориентированного подхода в свете требований Госкорпорации «Росатом». В статье рассматривается компетентностный подход, ориентирующий на организацию учебно-познавательной деятельности. Представлен опыт использования современных коммуникативных технологий, интернет-ресурсов, онлайн сервисов, предложены пути совершенствования процесса обучения. Рассмотрены компетенции, приобретаемые в результате изучения иностранного языка.

*Ключевые слова:* коммуникативные компетенции, компетентностный подход, коммуникативно-ориентированный подход.

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The modern world is changing rapidly, countries no longer seem distant, thanks to digital technologies, borders have been erased, and everyone has the opportunity to communicate with citizens of other countries without leaving their states, cities and even apartments. And to achieve these goals, you need a language that is understandable. The strategy of the Foreign Languages Department of VETI NRNU MEPhI is aimed at the formation of the students' language competence at the technical university, which is located in a unique place - Volgodonsk, which is the only city in the country where enterprises of four divisions of Rosatom State Corporation operate: from the equipment production for nuclear power plants, its installation and commissioning, to direct operation and maintenance.

Today, the mission of the nuclear industry is to establish leadership positions in the global technology market by 2030 and to ensure state interests: maintaining the country's nuclear potential, solving legacy problems, energy security [1]. Fulfillment of the mission requires setting and achieving strategic goals of increasing the share in international markets, which implies the participation of specialists from our university in all types of cooperation and work abroad, which accordingly requires high-quality language training. The ambitious goals set by Rosatom State Corporation require appropriate staff support. In this regard, one of the tasks of NRNU MEPhI and its regional branches is to increase the efficiency of training highly qualified personnel for nuclear industry enterprises in profession-oriented specialties in order to strengthen the positions of the university and Rosatom State Corporation on the global nuclear technology market in the countries of presence.

Thus, ROSATOM has created a consortium of basic universities and is actively developing cooperation with Russian research centers and higher schools to implement joint

innovative projects that are of great practical importance for the domestic nuclear industry. These tasks are reflected in the Project «Development of the National Research Nuclear University for 2018-2022» to ensure the development of the English-speaking environment of the NRNU MEPhI University.

For the effective implementation of the export of Russian education and training of personnel for international projects in partner countries of ROSATOM, it is planned to train national personnel for the operation of nuclear power plants under construction and other high-tech facilities abroad, to provide high-level language training for Russian students as future specialists in the field of promotion high-tech projects of the nuclear industry abroad. One of the most important goals of the project is to ensure the development of the English-speaking communicative environment of the university by increasing the level of English proficiency among the students and university staff. [2]

VETI NRNU MEPhI, carrying out educational activities, acts as the innovative core of the industrial and educational cluster, consolidating the enterprises of the four divisions of Rosatom State Corporation in Volgodonsk and providing advanced training of specialists to implement the export-oriented strategy of State Corporation Rosatom. Support for foreign projects is implemented through the development of the Resource Center of the State Corporation «Rosatom» - NRNU MEPhI, focused on training foreign students for nuclear power plants abroad, the authors described in more detail in the article «Social Adaptability Features of Technical University Students in Polycultural Environments (on the Example of Working with Foreign Students within the Work Practice in the Resource Center on the Basis of Rosatom Enterprises)»[3].

Today, VETI NRNU MEPhI orients its strategic development as an international educational and production center (IOPC) for the provision of personnel and promotion of domestic nuclear technologies to the world market in order to maintain positions in the nuclear power industry leadership.

In accordance with the export-oriented strategy of the State Corporation Rosatom, the socio-cultural context of the study of foreign languages has changed significantly. Their educational and self-educational functions in higher educational institutions, their professional importance in the labor market as a whole, have significantly increased, that resulted in increased motivation in learning the languages of international communication. Accordingly, the demand for the use of foreign languages has increased. New tasks imply changes in the requirements for the level of language proficiency, the definition of new approaches to the selection of content and organization of material. The content of modern education in higher educational institutions is determined by communicative goals and objectives at all stages of education, where training is aimed at developing a communicative culture and socio-cultural education, which allows them to be equal partners of intercultural communication in a foreign language in everyday, cultural and educational and professional spheres [4]

The response to new trends in the industry is «the joint development of requirements for graduates and the participation of experts of the State Corporation in the educational process and quality control of graduates» as noted by E. Vesna, Vice-Rector for Academic and Methodological Work, NRNU MEPhI, which determines the main directions of development of NRNU MEPhI and its branches in the training of specialists for the nuclear industry [5].

