CONTEMPORARY TECHNOLOGIES OF TEACHING FOREIGN LANGUAGE COMMUNICATION IN MARINE ENGINEERING

ALLA MATUSZAK

Summary

The article describes teaching foreign language speech skills to students of technical professions, namely students of marine engineering. Communicative technologies, student-centered technologies, problem solving and interactive technologies are characterized. Communicative technologies are presented on the basis of the technology of charts by E. Passov and the method of communicative tasks as part of G. Kitaigorodskaya' intensive technology, and student-centered technologies are presented on the basis of cooperative learning, portfolio and project work. In the description of cooperative learning technology emphasis is laid on "Student Team Learning", "Jigsaw" and "Jigsaw-2", "Learning Together". Interaction technologies are presented by "Group work", "Moderation", "Brainstorming", "Case study", "Role play". Problem solving in teaching foreign languages is viewed in the paper as using problem tasks. To characterize each technology a sequence of steps which guarantees the planned teaching effects is described. Technologies are supplemented with examples of tasks in teaching English in marine engineering.

Keywords: communicative technologies, student-centered technologies, problem solving, interactive technologies

1. Introduction

The contemporary higher education in any country envisages teaching foreign languages. One of the most difficult tasks is teaching foreign languages to future specialists in non-humanitarian professions with a view to effective communication. The complexity of the task depends on the fact that our mind is two-sided. Science, mathematics and engineering develop the rational side of mind rather than the emotional and intuitive one. Language learning enhances the development of the intuitive side. Hence, teaching effective communication contributes to the harmonious development of the mind of a student studying technical disciplines.

To successfully teach effective communication in a foreign language it is reasonable to sum up the existing technologies of teaching speech. The author of the paper largely relies on the technologies implemented in present-day Russian higher school, since most of her teaching experience was gained in Russian Universities.

Regardless of the fact that foreign language examinations in Europe mostly depend on written tests, the importance of speech cannot be overestimated. The effective communication in a foreign language while having a job interview depends on the applicant's ability to speak coherently and

fluently. The employer's positive reaction to the applicant's answers is only partially connected with his/her professional qualifications but largely depends upon the ability to communicate the content in a correct foreign language. Consequently, in the present article emphasis will be laid on teaching speech skills to students of technical professions, namely students of marine engineering.

2. Communicative technologies of teaching speech

By technology in the present paper "the sequence of steps which guarantees the planned educational effects"[5] is understood. The contemporary technologies of teaching speech may be subdivided into certain groups[8]. Among them there are communicative[6], student-centered[7], interaction technologies[1], problem solving ones and several others. In the paper only some of them are going to be viewed.

Communicative technologies seem most promising in terms of teaching speech, as they aim at improving communication skills. Two variants of communicative technologies considered here are recommended in case of teaching oral monologue in class. The most widely spread in Russian foreign language teaching is the variant of communicative technology worked out by E. Passov[6]. According to the technology speech is taught with the help of charts. In teaching marine engineering the chart technology might include the following information (Table 1).

Table 1. Teaching speech to future marine engineers on the basis of charts

Questions	Translations	Profession 1	Profession 2
1. What are you?		Motorman	marine engineer
2. What is your responsibility on board?	wykonywać prace w siłowni nadzorować prace motorzystów	to perform work in the engine room	to supervise the work of motormen
3. What does the responsibility include?	obsługiwać i naprawiać urządzenia i maszyny w siłowni nadzorować i naprawiać urządzenia i maszyny w siłowni	to operate and repair devices and machines in the engine room	to supervise and repair devices and machines in the power plant
4. How did you get the qualification?	ukończyć kursy ukończyć studia na Akademii Morskiej	to complete courses	to graduate from Marine University
5. What is the regime of your work?	pływać na 4-miesięcznych kontraktach pływać 4 tygodnie na 4 tygodnie	to sail on four-months contracts	to sail four weeks to four weeks
6. What is the regime of work at the power plant?	system dniówkowy system wachtowy	daily system	watch system

Source: Independent research.

Students are given expressions to make up sentences. First the expressions from columns 3–4 are read in chorus. Then students are supposed to answer the questions given in the first column of the chart so that to make up a short monologue. The monologue has options programmed in different columns of the chart. The first task can be: "Speak about your future work on the vessel, use the chart. It is requested that you use the phrases not only from one column you choose, but from the other columns too". In the example discussed students are supposed to speak about the work of a marine engineer or a motorman.

