Problem Analysis of Using Information Technologies for Effective Foreign Language Teaching at a Technical University

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Abstract—The article describes the problem of using information technology by teachers to train students a foreign language at a technical university and argues that information technology is promising and modern, so it can be an active means of motivation and involve in learning. The article concludes that the introduction of information technologies in the educational process does not exclude traditional methods of teaching and they are well combined at all stages of training. The use of information technology cannot only significantly improve the efficiency of teaching, but also is able to encourage students to further independent study of foreign languages.

Keywords—language environment, information technology, means of motivation, methodological script, computer didactic materials, interactive educational programs, stating experiment, method of competent group expert evaluations

I. INTRODUCTION

The use of various means of motivation for a positive impact on the training of students in foreign languages at a technical university is quite an important problem of teaching methods. Unfortunately, today the teaching of foreign languages is mainly of an artificial educational nature, as most of the students do not have a "natural need" to communicate in a foreign language [1].

Today, there is no consensus on what is motivation in general and means of motivation of educational activity in particular [2].

Based on the works of I. Zinnyaya, E. Ilyin and A. Leontiev, we understand the means of motivation as a system of techniques and methods that guide educational activities to a deeper study of a foreign language and its improvement. In this case, a large role is given to a positive and competent psychological setting of the teacher.

B. Gershunsky, A. Zhzhikov, E. Maron, E. Polat and I. Robert devoted their works to the introduction of information technologies in the learning process. P. Galperin, E. Mashbits, E. Nelunova and other scientists devoted their study to the didactic and pedagogical problems of the use of computer technology in the learning process.

Observations show that during one year of foreign language teaching the attitude of students to different types of educational activity changes in a negative or positive way. It directly depends on the style of the teacher’s work. The constant use of repetitive types of exercises and only one textbook weakens the positive emotions, and the students lose interest in learning.

Modern methodologists consider the learning process simplified as a controlled transition of students from one state to another, while the management of educational activities becomes a common technological method.

Today, many teachers use information technology to teach foreign languages, however, many researchers note that their use does not lead to an increase in the efficiency of the university system of teaching foreign languages. This is due to various reasons: sometimes just the lack of informational training programs and sometimes teachers are not advanced computer users. Besides, there is no specially developed learning technology with careful study of all components of the pedagogical process [3].

II. PROBLEM OF USING INFORMATION TECHNOLOGY FOR TEACHING FOREIGN LANGUAGES

However, in the author’s opinion, the main problem is that teaching foreign languages with the use of information technologies is not yet used by all teachers and not in full, although there are all conditions for this. According to the research and analysis of the survey results, which the author conducted in Novosibirsk State Technical University in 2018, it became clear that only 40% of teachers actively use information technologies for teaching foreign languages (advanced users), 50% of teachers rarely use them (active users), and 10% of teachers do not use information technologies for teaching (passive users). The number of teachers and students interviewed was 120 people. The number of teachers taken as 100% in the pie chart is 90 people. Fig.1 shows these data, obtained by the percentage formula (1):

$$\text{whole} / \text{part} = \frac{100}{x}$$    \hspace{1cm} (1)

where x – the number of advanced, active and passive users respectively.
While assessing the results of the research and survey, it was found that 40% of teachers who actively use information technology to teach foreign languages at technical universities are mostly young teachers who have recently graduated from pedagogical universities. The whole system of their education, since school days, was based on the use of information technology. Creating presentations in Power Point and using Internet resources to find informative materials, as well as finding and using suitable video and audio materials are familiar technological methods used by young teachers. Young teachers are of the same information generation with their students, and this explains their desire and ability to widely use all modern information technology.

When we talk about 50% of teachers who rarely use information technology, we mean older teachers. It is clear that many of these teachers have their own established style of teaching, which they consider quite effective. There are, however, other teachers in this group who experience some difficulties in the application of information technologies and therefore rarely use them. Nevertheless, foreign language classes of such teachers could be more interesting, more dynamic and effective.

As for 10% of teachers who do not use modern information technologies for teaching foreign languages, they are quite respected and knowledgeable elderly people. They are quite conservative and afraid to change anything in the educational process, and just, unfortunately, do not know the information training technologies and they are not users of information resources.

In Novosibirsk State Technical University, as well as in many other Russian Universities, the problems of technical support have been solved. Modern terminal classes and interactive training programs have been created, didactic possibilities and specifics of computer application in the educational process have been comprehended, own information support has been developed, appropriate means of motivating teachers and students are being formed [4].

It is also important to note that a lot of time and effort in teaching foreign languages falls on such types of work as repetitive training and control, which are most easily automated, and many organizational problems disappear due to the sufficient software and the availability of modern terminal classes.