What to teach and how to teach students in the modern world is the main issue on which scientists of all directions, teachers, politicians are trying to give recommendations. Among the 10 most demanded competencies of the future, there are [6]:

- the ability to solve complex problems, the need for the owners of such competence will increase by 52%;
- critical thinking; this competence is also among the key ones in forecasts for 10-15 years, since almost any information can be found in the public domain, but «to

understand what is really valuable and trustworthy in this stream, selection skills are needed»;

– creativity, as the ability to find a non-standard approach, it is this skill that will become necessary due to the complication of processes in general, and people who are able to «give out» what the search engine does not know will be appreciated.

All of the above makes universities look for more productive methods and forms of education for the modern student. Digital technologies in universities have become the basis for the redistribution of study time in favor of «real practical and project activities of full-time students, deeply focused on the educational process» [7].

There is a need to search for new approaches and methods that would allow to make effective education in the field of foreign languages within the framework of their studies at the university and active preparation for professional activity at the enterprises of the State Corporation «Rosatom».

In accordance with the project «Development of the National Research Nuclear University for 2018-2022» by 2022, 50% of graduates of our institute should have a command of a foreign language at the Intermediate level. This indicator is determined by the Passport of the Development Program indicator, and in the same passport a list of specialties is determined, the graduates of which must show a level of language proficiency not lower than Intermediate. Much work has already been done to meet this requirement. The most significant event is the change in the program content of the discipline «Foreign language» both in terms of increasing the number of hours (almost four times), and in terms of content.

Within the framework of the competence-based approach, specific skills and competencies of students required for the nuclear industry are taken into account. The main competence of the discipline «Foreign language» is as follows: the ability to apply modern communication technologies, including in foreign language (s), for academic and professional interaction. Therefore, the staff of the department uses the most effective method of teaching foreign languages - the communicative method (The Communicative Approach).

The communicative approach in teaching foreign languages (Communicative language teaching) is one of the methods of learning foreign languages. The main goal of training is the formation of the students' communicative competence, which is described in more detail in the authors' article «Communicative Competences in the Process of Foreign Language Teaching at a Technical University» [8]. In this work, the meaning of this term will be clearer and more understandable if we compare it with the concept of grammatical competence.

Grammatical competence is the ability to build phrases and sentences, use and coordinate tenses, this is knowledge of parts of speech and how different types of sentences are arranged. Grammar competence is usually the focus of many textbooks that provide specific grammar rules and exercises to practice and reinforce those rules. Undoubtedly, grammatical competence is an important, but far from the only aspect in language teaching. A much more important and complex aspect is usage, on which the communicative approach focuses. A person who has fully mastered all the grammatical rules, who knows how to construct sentences, can find difficulties in real communication, in real communication in a foreign language. That is, a person will lack communicative competence. It should be borne in mind that the communicative methodology of preparing students is already being used to prepare for testing in the formats of international British exams in English [9].

The communicative competence can include the following aspects:

– knowledge of usage, that is, how, by whom and when the language is used for different purposes and functions,

– knowledge of how the language changes depending on a particular communicative situation and the participants in this situation (for example, knowledge of the differences between formal speech from informal, oral from written).

- the ability to create, read and understand texts of various types and natures (for example, stories, interviews, dialogues, reports).
- the ability to maintain a conversation even with a limited lexical and grammatical base.

One of the main differences of the method is the use of induction, not deduction. That is, there is no need for the teacher to read lectures and formulate rules: they themselves are comprehended by the student even without their verbal formulation. Previously, teaching foreign languages was mainly aimed at developing grammatical competence.

It was believed that grammar exercises that did not take into account the context helped to develop the habit of using the language correctly. By memorizing dialogues and phrases by heart, correcting mistakes in oral or written form, constant monitoring by the teacher in the old methods, they unsuccessfully tried to avoid incorrect speech.

However, the communicative approach, first of all, focuses not on the correctness of linguistic structures (although this aspect also remains important), but on other parameters:

- awareness of possible options for the development of dialogues, that is, the interaction of participants in the process of communication,
- understanding and achieving a common communicative goal,
- developing the skill of paraphrasing, that is, trying to explain and express things in different ways,
- expanding the competence of one participant in communication through communication with other participants.

The communicative technique, as its name implies, is aimed precisely at the possibility of communication. Of the 4 main aspects on which any language training (teaching writing, reading, speaking and listening comprehension) is based, the latter two are given special attention.

A foreign language, thus, as an instrument of cognition in the context of communication-oriented learning, also becomes a means of professional education. Since all operations with language are understood in the mainstream of pragmatic theory as an action, the methodological system of the communicative approach also considers the learning process as an action performed with the language and in the language. So this methodological concept assumes greater activity of students and the loading of the maximum number of channels for receiving information as a prerequisite for successful memorization and further use of language information.

When using communicative approach, a teacher does not lecture and does not formulate rules using grammatical terms, but, as a rule, acts as an assistant, friend, and advisor. The focus is on group teaching. The task of the teacher and students is to learn to work together, to move away from individualized learning. The student learns to listen to his peers, conduct conversations and discussions in the group, work on projects with other group members. The student focuses more on his groupmates than on his teacher as a model. An effective method is also to involve the student in a professional language environment at the same time as studying in a communicative language group, exercises and assignments that are used in teaching foreign languages according to the communicative method, communicative games, communication exercises.