The second task is done while the chart has been taken away. The task may be: "Prove that the work of a motorman is interesting". At the end of the lesson students can make up several spontaneous sentences on the topic. In methods of foreign language teaching monologues of five to seven sentences are considered "the core of monologue" which is the initial stage of teaching speech. It is believed that if a student can say this amount of sentences, he/she is equally able to pronounce longer monologues. Consequently, the chart serves the aim of teaching the core of monologue.

2. The second option of communicative technologies is the technology based on communicative tasks. Communicative tasks exist as a separate technology, they also make part of the intensive technology by G. Kitaigorodskaya[4]. Here the second instance is viewed.

Communicative tasks are characterized by two levels of complexity: the level of the language to practice grammar and vocabulary; the level of speech[2]. These are examples of communicative tasks on the first level.

- Introduce yourself to another student of your University group. Make up a short dialogue. Here is the example of your conversation:

- Hi! How are you?
- Fine, thanks.
- My name is … What is your name?
- I am … Nice to meet you.

- You have five minutes to make friends with as many students in your University group as possible. Go about the classroom and conduct the conversation as in the example above.

There is an example of communicative tasks on the second level.

- You are a motorman. Listen to the instructions of a marine engineer at the power plant. Ask questions to better understand what you are to do.
- Listen to the questions of a marine engineer. Answer them.

During a class of two hours fifteen communicative tasks are to be completed.

3. Student-centered technologies of teaching speech

Student-centered technologies were worked out in western systems of foreign language teaching, then they became popular in Russian higher school. Traditionally the technologies are subdivided into the basic groups: cooperative learning, portfolio, project work. The use of each group in higher school depends on the major field of studies, on the students' level of the foreign language, on the lecturer's choice. The most interesting technology from the point of view of teaching foreign speech is cooperative learning. Here the examples of using different variants of the technology will be shown.

1. Cooperative learning is not a homogeneous technology. Among its variants there are: "Student Team Learning", "Jigsaw", "Learning Together"[7].

- In "Student Team Learning" the students' group is subdivided into subgroups of approximately four students each. The subgroups get different tasks to eliminate competitiveness. The tasks might be as follows. "Describe the work of a motorman at the power plant", "Speak about the responsibilities of a marine engineer on board". The students in each group make up one monologue assisting each other, the teacher corrects and evaluates the task listening to one student.
- In "Jigsaw" technology teams (groups of six students) work at one task, one topic. E.g. the topic is "Work in the engine room of a boat". Each student has a different part of the material so that the whole content can be obtained only in cooperation of all members of the team. E.g. parts of material to be covered by separate students (members of a group) are: "The mechanism of the engine room systems", "Engine room systems functioning", "Responsibilities of motormen", "Responsibilities of marine engineers", "Regime of work at a power plant". Students first perform the tasks separately, gathering the part of the material to be mastered individually. In class students from different teams with the same portions of material gather at one table to share the material with the other students, who worked at the same problem. These students are called "experts". As a result each expert has learned the same content of his/her task. Experts return to the teams and each of them relates the content to the other students. So at the end of the class each student has mastered the whole material of the topic.
- A possible modification of the technology is "Jigsaw-2". Its difference from the regular "Jigsaw" technology is that in the modification students are supposed to prepare the whole topic for the lesson, while one part of it is prepared in a more detailed way. Each student is considered to be an expert in the part of the material prepared in full detail. The rest of the class follows in the same way as described above.
- The technology "Learning Together" is very much similar to "Jigsaw", the difference lies in the fact that different groups work at different parts of material. E.g. if the topic of the lesson is "Work at the power plant of a boat", the tasks of different groups are: "The mechanism of the power plant", "Power plant functioning", "Responsibilities of motormen", "Responsibilities of marine engineers", "Regime of work at a power plant". Each group includes three to five students. If the task of the group is "The mechanism of the power plant", different students may be given the tasks to describe different parts of the mechanism. Unlike "Student Team Learning" in "Learning Together" different groups share the material with the other groups for every student to master the whole information.

2. Portfolio is another type of student-centered technologies. First it was used in school foreign language teaching, later it was applied to professional education in the form of **European Language Portfolio (ELP) for Adult and Vocational Language Learners[10] in European Union and Portfolio for Vocational Language Learners in Russia (used in foreign language teaching at South Ural State University)**. "Like other ELPs, the adult ELP is not designed to replace existing courses or qualifications, but to complement these by enhancing the learning process and providing a single collection point for evidence of all an individual's linguistic and intercultural skills. It can also be used for benchmarking skills levels, setting objectives and charting progress".

