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Application of Modern Educational Technologies at the Research University

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Abstract

Application of modern educational technologies for diagnosing set education results, student motivation increase, influencing creative thinking ability aimed at problem solving, critical understanding of information and independent educational activity skills development are discussed in the paper.

Keywords: Module education; communicative , information and communication technologies; problem oriented education; gaming technologies.

1. Introduction

One of the peculiarities of the modern world society is the increased influence of global informatization in all social life aspects. Economical state, society life quality, national security and governmental role in the world depend on levels and speed of information technologies development. That is why now in Russia both applying information technologies and foreign languages awareness have become necessary for education in different spheres.

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Application of modern educational technologies is one of the most productive ways of educational system reforming in the whole, in particular the sphere of foreign language training (Kachalov, et al., 2014). To our mind, the most efficient foreign language training techniques are module education technologies, communicative and information-communication (ICT) technologies, gaming technologies and problem oriented education. Let us consider it in more detail.

2. Content of modules

2.1. Technology of foreign language module teaching

At the end of 80s – 90s of the XX century, a new technical term emerged in the pedagogical environment - module. Module education appeared in Europe and was widely used in England and Sweden.

The theory of module education pays a lot of attention to the issues of program education and questions of differentiating and individualization in the educational process. Such issues as the functional system theory, reflex theory, synergy theory, psychological concept of personality oriented activity approach and theory of personality and motivation, are explored within the subject mentioned.

In the process of realization of module education technology, one should consider the structural specificity of its contents. The main tool of the given technology is the module educational program consisting of curriculum and modules. In order to create it, one should firstly, point out the main scientific goals of the course; secondly, organize the contents in accordance with these ideas in definite blocks (several modules), having formed in such a way a complex didactic education goal (CDG). It has two levels: learning educational contents for students and practical application of the obtained knowledge.

The next step is titling the program. Further, integrating didactic goals (IDG) are pointed out from CDG, modules are assembled (every module has one integrating didactic goal). After that, the division continues and every IDG is in turn divided into particular didactic goals, based on which, the educational elements are singled out. As a result, a wide structure consisting of three target levels, each being the base for the next one, is formed. In such a way, a module educational program is a system of logical and complete educational elements – educational modules.

2.2. Communicative, information and communication technologies of foreign languages teaching

One of the achievements of foreign languages teaching techniques is the theory of communicative teaching. Developed on its basis, the technology of communicative teaching method presents a communication-based teaching. Despite the fact, that it was developed relatively long time ago, it is still actual and demanded now (Daniel, 1996). Moreover, a communication-based teaching is the essence of all intensive foreign languages teaching methods.

One should also note that the considered technology belongs to the group of pedagogic technologies developed on the basis of activation and intensification of learner's activity together with gaming technologies and problem-oriented teaching. Therefore, one can state that the main subjects of teaching process in line with communication technology are the teacher and the student. The relations between them are based on cooperation and equal communication partnership.

Modern technology in communicative teaching of foreign languages was developed on the basis of the communicative teaching method and therefore, the equalization of conceptual provisions of the given method and technology seems reasonable.

Based on the Konysheva's research (2007), let us characterize the main principles of content development together with communicative foreign languages teaching technology:

1. Speech orientation of teaching. The given principle is a key one since it supposes teaching communication by means of communication. Communicative orientation of tasks including from three to four types of speaking activities allows realizing of this principle. Phonetics, grammar, vocabulary, spelling and even punctuation are all the necessary means of communication, i.e. processes of thoughts expression and understanding another person's speech.

In teaching process, spontaneous speech practice prevails as well as expression of one's own thoughts and information exchange in foreign language both within teaching activity and on different other topics. Due to this, the attitude towards speech mistakes is changed, since they are not also possible, but may be quite natural if they do not change the understanding, facts and events. So in the process of teaching a democratic communication style is established the same as friendly relations between the teacher and the student.

