Innovative Technologies in Teaching a Foreign Language at a Technical University

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***Abstract* — This electronic document deals with the use of innovative technologies at teaching a foreign language. The examples of such technologies are given. They are cooperative learning, a project method, distance learning. The work experience of Foreign Languages Chair of Ryazan State Radio Engineering University named after V.F. Utkin is given.**

Keywords — information-communicative technologies, cooperative learning, a project method, distance learning, teaching a foreign language

I. INTRODUCTION

Of the many problems of higher education in modern conditions, a set of issues is especially highlighted related to the introduction of a new paradigm of education, upbringing and development based on a personal-oriented approach, one of the main ideas of which is teachers and students' cooperation of educators and learners. That is why we consider the problem of cooperation as urgent, requiring comprehensive analysis and providing the necessary set of pedagogical conditions that contribute to the effective use of teachers and students' interaction in practical classes in a foreign language at a technical university, which is necessary for intensive and effective language learning.

According to the humanistic approach, which, in contrast to the traditional approach (in which everyone learns for himself) is based on the subject-subject relationships (a teacher and a student are subjects), and not on object-object relations (a teacher is a subject, a student is an object), the impact made on independent work of students in small groups, where low-performing students can ask the guys who know more if something is not clear. In such groups they study together, help each other [1], [2].

Teaching a foreign language at a technical university is an important stage in the educational process. The formation of a future specialist's personality occurs in the process of studying various humanitarian disciplines, which takes place little time at a technical university. So, a foreign language for some specialties takes 2 hours a week, in some – 3, in some – 4. The number also varies depending on the course. No doubt, even 4 hours a week is not much, therefore, in order to make classes varied, productive and interesting, our university (Ryazan State Radio Engineering University named after V.F. Utkin (RSREU)) has been using a variety of innovative technologies in teaching foreign languages for about 10 year. Let's consider these technologies on the example of the English language.

II. THE MAIN PART

One of these technologies is training in cooperation (cooperative learning), or training in small groups, which began to be used in pedagogics for a long time. Small group training was used in West Germany, the Netherlands, the UK, Australia, Israel, and Japan. But the main theory of cooperative learning was developed by three groups of American educators: from Johns Hopkins University (R. Slavin), the University of Minnesota (Roger Johnson and David Johnson), and a group of J. Aronson, California. Since then, the ideas of cooperative learning have been developed by the efforts of many teachers, psychologists in many countries of the world. In our country, the ideas of cooperation and interaction were reflected in the humanistic pedagogical direction - the pedagogics of cooperation.

The basic principles of the cooperation technologies according to G.K. Selevko are:

- groups of students are formed by a teacher before a class activity, taking into account psychological compatibility. Moreover, in each group there should be a high achieving student, a pedestrian student and a low-performing student (if the group consists of three students), girls and boys;
- the group is given one task, but its implementation provides for the roles' distribution between group members (roles are usually allocated by the students themselves, in some cases, the teacher can give recommendations);
- the work of not one student, but of the whole group is evaluated (that is, one mark is given to the whole group); it is important that not only knowledge is evaluated but the students' efforts;
- the teacher himself chooses the student of the group, who must report on the task. In some cases, it is a weak student. If a weak student is able to thoroughly speak about the group's joint work results, answer the questions of other groups, then the goal is achieved and the group copes with the task, because the goal of any task is not its formal fulfillment (right / wrong decision), but mastery of the material by each student group [3].

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In teaching English, student groups are divided into subgroups to complete a specific mini-task. Usually these are tasks for developing speech skills and enrich vocabulary. Each student tries to contribute to the overall solution to the problem, which, most often, is debatable.