A portfolio consists of "Adult ELP passport", "Adult ELP biography" and "Adult ELP dossier". "Passport" briefly reflects the results of a given learner in a foreign language. This part is

a self-assessment of language learning. "Biography" envisages determining the actual level of mastering the language using the scale of proficiency (A1, A2, B1, B2, C1, C2). "Dossier" is a collection of materials and works carried out by the learner in the foreign language to support the self-assessment, to be shown to the employers. Here results of different standardized examinations, essays, prizes connected with language learning may be kept.

The experience of **South Ural State University shows that the use of portfolio technology, first, motivates students to achieve results in language learning. Secondly, it raises the quality of foreign language teaching. The portfolio also makes it easier for the lecturer to assess students' work in the course of study** as "these additional materials for tutors and learners provide a useful tool for recording progress and achievement to meet the inspection requirements of RARPA (Recognizing and Recording Progress and Achievement in non-Accredited Learning)"[9]**.**

RARPA has certain stages of work which consist in:

- setting course aims appropriate to the learners,
- undertaking an initial assessment to establish the learner's starting point,
- identifying learning objectives appropriately challenging to the learner,
- recognition and recording of progress and achievement throughout the course,
- end of program learner self-assessment and tutor assessment.

To assist lecturers in implementing ELP the following Tutor pack and supplement to support the RARPA process has been devised. The pack contains: a Guidance sheet, additional ELP Biography Progress and Achievement Pages for the learner to record their progress against the objectives set at the start, Group Record of Progress and Achievement sheets, sample Record Sheets to provide an instant overview of the whole group's progress and achievement. The materials are successfully implemented in teaching foreign languages to students of technical fields in some Russian higher schools, hence their positive effect can also be expected in marine engineering.

3. Project work is becoming increasingly popular in all educational systems. The role of this technology in professional education cannot be overestimated. Students' ability of project making in a foreign language is extremely useful. The projects made by students of different professions might belong to different types. E.g. technical disciplines require research projects, while learning arts may involve artistic projects, language studies are connected with applied projects.

Possible topics for technical projects in marine engineering are "Power plant functioning on different types of vessels". The project has the problem of research aimed at comparing different power plants mechanisms, functioning, operating the power plants. In the course of work students formulate hypothesis, determine methods of research to be implemented, ways of collecting and systematizing the obtained data, possible results and ways of presenting the project. Typical students' projects might be short-term group interdisciplinary projects. The lecturer's part in the work may be different. He/she may take part in the work of the group as a participant assisting the students, or lead the work as a coordinator.

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4. Interaction technologies of teaching speech

Interaction technologies are of six basic types which include "Group work", "Moderation", "Brainstorming", "Case study", "Role play"[1]. Below we give examples of using some types of technologies in teaching foreign languages for special communication.

1. "Group work" includes three stages: introduction, teaching, conclusion. It is advisable that students work in subgroups (teams) of seven. These subgroups are going to discuss professional problems in a foreign language. Hence, the lecturer prepares problems for the discussion which might be of interest to students. Within the team it is advisable that roles are distributed among students.

The introduction envisages choosing problems for discussion and distributing information to be used by students. E.g., in marine engineering the problem to be discussed might be given as "Repairing a given device of a power plant". The information received by students in a foreign language is "The mechanism of the power plant", "Engine room systems functioning".

The stage of teaching consists in solving the problem in English. The lecturer may be a passive observer, a coordinator of work or a team member. The results of the discussion are to be presented in front of the whole group at the concluding stage.

2. Moderation in connection with foreign language teaching is very much like the previous technology. The difference is that the problem is not given to students, but it is distinguished by them in teams. E.g., the topic is "Operation of devices and machines in the engine room". Students write problems in connection with the topic which might be of interest to them. E.g., "Operation of generator". The technology also aims at group discussions and problem solving. The work passes through five stages: learning the aim, stating the problem, discussing in teams, generalizing the results, drawing conclusions.

At the first stage participants relate their expectations. These expectations are written on sheets of paper to be presented on the board. E.g., "Repair of generator". At the second stage the lecturer assists students in distinguishing the topic for discussion, teams of students choose problems in connection with the topic.

At the third stage discussions are held in teams. Results are written on sheets of paper. The results may include: tasks and steps to be taken for problem solving; further problems arising in connection with the topic.

The concluding stage includes students' impressions on the productivity of cooperation. At this stage students share their points of view on the obtained results and compare them to the expectations written at the first stage. The technology helps to facilitate speech habits, to cooperate in groups, it also gives students skills of using vocabulary and habits of a discussion.

3. The next technology to be viewed is "Brainstorming". In foreign language classes it may take from several minutes to an hour to implement the technology. It is realized in three stages.