To make the lessons more varied and the process of memorizing new language constructions more effective, the teacher uses video and audio materials in addition to teaching aids, oral and written exercises. Reading and listening to podcasts dramatically speeds up the process of introducing learners into the language environment.

The main textbook for teaching a foreign language is *Navigate*, Oxford University Press. The textbook contains new interesting texts, modern global topics, is equipped with an excellent electronic platform for a teacher with video and audio assignments, tests, additional materials. But in connection with the requirements of modern trends and the digitalization of

the educational process, the teachers of the department create lesson books based on the textbook, where they insert hyperlinks to services, platforms, sites for additional, independent work of students to master a foreign language. This filling with Internet resources allows students independently to master the material that they need. Audio and video files are embedded in the electronic version of the textbook, as well as links-transitions to homework are given.

For better vocabulary memorizing in the classroom and at home, the Quizlet service is used – this is a free service that makes it easy to memorize any information presented in the form of training cards. The teachers of the department create interactive material – their own cards, adding pictures and audio files to them, and then students, performing exercises and playing games, memorize this material. Students can answer the teacher-created tests from tablets, laptops, smartphones, that is, from any device that has an access to the Internet.

The use of this electronic toolkit in the training process has its own algorithm. To do this, we add to Quizlet the words we want to practice, and pictures to them for better memorization. As a result, we get several exercises that are formed automatically:

1. Memorization. We are given an English word and 4 options from which we can choose the correct option.

2. Cards. All the added words are in the form of cards, where on the one side is an English word, on the other is its translation. It is good to learn new words.

3. Writing. The Russian version of the word is displayed and you need to enter the translation in English manually.

4. Spelling. In this exercise, the system pronounces an English word, and you need to type what you hear. The Russian translation of the word and its picture are also displayed.

5. Test. The system automatically generates 4 types of tests with five answer options:

– «5 questions for a written answer» – a word is given in different variations and you need to type its translation manually.

– «5 questions to match» – you need to match the word and translation in the format 1-A, 2-B, and so on.

– «5 multiple choice questions» – a classic type of test with one correct answer.

– «5 questions true-false» – determine if the translation proposed by the system is correct.

6. Matching. In this exercise, you again need to combine the word and translation, but here also an element of competitive play is added - this must be done for a certain period of time and the result is compared with other users who have played this game.

After learning the words, the teacher sees statistics and tracks the progress of the students. Quizlet is used not only as a learning tool, students are encouraged to create a set of vocabulary cards themselves on a topic covered or a topic planned for independent study. When compiling assignments, the student must decide for himself to select the vocabulary of interest to him on the studied topic, find a translation and visual illustration of a particular term. Such work stimulates the student's cognitive activity and allows a more meaningful approach to the material being studied.

In addition to the service for memorizing vocabulary, the teachers of the department use many other platforms and services. Services WordWall, Liveworksheets and many others are used to teach grammar.

The WordWall service is easy to use and helps you create exercises that are optimal for both an interactive whiteboard and for individual work on computers, does not require special knowledge and skills from the teacher, and allows you to create interactive exercises using images and tests. The built-in image finder automatically finds and suggests images. In addition, an online editor allows you to perform exercises remotely and collect statistics on student assignments.

Online exercises are simple, but full-fledged computer games, the condition for passing which will be the solution of the tasks set by the teacher, based on the requirements of a particular lesson. The content of each game can be changed, supplemented as students' progress through the English language learning program grows. The opportunity to sound the game moments is intended for the formation of pronunciation, lexical and grammatical skills in the use of linguistic phenomena. One of the advantages of the WordWall service is the existence of a program for creating and using exercises offline. On any computer without the Internet access, you can install software and provide exercises on electronic media. The program has a clear user interface in many languages. Flip Tiles are double-sided cards on which you can use both images and text. This element is convenient for stimulating oral statements in pair work, and when the card is turned over, a self-test is carried out. The Random wheel offers a random selection of a task, sentence, question or topic for work, introduces an element of the game into the process of forming grammatical skills, can also be used at the stage of controlling language skills, when teaching speaking on a situational basis. Brainstorming provides an opportunity to create visual notes. The program immediately shows the correctness of the answer, which allows the student to correct the mistake on his own, thereby relieving stress and fear of control and creating a situation of success. [14]

Making sentences replaces boring written work, makes it easier to memorize the structure of sentences, develops attention, the ability to distinguish and understand words in a sentence, a semantic guess. The «Sort by Rank» template is a ranking of words, sentences, images, used in the classroom to plan a text, arrangement in alphabetical order or grammatical pattern. You can convert the content of the created exercise according to one template to another type of exercise using the same material, practicing it with different exercises. Thus, the lexical or grammatical material of one topic is worked out in different exercises.