E.S. Polat highlighted various training options in cooperation. One of them is a method of training in a team (Student Team Learning), which pays special attention to "group goals" (team goals) and the success of the whole group (team success), which can be achieved only as a result of each group (team) member's independent work) in constant interaction with other members of the same group when working on a topic / problem / question to be studied. Thus, the task of each student is not only to do something together, but to learn something together, so that each member of the team possesses the necessary knowledge, forms the necessary skills, and at the same time, so that the whole team knows what everyone has achieved. The whole group is interested in the mastering of educational information by each of its members, since the success of the team depends on the contribution of each in a joint solution to the problem. Student Team Learning comes down to three main principles:

- "rewards" (team rewards) - teams (groups) receive one reward at all in the form of a mark, a certificate, a badge, praise and other types of assessments of their joint activities. To do this, they need to complete one task proposed for the entire group. Groups do not compete with each other, since all teams have a different "level" and time to achieve it;

- "individual" (personal) responsibility of each student means that the success or failure of the whole group depends on the successes or failures of each member. This encourages all team members to monitor each other's successes and the whole team to come to the aid of their comrade in mastering, understanding the material so that everyone feels like an expert on this issue;

- equal opportunities for success means that each student brings points to his group, which he gets by improving his own previous results. The comparison is carried out not with the results of other students of this or other groups, but with their own, previously achieved results. This gives high achieving, pedestrian and low-performing students equal opportunities in getting points for their team, because trying their best to improve the results of the previous survey, test, exam (and improving them), both pedestrian and low-performing students bring their team an equal number of points, which allows them to feel like full members of the team and stimulates the desire to raise their personal "level" above [4].

The variants of this approach to organize cooperative learning can be considered individual group work (Student-Teams - Achievement Divisions - STAD) and team-game (Teams-Games-Tournament - TGT).

The options for this approach to organizing training in cooperation can be considered individual group work (Student-Teams - Achievement Divisions - STAD) and team-game (Teams-Games-Tournament - TGT). In the first case, students are divided into groups of four (necessarily different in level of education, different gender). A teacher explains the new material, and then offers the students in groups to consolidate it, try to figure it out, understand all the details. That is the work on forming an orienting basis of an action (but for each student) is organized. The groups are given a specific task, the necessary information. The task is performed either in parts (each student performs his part) or in the "turntable" (each subsequent task is performed by the next student, either a high achieving student or a low-performing student can start). Moreover, the implementation of each task is explained by each student and controlled by the whole group. After completing the tasks by all groups, the teacher gives a test to check the understanding of the new material. The students complete the test tasks individually. At the same time, the teacher, of course, differentiates the complexity of the tasks for high achieving and low-performing students. The marks for performing individual tasks (tests) are summarized per group and the overall mark is announced to the whole group. Thus, high achieving students don't compete with low-performing students, but everyone tries to fulfill their tasks, as if he competes with himself, i.e. with his previously achieved result. Both a high achieving student and a low-performing student can give the group the same marks or scores. Such work can be used on many subjects, from mathematics to language subjects. This is an extremely effective job for each student to learn new material.

A variation of individual-group work can be, for example, individual teamwork (Team Assisted Individualization - TAI). Students receive an individual task based on the results of previous testing and then study at their own pace. In principle, different teams can work on different tasks. Team members help each other in carrying out their individual tasks, register the successes and advancement of each team member in the special journal. Final tests are also carried out individually, outside the group and are evaluated by the students themselves (by evaluators, specially identified in the group). Each week, the teacher notes the number of topics, tasks for the program and lesson plans completed by each team, the success of their implementation in the classroom and at home (homework), highlighting the most outstanding successes of the groups. Since students independently monitor the success of the new material success by each student in the group, the teacher has time for individual work with individual groups or students who need his help.

Another technology used in the practice of teaching foreign languages is the project method. For the first time, John Dewey (1859-1952), an American psychologist and teacher, a supporter of the pragmatic direction in the education development, announced project activities [5]. The project method was developed by American educators W. Kilpatrick and E. Collings. In Russia these ideas were realized by S.T. Shatsky.

"The project method is the way to organize students' independent activities to achieve a certain result. The project method is focused on interest, creative self-realization of the student's developing personality, development of his intellectual and physical abilities, strong-willed qualities and

creative abilities in activities to solve any problem interesting to him" [3]. "An educational creative project is an independently developed and made product (material or intellectual) from an idea to its realization, possessing subjective or objective novelty, executed under the supervision and with the advice of a teacher" [3]. It should be noted that the project method plays a support role in education and should organically fit into an integrated education system.