The first one is called "organizational" and envisages formulating the problem, dividing the group into subgroups to effectively brainstorm. The second stage is "warm-up conversation" to introduce the rules of the technology and to train reactions. The example of reaction training is the game "quick question – quick answer". Questions may be connected with the profession or be of a general character. The third stage is brainstorming itself. Students in subgroups generate ideas to solve a given problem. Each student is allowed to speak no longer than a minute or two.

E.g., the problem to be solved is "The main types of energy in technical devices". Students enumerate the types in subgroups. The results of discussion in different subgroups are compared. Alongside with speech habits in a foreign language the technology teaches students to state points of view clearly and briefly.

4. Case study is the following type of interactive technology to be viewed. Its role in teaching foreign languages for special communication is especially important as the technology envisages describing and solving situational problems from real professional activities. The technology is realized in four stages, the first one being "preparation", the second – "acquaintance", the third – "analytical stage", the last one – "concluding stage". At the stage of "preparation" the lecturer introduces the aim of the class and the scenario of the class to students. At the second stage the situation is explained to students. It may be introduced orally or the lecturer may show a video with a given professional problem, a newspaper article, professional documentation with the description of the situation.

At the "analytical stage" the situation is solved in groups. The students make up a list of activities to be carried out in connection with the situation. The classical set of steps to be taken by each group of students in connection with the situation is as follows.

- Singling out the features of the problem.
- Formulating the problem.
- Determining the criteria of solving the problem.
- Suggesting the solutions.
- Finding positive and negative trends and consequences of each solution.
- Making up the program of actions to be taken.

The concluding stage is presenting results of the discussion by each group. Students learn different variants of solving the problem. The examples of the problem are: "Evaluation of the vessel exergy balance in polar and tropical waters", "Operating the vessel in polar and tropical waters".

5. Role play is still another type of interaction technologies. It allows to act out professional situations at foreign language classes. The stages of the technology are as follows. The first – "preparation stage" – includes clarifying the scenario of the role play to students, distributing roles. The lecturer briefly characterizes each role. The students' group is divided into two parts where the first subgroup includes actors, the second one is the audience.

At the second stage the situation is acted out by students. The lecturer is among the audience. The aim of the actors is to solve the problem in the professional situation.

The third stage is the "analysis of the situation". First, each actor shares his/her impressions of the acted situation. Then the whole group analyzes the role play, each actor gives a self-analysis of the acted part, the audience and the other participants comment on the part. This is the way all the acted parts are discussed. In the end the lecturer may share with the group the real version of the situation.

The example of role play is the listening comprehension: "The officer on the bridge receives the data to determine the vessel's sailing course. Act out his actions after the data have been received".

5. Problem-solving in teaching speech

As seen from the above mentioned technologies, teaching speech habits using professional tasks is rather popular. Problem solving is one more sphere which gives impetus to special oral communication. Problem solving embraces a number of methods and technologies. Here we dwell upon problem tasks[11].

Teaching foreign language speech via problem solving one should bear in mind the following sequence of actions. According to I. Zimnyaya the students perform the following steps.

- The student distinguishes the problem (or the task) himself/herself.
- The student seeks means to solve the problem without assistance.
- The student actually solves the problem.
- The student controls the correctness of the solution [3].

According to I. Zimnyaya [3] as cited by O.Vinogradova [11] problem solving is performed on different levels. Hence, teaching problem solving to students the lecturer should take the steps mentioned below.

- It is important that the first problems be distinguished on the familiar language topics with the help of familiar linguistic means. The means of communicating the thought remain new for the student and, consequently, present difficulties.
- On the second level students communicate the thought using familiar means, the linguistic material (grammar and vocabulary) remains familiar. The new aspect of communication is the topic for discussion yet unknown to the students. The level also envisages more complicated means of conveying the thought.
- On the third level the student tends to solve professional problems which are important to him/her in future professional activity.

It should be borne in mind that problem solving requires doing several tasks on one level. One problem solving situation on teach level is not sufficient. Also it is to be remembered that the situation of problem solving presents difficulties itself. Consequently, according to the methodical "Law of one linguistic difficulty" the student should not be overloaded by all sorts of difficulties. Hence, the only difficulty on the first level is the means of communication, the difficulty on the second level is the topic, on the third level the problem discussed is new and presents difficulty.

To sum up the description of these levels of problem solving the following chart can be made (Table 2).

Table 2. Levels of problem solving in teaching foreign languages for special communication

Level	The topic for discussion	Grammar, vocabulary	Means of communicating the thought	Character of problems
1.	familiar	Familiar	New	given by the lecturer
2.	new	Familiar	familiar/more complicated	given by the lecturer
3.	new/familiar	Familiar	Familiar	chosen by the student, important to him

Source: Independent research.