The transition from traditional forms of knowledge control and assessment to testing is causing controversy and criticism. Testing has become a standard method for assessing students' knowledge, allowing to identify gaps in current training and form an individual learning pace.

Testing using Internet services is easy and convenient. Online services make it possible to create tests and quizzes on the Internet in a few minutes; test students online or offline; publish/send a link to the created test or quiz to students via e-mail, place it on the website, forum, blog.

Electronic forms have the main advantage over the usual «paper» survey - they save time on collecting, processing data and make it possible to refer to the survey results when you need them.

Quiz allows to create a questionnaire test with any number of questions and answer options. It works like a regular questionnaire which is used at all stages of mastering the material: when teaching vocabulary and grammar; to control reading or oral comprehension when teaching reading or listening; for complex testing or preparation for tests.

Liveworksheets is a great resource for creating interactive self-checking worksheets.

It allows any worksheet in *doc* or *pdf* format to be converted into an interactive one. It is a powerful and easy tool for creating interactive worksheet assignments electronically. It contains all the tools a teacher needs to create interactive sheets. The grade is calculated immediately upon submission and the completed assignments with grades written on the sheet are accumulated by the teacher in the box «[www.liveworksheets.com](http://www.liveworksheets.com)». No student registration is required. He receives the task simply by a link. The score is transferred into ekool. The task is compiled on the basis of a *Word*-document or a scanned picture from any textbook, it remains to place only interactive controls (drop-down lists, multiple selection, yes / no checkboxes, connection by lines, etc.). It is convenient and fast. Especially if there is a lack of textbooks. An explanatory video (pre-uploaded to Youtube) can also be inserted into the sheet. When working with students in remote mode, the question of how to use the

existing workbooks arises. According to the federal project «Digital Educational Environment», it is envisaged to reduce the use of paper exercise books in educational institutions and replace them with digital counterparts.

Electronic interactive workbooks take full advantage of new technologies applied in education: they can include sounds, videos, drag-and-drop exercises, multiple choice ... and even conversational exercises that students perform with a microphone. Using the Liverworksheets service, you can create an interactive exercise book from a set of individual worksheets for students to work on.

The teachers of the department provide students with the necessary educational and teaching materials for the discipline, downloading them in the LMS Moodle (Learning Management System), which allows to create a networked environment of virtual e-learning, which includes the means of preparing and delivering educational content, as well as management of the educational process, which is very convenient for distance learning. Moodle provides a complete set of knowledge testing systems: tests, assignments, seminars, forums. The teacher has access to automatically created attendance scales and grades set in manual or automatic mode. The teacher can also control the communication regulations: indicate the number of works and the timing of their completion, determine the volume and characteristics of assignments, schedule consultations, clarify its form (through the system or onsite). Thus, almost immediately you can start using the capabilities of the system for educational purposes, that in some cases (working with students who are not able to attend classes) is very important.

The special role of using this toolkit is to conduct entrance and intermediate control in the process of teaching, which allows one to determine the level of students' readiness for a lesson or the level of mastering the material immediately.

Based on the results of intermediate attestations, the productivity of the application of the communicative methodology and online e-learning services for a foreign language is confirmed by:

1) improving the quality of student education, which they demonstrate during the examination session, including Internet exams, Rosatom testing;

2) high ratings of satisfaction with the educational process in the surveys «Teacher by student's impression»;

3) openness to changes and improvement in accordance with the new electronic tools and modern teaching methods, new trends in the development of education, the current requirements of employers in accordance with the development of the nuclear industry.

So, we found out that the formation of communicative competencies is necessary to reach modern intensive methods that have a communication-oriented nature in achieving practical knowledge of a foreign language, which will allow the future specialist to use the language in professional activities effectively. The implementation of the listed activities aimed at solving the priority tasks of the main industrial partners, enterprises-employers, allows VETI NRNU MEPhI to enter a competitive level, fulfill the efficiency criteria established by the current legislation, and train personnel in accordance with the strategy of innovative growth of the national economy.

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### Language Competence Formation Among VETI NRNU MEPHI Students in the View of State Corporation «Rosatom» Export-Oriented Policy

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**Abstract** – The paper is devoted to the formation of language competence within the framework of a communication-oriented approach in the light of the requirements of the State Atomic Energy Corporation «Rosatom». The paper discusses a competence-based approach that focuses on the

organization of educational and cognitive activities. It presents the experience of using modern communication technologies, Internet resources, online services. The ways of improving the learning process are proposed. The competencies acquired as a result of learning a foreign language are considered.

*Keywords:* communicative competencies, competence-based approach, communication-oriented approach.