We consider the project as a collective creative deal, in which several stages can be distinguished: 1. The preparatory stage. 2. The stage of exploratory and research work. 3. The stage of processing and giving the study results. 4. The analysis and evaluation of project results. 5. The defence of the project. 6. The stage of analyzing and summarizing the results.

The main idea of project education is the following. A student in the process of working on a training project learns real processes, objects, etc. It involves students living in specific situations of overcoming difficulties; their involvement to penetration into the depths of phenomena, processes, the creation of new objects, processes. Research and project activities help both the student and the teacher to master the most advanced modern technologies, new information and communication tools, and gain a personal socially meaningful meaning in their educational and professional activities. Project technologies allow to cover a large number of students, to avoid their overload; consider students and teachers as equal partners and creators of the lesson; to establish relations of interaction between the subjects of the pedagogical process; develop students' cognitive abilities, critical and creative thinking; train them to construct their knowledge independently, navigate in the information space; to form skills to see a problem, to formulate it and to identify the ways of solutions.

And finally, another way of transmitting information is distance learning. According to E.S. Polat, distance learning is a new form of training, somewhat different from the usual forms of full-time or extra-mural learning [6]. It assumes other means, methods, organizational forms of training, a different form of interaction between the teacher and students, students among themselves. At the same time, like any form or system of instruction, it has the same component structure: goals due to a social order for all forms of education; content, also largely determined by current programs for a particular type of educational institution, methods, organizational forms, teaching aids.

Thus, on the one hand, distance learning should be considered in the general education system, and certainly in the continuous education system, thus providing with the continuity of its individual links. On the other hand, it is necessary to distinguish distance learning as a system and as a process. That is as in other forms of education, it is necessary to provide and theoretically comprehend the pedagogical design stage of this activity, its thoughtful and pedagogical (in terms of pedagogical technologies, methods, forms of education) components.

In addition, a number of characteristics are highlighted that should be inherent in any type of distance learning so that it can be considered effective: distance learning involves more thorough and detailed planning of the student's activities, its organization; a clear education goals and objectives' setting; delivery of necessary training materials; the key concept of distance education programs is interactivity. Distance learning courses should provide the greatest possible interactivity between a student and a teacher, the feedback between a student and the teaching material, and also give the opportunity for group education. It is very important to provide highly effective feedback so that trainees can be confident in the correctness of their actions. Feedback should be operational and delayed in the form of an external assessment. The most important element of any course is motivation, for which you need to use a variety of tools and techniques. The structure of a distance learning course should be modular so that a student has the opportunity to be aware of his progress from a module to a module, could choose any module at his discretion or at the discretion of the leading teacher, depending on the level of training. It should be noted that large-volume modules reduce learning motivation significantly. When learning a foreign language the particular importance is sound accompaniment, which can be implemented either using network technologies or using a CD-ROM. Currently, modern information technologies provide unlimited possibilities for solving the problem of distance learning, as it is possible to store, process and deliver information to any distance, of any volume and content.

III. Experience

Let's consider the use of various teaching methods in cooperation with respect to higher education as an example of practical classes in a foreign (English) language at a university [7].

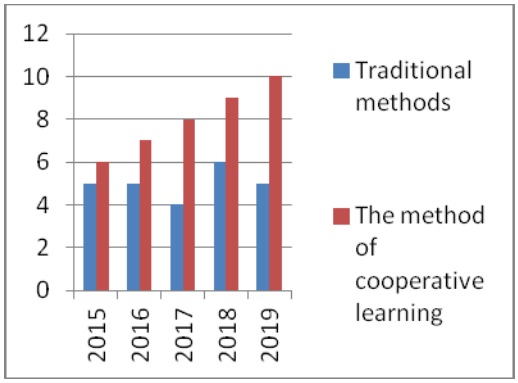
The general goal of mastering the disciplines "Foreign Language" and "Foreign language in the professional sphere" is complex and provides with the development of communicative students' competence, which allows the use of a foreign language in professional activities; increasing their professional competence, broadening their general horizons, self-education ability, raising the level of general culture, culture of thinking, communication and speech; education of tolerance and respect for the spiritual values of different countries and peoples, formation of readiness to promote the establishment of intercultural and scientific relations, represent their country at international conferences and symposiums, get acquainted with scientific and reference foreign professionally oriented literature.