2. Functionality. This principle is mostly revealed the necessity of understanding by all students the functionality of all FL aspects. Moreover, the student should develop the understanding of language as a unified structure (vocabulary, grammar and phonetics aspects as one entity). Functionality supposes the comprehension of all three aspects in activity at once, i.e. the student performs a communicative task – proves a point, asks questions, starts a conversation, negotiates using FL vocabulary, grammar and, of course, phonetic rules.

3. Situation. In this case, one bears in mind the role organization of the teaching process. We have already mentioned the connection between the communicative and gaming technologies. In this principle, the connection is more evident. It is necessary to create "teaching situations" for communicative teaching.

By participating in this or that communicative situation, people play different social roles. In the process of FL teaching, it is vital to include such situations from the different spheres of social, professional, family and cultural life.

These situations are rather conditional of course, however, it is possible to include students into a real modelling of situation by creating the problem oriented communicative situation on the actual topic. Moreover, by playing a situation a student gains necessary communicative experience that will be useful in future.

Besides, such "artificial" communicative roles, a teacher should create the situations of natural communication, e.g. possibility of assistance to a fellow student at doing a task, evaluating the performance, group discussion on a proposed topic. In such a way, the teaching situation becomes natural, at successful completion of which a personal satisfaction over learning activity is formed, linguistic barrier disappears and the learning motivation level increases.

4. Novelty. It appears mostly via using new, actual and interesting material at reading, speaking situations, tasks, etc. The given principle supposes introduction of a novelty element into the multiple working with the same material, i.e. the number of teaching material repetitions is neutralized by means of, for example, varying the speaking tasks. It provides the refusal of learning by heart, by developing spontaneous speech skills, heuristicity and productivity of students speaking skills. Every time, the necessary teaching material is presented in a new form, it may be either in the form of discussion of the studied topic, a game or creation of the problem situation, which one cannot solve without using the required vocabulary. All this rouses students' interest to learning activity.

5. Personality oriented communication. Both the style and way of communication of every person are individual. It is also expressed in subject's experience, activity context, set of definite psychic and emotional characteristics, interests, social behavior, etc. It is necessary to create in the process of FL teaching an internal stimulus for communication, i.e. communicative motivation should not be forced but resulting from the communication process itself.

6. Modelling. As any other technology, communicative technology differs in programmed activities, stages, contents, presenting itself a teaching model. One should consider the following factors at modelling the contents of the teaching discipline:

1) The content aspect is presented by problems and not by topics;

2) All the tasks should be of communicative character.

The usage of speaking and thinking tasks is the key element of the communicative teaching. It provides the realization of all other communicative properties, such as learning motivation, activity, interaction between students and teacher, meaningfulness, problem and situation orientation, functionality, emotionality etc. (Barab, et al., 2003).

However, now a new technology has become widespread - Information communication technology in foreign languages teaching (ICT) developed on the basis of the above-mentioned technology. It was created due to the constant increase of information volumes. Traditional methods of information storage, transfer and processing become less effective. Application of ICT provides huge possibilities, both for the teacher and students. The ICT understanding is mostly connected with the development of such perspective didactic means as electronic multimedia (teaching software, electronic textbooks, interactive multimedia, etc.); electronic education resources (e-libraries, databases, virtual communication and interaction, web sites, portals etc.); educational internet resources (Rieber, 2003).

ICT is one of constituents of information and education university environment that is made from electronic products of different activities: informational, communicational, creative, program, technological, etc. (Krashen, 2003).

Now there exists and is widely used a number of foreign languages teaching software. "Euro Talk" (Elementary, Intermediate, Advanced), "Professor Higgins", "Learn to Speak English" are most popular. One of the most wide spread software recommended by the Ministry of Education and Science of the RF is "Professor Higgins", aimed at individual work of the learner in English phonetics and grammar. The software "Euro Talk" (Elementary, Intermediate, Advanced) are used for individual training in different learning material. The successful acquisition of knowledge gives points that are used as an indicator of FL skills. For work with vocabulary one uses "Learn to Speak English" software consisting of 30 lessons including a large number of dialogues, tasks, games and videos for comprehension of new vocabulary.