The real model of integration of information technologies and methods of teaching a foreign language should be based, in my opinion, on the following conditions:

- educational information technologies are an effective means of motivating students to learn a foreign language, and not just one of the technical means of teaching;
- teachers should use educational information technology as much as possible in the classroom of a foreign language. They can use a variety of original materials in a foreign language, which are widely presented in YouTube, online lessons, video conferences, multimedia, forums, chat and interactive training programs;
- independent work of students with interactive computer programs can be carried out outside the classroom, as this has a positive effect on the motivation of students to learn a foreign language.

In implementing such a model, there is obviously a need for administrative methods. For example, the passivity of teachers, caused by the reluctance to change the traditional principles and methods of organization and conduct of classes, can be overcome by the creation of more comfortable conditions for the use of information technology in training, and the requirement of obligatory inclusion in their work plans a certain number of lessons in the terminal classes.

From the educational practice of the University it is clear that information technology is very well implemented in the structure of the educational process, the most fully meet the didactic requirements and attract as close as possible the process of learning a foreign language to the real conditions of life [5].

The Internet gives teachers the opportunity to learn the necessary information about modern technologies of teaching foreign languages, to find the latest interactive training programs and to solve the problems of teaching together with students.

Information technologies significantly expand the ability of teachers to individualize learning and enhance cognitive activity of students in learning English, allow adapting the learning process to the individual characteristics of students. Working with a computer and practicing, for example, grammatical material, each student has the opportunity to work in their own mode, i.e. choose for themselves the optimal volume and speed of studying the material [6].

The use of information technology in English lessons significantly increases the intensity of the educational process. When using them, a much larger amount of material is absorbed than it is done at the same time in the conditions of traditional training. In addition, the material when using information technology is assimilated stronger, as authentic video and audio stories are very informative and interesting and meet the way of thinking and the needs of the younger generation, accustomed to receive information not only and not so much from books, but from electronic information and communication: the Internet and computer.
Information technologies are modern and promising, so they can be an active means of motivation, and can attract to training. The role of the teacher does not become less important. On the contrary, its possibilities in application of the most different forms and ways of representation of educational material and mechanisms of influence on students increase. However, this happens only if the teacher himself is a qualified computer user and the author of didactic materials.

Teachers now use modern multimedia and the Internet. Electronic encyclopedias and dictionaries, multimedia courses, including audio and video materials, electronic editions of books, newspapers and magazines in the original language, educational sites, forums, chat, interactive training programs, online lessons, video conferences – all this makes it possible to widely see the socio-cultural features of the subject and get detailed information on various issues [7].

It is worth mentioning the interactive whiteboard, which is one of the ways of presentation of educational material at the lessons of a foreign language. Interactive whiteboard – a multimedia learning tool from the category of information technology used for training foreign language. Working with an interactive whiteboard (Smart-board) involves not only a well-structured and well-thought-out introduction of new educational material, but also the ability of the teacher to use new technical means of teaching, which includes an interactive whiteboard [8].

The use of interactive training programs does not exclude traditional methods of training, and goes well with them at all stages of teaching: acquaintance, training, application and control. However, the use of information technology, as one of the most effective means of motivation, can not only significantly improve the efficiency of training, but also is able to encourage students to further independent study of a foreign language.

Now no one doubts that information technologies provide wide training opportunities for the realization of the goals of education. For foreign language learners, it becomes possible to create a language communication environment through the use of original foreign textbooks, through authentic fable texts, as well as through communication with native speakers in the Skype program and much more.

Internet is necessary for teachers and students to create the need for communication in a foreign language – written or oral. It should be noted how important real communication is for the formation of communicative competence and intercultural interaction. The possibilities of the Internet allow both. The most effective use of the network is for the organization of joint information projects with native speakers [9].

International projects that are organized in the Internet on the basis of a common problem, the study of which, and its solution are equally interesting and important for partners from different countries, create a genuine language environment.

Participants of the project are concerned with reflections, research, respectively, search and collection of the necessary information, its discussion among themselves and with partners. Foreign language acts here in its direct function – a means of communication, a means of formation and formulation of thoughts. This is a true learning environment, a real immersion not only in the problem under study, but also in the foreign language activity itself, in another culture.

The problem under study together can be of any kind – environmental, political, creative, historical, cultural, linguistic, etc. The main thing is that it is studied, discussed by the project participants and solved in a foreign language adopted for communication in this community of participants. When working on the project they use almost a variety of opportunities and resources of the Internet. The search for the necessary information leads the project participants to virtual libraries, databases, virtual cafes and museums, to various information and educational sites. The need for live communication with real partners draws its participants to the possibilities of e-mail, video conferencing and chat technologies [10].

Participation of students in video conferences, including online, chat rooms, which are attended by students and teachers from around the world (usually such conversations are conducted in a foreign language) – an additional very interesting and useful opportunity for new contacts and real speech practice. In the course of such discussions and conversations, there is not only an exchange of information on a particular problem, but also an acquaintance with some elements of another culture.

Currently, the Internet offers a lot of different online material. Here it is appropriate to mention interactive training programs in English such as Reward, Focus on Grammar, various test tasks and much more. They help students to review and learn the grammatical material on their own and with the help of the teacher.