6. Conclusion

In the article only the major groups of technologies mostly implemented in Russian higher schools have been described. The list of observed technologies is by no means complete. The author realizes that:

1) the list of technologies might vary in different countries;
2) different educational systems might favor not technologies, but separate methods and techniques;
3) teaching speech requires time, and in teaching a foreign language for special communication the lecturer always lacks it in class, due to a limited schedule.

Nevertheless, it might be recommended to implement the technologies in language courses and other forms of extracurricular work.

7. References

[1] Borisova G.V. (Ed.), *Sovremennye tekhnologii obuchenia*, Poligraf-C, StPetersburg, 2002: s. 3–70 (in Russian).
[2] Denisova L.G., *Intensivnaya metodika na vneklassnykh zaniatiakh v shkole*, [w:] *Inostrannye yazyki w shkole*, 1989, № 3: s. 59–63 (in Russian).
[3] Zimnyaya I.A., *Problemnost v obuchenii nerodnomu yazyku* [w:] *Problemnost v obuchenii inostrannym yazykam v vuzye*, Izdatelstvo Permskogo GTU, Perm 1994: s. 10–17 (in Russian).
[4] Kitaigorodskaya G.A., Intensivnoye obuchenie inostrannym yazykam. Teoria i praktyka, Vysshaya shkola, NOTS „Shkola Kitaigorodskoi", Moskva 2009: s. 3–10 (in Russian).
[5] Likhachev B.T., Pedagogika: kurs lektsyi, Yurat, Moskva 1999: s. 150 (In Russian).
[6] Passov E.I., *Kommunikatyvny metod obuchenia inoyazychnomu govoreniu*, Prosveshenie, Moskva 1991: s. 163–169 (in Russian).
[7] Polat E.S., *Novye pedagogicheskie I informatsyonnye tekhnologii v sisteme obrazovania*, Akademia, Moskva 2005: c. 24–64.
[8] Prisyazhnaya A.F., *Sbornik program povyshenia kvalifikacji uchitelej I prepodavatelej inostrannogo yazyka,* Obrazowanie, Chelyabinsk 2009, s. 7–18.
[9] http://www.cilt.org.uk/further_and_adult_education/teaching_and_learning/resources/adult_elp
[10] http://www.cilt.org.uk/home/standards_and_qualifications/european_language_portfolio.aspx
[11] http://distant.ioso.ru/library/publication/vinogradova1.htm

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WSPÓŁCZESNE TECHNOLOGIE NAUCZANIA KOMUNIKOWANIA SIĘ W JĘZYKACH OBCYCH W INŻYNIERII MORSKIEJ

Streszczenie

W pracy opisano nauczanie „mówienia w językach obcych dla studentów nauk technicznych, a szczególnie studentów inżynierii morskiej. Scharakteryzowano technologie komunikacyjne, technologie „student-centered", technologie nauczania problemowego i interakcyjnego. Technologie komunikacyjne przedstawiono na podstawie tabel E. Passova i w oparciu o metodę komunikacyjnych zadań w ramach intensywnej technologii G. Kitaigorodskej, a technologie „student-centered" na podstawie technologii nauczania kooperatywnego, portfolio i pracy projektowej. Opisując technologie nauczania kooperatywnego szczególną uwagę zwrócono na "Student Team Learning", "Jigsaw" i "Jigsaw-2", "Wspólne uczenie się". Technologie interakcyjne przedstawiono prezentując "Pracę w grupach", "Moderację", "Burzę mózgów", "Metodę przypadków", "Odgrywanie roli". Rozwiązywanie problemów w nauczaniu języków obcych zaprezentowano w pracy przy pomocy zadań problemowych. Aby scharakteryzować każdą technologię, opisano kolejność działań, które gwarantują osiągnięcie planowanych efektów kształcenia. Technologie przedstawiono wraz z przykładami zadań w nauczaniu języka angielskiego w inżynierii morskiej.

Słowa kluczowe: technologie komunikacyjne, technologie „student-centered", technologie nauczania problemowego, technologie interakcyjne

Alla Matuszak
Zakład Studiów Edukacyjnych
Wydział Nauk Społecznych
Wyższa Szkoła Humanistyczna TWP w Szczecinie
ul. Monte Cassino 15, 70-466 Szczecin
Wydział Języków Obcych
Katedra Teorii i Metodyki Nauczania Języków Obcych
Czelabiński Państwowy Uniwersytet Pedagogiczny
Pr. Lenina, 69, 454080 Czelabińsk, Rosja
e-mail: allalilac@o2.pl
lilac0@andex.ru