The mentioned software may be used both separately and in complex. The last variant being more efficient and correct since the optimal combination of self-work and group work provides high learning motivation and efficiency in foreign language material comprehension even without their use.

Therefore, it becomes evident that the modernization of communicative technology by means of new information technologies in ICT provides an increase of foreign languages learning efficiency in high school and is aimed at adaptation of modern knowledge system to the tempo and individual peculiarities of a learner from XXI century.

2.3. Gaming technologies of foreign languages teaching

A game is one of the oldest ways of human cognitive activity. The understanding of a game is changed in recent social and scientific practice and it is now considered as a social, serious category of a special didactic value (Gredler, 2003).

Gaming activity in the teaching process allows realizing the following functions:

1. Teaching function consists of the developing memory, attention, information perception and general educational skills.

2. Disciplinary function consists of forming such personal traits as attention to a game partner, mutual assistance etc.

3. Entertaining function is realized in the creation of good, interesting environment at the lesson.

4. Communicative function consists of the possibility to create emotional and communicative relations in a foreign language.

5. Psychological function consists from possibility of mental transformation for comprehension of large volumes of information.

6. Developing function of a kind unites all the above-mentioned functions and is aimed at personality development in general.

Didactic game is an integral element of active teaching, especially when one speaks about foreign languages teaching. For example, role and business games are very effective in this sphere. In the course of such games, students gradually enter the situation of natural communication in foreign language and solve a number of creative and practical problems, realize their personal potential and may demonstrate their skills.

The teaching game components include the so-called gaming approach, i.e. introduction into a teaching situation predetermined conditions changing emotional coloring of a situation to change the attitude of students towards the already accepted norms of behavior at the lesson and towards the learning information correspondingly. Such approach is introduced when it is required to reconsider the available knowledge, i.e. to take a glance on the situation from the different point of view.

2.4. Technology of the problem teaching

One of the most efficient modern technologies of foreign languages teaching is the technology of the problem teaching. It is the application of the given technology that provides the stimulation of independent search activity of students.

From the psychological point of view, the basis of the problem teaching is the contradiction appearing in the mind of a student consisting of the difference between the available knowledge and the knowledge needed to solve the problem set by the teacher or problematic task.

Main structural elements of the problem teaching are problem situation and its solution process, problem task and problem question.

In the sphere of foreign languages teaching, the problem technology was created on the basis of problem method that had become widespread in 20-30ies of the XX century. The main idea of this method is that the teaching process should be built in accordance with ontogenesis principle, i.e. artificial development of personality, at which the necessity of education occurs (VanGundy, 2005). In other words, the knowledge and experience obtained at the problem teaching are comprehended by the student and are therefore available for practical application.

At the present time, the problem teaching is understood as an organization of teaching activity when under supervision of a teacher a problem is set that is solved by students. In the result, students creatively obtain knowledge and skills and develop thinking ability.

This technology proved to be rather successful and efficient in a goal achievement because of the modern tendency of personal development in education and intensive revealing of creative skills of learners.

Didactic grounds for the problem teaching are different sources (Brauer, 2001), e.g. text, audio, video, statements, etc. The task of the teacher is the correct application of methods aimed at creation of didactic elements of problem situations in teaching.

Here one can mention the following methods:

1. The teacher leads students to a contradiction and offers them to find the solution independently.
2. The teacher counters different practical objects and causes contradiction between them.
3. The teacher expresses different points of view on one problem.
4. The teacher offers discussing different views on a problem (usually in role games).
5. The teacher encourages students to make comparisons, generalizations, evaluation or matching different facts.
6. The teacher determines theoretical and practical research tasks.
7. The teacher sets problem goals.

As a rule, problem technologies are used in FL teaching in close connection with communicative and gaming technologies, representing a unified group of technologies aimed at activation of learning and cognitive activity of students.