The introduction of information technologies in teaching a foreign language gives: first, a set of skills and abilities to work with sources of information. Second, it provides the authentic nature of training, changes in the system of teaching a foreign language. Finally, the style of thinking necessary for modern information society and the organization of new forms of influence in the learning process [11].

It is possible to achieve new results in training only on the basis of new information technologies with a well-developed methodology. This problem can be solved by multimedia technology based on the correct methodological script.

Working with information technology requires a lot of knowledge and training from teachers of foreign languages. The center of linguistic and methodological resources of the Institute of Distance Education, headed by the doctor of pedagogical sciences M. Bovtenko has been working in Novosibirsk State Technical University for 15 years. She has created original training programs for teachers of foreign languages. Teachers of the foreign languages Department of technical faculties in NSTU take courses in this center to improve their skills in the use of information technology [12].
III. INFORMATION TECHNOLOGY IS ONE OF THE MOST EFFECTIVE MEANS OF MOTIVATION FOR TEACHING A FOREIGN LANGUAGE AT A TECHNICAL UNIVERSITY

As part of our article, we can state that information technology is one of the effective means of motivation for teaching a foreign language at a technical university and on the scale of the efficiency of these tools occupy a leading place in the process of teaching. To study the effectiveness of individual means of motivation the scale of its efficiency was introduced and used.

As a result of the stating experiment to assess the effectiveness of various means of motivation in teaching a foreign language, information technology has received one of the highest estimates of the efficiency of means of motivation, this estimate is 78% of the possible 100%.

The data of the stating experiment made it possible to organize a comparative experiment based on the method of group competent expert assessments. This method is used when it is necessary to analyze any qualitative characteristics. The efficiency of the means of motivation is just a qualitative characteristic. The results of the study are presented on the scale in the form of numerical expressions in Fig. 2.

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<th>program teaching</th>
<th>teaching activity</th>
<th>information</th>
<th>video teaching</th>
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Fig. 2. The motivation means efficiency assessment scale.

These results were obtained through a formalized sociological survey of foreign language teachers and students of Novosibirsk State Technical University. University professors are, without a doubt, experts in their field of knowledge. Students can also be considered quite competent, as they have been in the field of education for quite a long time and have acquired serious skills and knowledge. The number of teachers and students interviewed was 150 people. The data obtained confirmed the results of the stating experiment with a slight difference and therefore our data can be considered reliable.

IV. CONCLUSION

The technology of using the means of motivation is very simple. To make university classes in a foreign language productive, interesting and successful, the teacher can use any means of motivation or a set of these tools, depending on the goals and objectives of the classes [13].

As practice shows, new information technologies attract students and these technologies are one of their main interests. Therefore, the use of information technology in the educational process, clearly, contribute to the formation of positive motivation, which has been proven through the use of tests in the current and intermediate control of the assimilation of the next covered topic.

The theoretical study of the problem of the use of informative technologies has caused the need to confirm this issue in practice in the educational process. The work was carried out with first-year students studying a foreign language for 17 academic weeks, 2 classes a week. At this stage, the author set a task – to determine the degree of students’ ability to work with information technology and to determine the conditions that enhance the motivation of learning a foreign language.

For this purpose, the opinion of foreign language teachers was studied on the basis of the proposed questions:

- what educational technologies are used in the classroom?
- do these technologies contribute to the full implementation of the objectives of the lesson?
- what is the leading motive of students attending classes?
- are you an advanced user of a computer?
- how often do you use information technology in the classroom?
- what means should be used to strengthen the motivation of learning a foreign language?

Analysis of the answers suggests that traditional educational technologies prevail in the educational process, and only in a few cases, teachers use widely the means of information technology.

Answering the question about the motives of students attending classes, almost all teachers noted the desire of students to get a positive assessment, and to a lesser extent the need to obtain knowledge of a foreign language for their future professional activities. When answering the last question, most of the teachers expressed confidence that in order to strengthen the motivation of learning a foreign language, a gradual transition to the use of new information technologies in the educational process is necessary [14].

The need to use a computer as a means of motivation to improve and strengthen the motivation of learning a foreign language, led to tests after each topic studied by students [15].

Analysis of the test results on the effectiveness of the use of information technology in the educational process allows us to draw the following conclusions.

The use of information technology has increased the motivation of students to learn a foreign language compared to traditional methods, due to a number of factors, namely:

- high enough computer skills of the majority of students;
- authenticity of training materials;
- modern information technologies;
- impartiality of the computer in the evaluation of responses, etc.
In conclusion, it should be emphasized that the introduction of information technologies in the educational process does not exclude traditional methods of training, but goes well with them at all stages of teaching: acquaintance, training, application, control. However, the use of information technology can not only greatly improve the efficiency of learning, but also encourage students to further independent study of foreign languages.

**REFERENCES**