The courses of educational disciplines "Foreign language" and "Foreign language in the professional sphere" are professionally oriented and are created taking into account interdisciplinary connections, primarily knowledge, skills acquired by students in the process of studying social disciplines and disciplines of the professional cycle. The course content assumes that students use background professionally-oriented and socio-cultural knowledge in

mastering a foreign language, and language and communication skills that are formed in the process of studying it, expand the students' opportunities to participate in educational and research activities and create the prerequisites for further self-education in the professional field.

Almost formed personalities come to the university. However, students with different language skills can fall into the newly formed group of English, therefore, it is necessary to use one of the principles of humanistic pedagogics, which states that it is important for each student to apply a personal approach when working on studying program material.

TABLE I. THE COMPARISON ANALYSIS OF THE TWO STUDENTS' GROUPS



Currently, when teaching a foreign language at a university, the method of cooperative learning and its various options can be actively used. A teacher can change this method depending on the objectives of the lesson. Here is an example of an English class at the Faculty of Computer Science of RSREU. The topic was devoted to the design of a computer and was called "Computers". Students were divided into microgroups, and each microgroup received a hometask – to prepare reports on the proposed topic, for example, about the first person who invented the computer, about the evolution of computers, about accessories and additional devices, about the types of computers, etc. Also, the groups received the task to prepare presentations on a proposed topic in Microsoft Office Power Point or create a video and make the sound track for it in English. Students independently prepared their reports and presentations, brought images of different types of computers. At the lesson, they presented their reports, presentations, video materials. Then the students received a text for reading and translation on the history of computers "History of computers". Then it was given to answer questions, to find out the correctness or falseness of the proposed answer options ("True or False sentences"), to find the English equivalents of the Russian expressions ("Find the English equivalents"). During the lesson, students learned a lot from the reports of their colleagues from other groups, actively asked questions and, accordingly, received more information at the end of the lesson. It is unlike traditional methods where all students do the same work at the lesson and get less new information as they could do. Table 1 shows the students' results of two groups during the 5 years (from 2015 till 2019). The teachers of the first group of 10 students used traditional methods and the learners' progress was approximately the same. The teachers of the other group of 10 students used innovative methods, for example the method of cooperative learning. The results of the learners have grown greatly.

IV. Conclusion

In conclusion, it should be noted that the use of various innovative technologies in teaching a foreign language in collaboration with traditional ones will bring positive results in the preparation of a high-quality specialist in a university. All students learn new information independently, and then they change it and accordingly learn more. In our opinion, the use of innovative technologies in constant interaction with a teacher and teamwork with colleagues in learning a foreign language, which mainly occurs in small groups, brings positive results in students' acquiring new knowledge, allows them to express their opinion, develops oral communication skills in the language being studied, increases student activity. Hence, the main idea of cooperative learning is to study together, and to do something together. This idea is relevant in modern conditions when teaching a foreign language.

References

[1] Slastenin, Moscow: Publishing House Master-Press, 2000.

[2] V.A. Slastenin, I.F. Isaev, E.N. Shiyanov Pedagogics, Moscow: Academia, 2002.

[3] G.K. Selevko, Encyclopedia of Educational Technologies, vol. 1-2, Moscow: SSI of School Technologies, 2006.

[4] E.S. Polat, New Pedagogical Technologies: The Course of Distance Learning for Teachers. Cooperative Learning. A Project Method, Moscow: Academia, 1999.

[5] W. F. Warde (George Novack), "John Dewey's Theories of Education", International Socialist Review, vol. 21, No. 1, Winter 1960.

[6] E.S. Polat, Distance Learning. Available online at: http://scholar.urc.ac.ru/ped_journal/numero4/pedag/polat.html

[7] N.A. Kopylova, "Technical University Students' Individual Work in the Process of Learning a Foreign Language", The Fourth International Scientific Practical Conference "Questions of Modern Philology and Problems of Language Teaching Methodic, Bryansk: Bryansk State University of Engineering and Technology, pp. 229-233, November, 24-26, 2016.