The advantages of this technology are:

• Ability to obtain independent knowledge in the course of learning and cognitive activity
• Increase of learning motivation
• Productive thinking development
• Premium attention to the development of communicative competency
• Solid and applicable results of learning
• Forming of ability to listen and understand the speaker, to find a compromise
• Forming the ability to briefly and argumentatively state one's opinion

So, let us summarize the problem teaching technology analysis and note that the given technology corresponds to modern education requirements and may promote student foreign language knowledge, help forming such important qualities of a modern personality as independent, creative (nontraditional) point of view on problems, culture of discussion.

2.5. The use of multimedia at practical foreign language lessons

To our mind, the above-mentioned technologies do not contain principles and components contradicting each other, but have a number of important unified characteristics that allows using such technologies in close relation to each other (Dudeney & Hockly, 2009).

The teacher should adhere to the following *principles* using educational technologies:

• Communicative orientation of the presented language material
• Encouragement of students conscientious cognitive activity
• Orientation on independent learning activity development
• Use of modern technical means of education
• Orientation on previous set teaching results
• Systematic intermediate control of student educational results, taking necessary corrective measures, evaluation of students educational achievements
• Prioritized use of productive tasks and exercises
• Rational combination of individual and group work of students

The used educational technologies condition the activity cycle of the teacher and the student, determine the structure of the lessons, ways of presenting and working with the language material, as well as the teaching forms. Considering our work technology with the university FL textbook, let us point out the following peculiarities of the teacher's actions and the structure of classroom lessons (Mayer, 2001).

Due to the teaching process organization by means of information and communication technologies, as well as gaming, problem and project technologies application, the teacher's actions should be a multicomponent interconnected activity aimed at presenting, working and using the newly learned vocabulary, grammar and phonetic material in different types of speaking activities. It means the necessity of tasks' constant variety and exercises aimed at forming speaking skills.

The lesson structure within the personality oriented approach with the university textbook may represented as a closed system of teacher actions and teaching subjects where all elements are interconnected and directed on realization of the same goals of education (Harmer, 2012).

Let us indicate the main (invariant) stages of a lesson:

1. Warming up. This stage may contain the repetition of the studied vocabulary and grammar material on the basis of productive speaking tasks. For instance, spontaneous speech on the previously formulated by the teacher topics and prepared questions. Alternatively, the use of teaching gaming tasks aimed at activation of studied vocabulary and/or grammar material on the level of sentences and text. One may also check the individual home tasks. Student work forms may vary dependent on the type of the checked exercise.

2. Presentation. On the given stage, the teacher presents the new material. Material presentation may be deductive and inductive, as well as implicit. At approbation, the teacher presented all the language materials, in most cases, inductively and it encouraged students to perform active conscientious cognitive operations promoting the development of thinking and analysis and synthesis of the obtained material. As educational aids, the teacher had used different pictures (photos), graphics (schemes, tables), video (clip, interview).

3. Practice. This stage of educational activity is aimed at practical work with the studied material. Here one should combine and vary speaking and language tasks. Besides, one may use teaching games, communicatively oriented vocabulary and grammar exercises. One should also alternate individual and group forms of work for teaching subjects by prioritizing the pair and group work.

4. Production. On "Practice" stage, it is supposed to use the new language material in oral speech, but as a rule, it is conditional and limited by the definite communicative task. The given stage is aimed at activating speaking.

5. Summing up. Summarizing the lesson results. Explanation of home task or independent work tasks. Evaluation of students' activity. On this stage, it is possible to introduce the methods of student self-evaluation aimed at independent analysis of their work on certain criteria.

Let us note that educational process requires conducting the lessons that have different purposes, e.g. practical lessons, repetitious lessons and actualization of productive and receptive skills, control lessons. In this connection, the structure of professional teaching activity of the teacher and student learning activity will change, but its organizing principles will remain the same.

3. Conclusion

Educational technologies represent constructing manageable teaching processes with set goals and checking the results. Derivatives of teaching technologies are educational technologies, teaching and training technologies. The subject of education technology is the constructing teaching process at the level of contents, interaction forms between its participants and teaching process contents and evaluation and control of the results of teaching activity.

Educational technology is a variant of describing the educational process model; the stress may be firstly made on the character of activity and interaction between the subjects of the educational process, and only than on the contents, subject or conditions.

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