

METHODOLOGY OF USING MEDIATECHNOLOGIES IN THE LESSONS

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Abstract: The emergence of the concept of competency-based approach - the "competence-based approach" in European higher education entailed a reassessment of the teaching methodology, including teaching a foreign language. The main goals and objectives of the new methodological approach in education were determined by the Commission "Pan-European Format of Foreign Language Proficiency: Training, Teaching, Level Assessment". At the pedagogical level, this approach means changing the paradigm of the teaching process, since the main emphasis is not on the transfer of knowledge by the teacher to the student, but on the activation of the role and motivation for students to search for information and teaching keys.

Key Words: pedagogical level, methodological level, Projects Method, Case Study Technology, Technology "Debate.

Introduction

Modern society, called information and characterized by the process of informatization, the development of information technology and computer technology, is associated with the results of successfully developing education: it is in this area laid social, psychological, cultural and professional prerequisites for social development. Many scientists (T.P.Voronina, E.Masuda, A.Toffler et al.) believe that in the information society, the process of computerization will give people wide access to sources of information, provide a high level of automation of its processing in the industrial and social spheres. The above leads to the conclusion about the need for the process of informatization of modern society as a whole, including education. Informatization of education is understood as the process of providing education with the methodology and practice of optimal use of it, focused on the implementation of social, psychological and pedagogical goals of training and education. Informatization of modern education is closely connected with the use of information technology in the history lessons, part of which are multimedia technologies. The term "multimedia" (persistent. multimedia) comes from lat.multum - much and media - medium - focus; that means is an electronic storage medium, including several types (text, image, animation etc)(3). The common meaning of the term "multimedia technologies" is the following: MMT is interactive technologies that provide work with still images, video, animation, text and sound. With regard to education, S.G.Grigoriev and V.V.Grinshkun give the following definition of the term "multimedia": "Multimedia is a range of information technologies that use various software and hardware in order to most effectively influence the user (who has become both a reader, a listener and a viewer)". Multimedia technologies are classified into linear and nonlinear, and there are no clear definitions of these concepts in the literature. Cinema can be an analogue of the linear way of representation. The person viewing this document cannot in any way affect its contents. Non-linear way of presenting information allows a person to participate in the output of information, interacting in any way with the means of displaying multimedia data. Human participation in this process is also called "interactivity". This way of human-computer interaction is most fully represented in the categories of computer games.

The process of emergence and spread of multimedia technologies is inextricably linked with the history of information technology, which has its roots in ancient times (as the researchers note, the development of it begins with the appearance of speech and continues to evolve with the invention of writing around 2350 BC). The stages of its development today are clearly defined. Periodization of MT in the study were not identified, therefore, highlight the stages in the development of multimedia technologies, based on the recognition of the importance of key events and achievements in the field of their formation and evolution: the first phase (1945 – early 1960s;) starts the emergence of multimedia technologies, the ideological premise which considered the concept of the organization of memory "MEMEX" proposed in 1945 by the American scientist Vannevar Bush. It provided for the search for information in accordance with its semantic content, and not on formal grounds. The idea laid down in it found its remarkable computer implementation and development in the form of hypertext, which was the basis for the creation of hypermedia and multimedia systems. In the second phase (early 1960s – 1975;) is the process of developing multimedia applications used in many spheres of life and human activities, including in the field of education, where a special place is occupied educational multimedia products that enable to deepen the knowledge, increase efficiency and reduce training time. In the third stage (1975). - the beginning of the 1990s;) multimedia

technologies, including text, graphics, digitized speech, sound recording, photography, animation, video clips, etc., are spreading.

The rapidly growing power and capabilities of personal computers, on the one hand, and the development of the ideas of object-oriented programming, on the other, have created an ideal environment for the technical implementation of multimedia. On the modern fourth stage (the beginning of the 90-ies of XX century – beginning of XXI century) is a further development of multimedia technologies. Multimedia (especially hypermedia) applications, being an effective means of presenting educational material, contain powerful means of branching and adaptation to the needs of students, allow them to freely search for information of interest and choose it, manage the learning process.

In addition, applications are generally equipped with effective tools to assess and monitor the process of learning and acquiring the necessary skills. Thus, it should be noted that multimedia technologies have penetrated into all spheres of human activity: science, production, management, education, culture, etc. Currently, there is an active creation of on-line multimedia products in the form of Internet sites dedicated to history. The use of MT in history lessons allows to diversify the educational process, contributes to the formation of interest in national history. When teaching history in high school with the help of MT, it is necessary to take into account the psychological and pedagogical characteristics of students, since the lessons of national history at this stage of training require additional information content and structural content, which can be represented by multimedia technologies.

Multimedia technologies enrich the learning process, make learning more effective, involving in the process of perception of educational information most of the sensory components of the student.

Today, multimedia technology is one of the promising areas of informatization of the educational process. The prospect of successful application of modern information technologies in education is seen in the improvement of software and methodological support, material resources, as well as in the mandatory professional development of the teaching staff.

Multimedia and hypermedia technologies integrate powerful distributed educational resources, they can provide an environment for the formation and manifestation of key competencies, which include primarily information and communication. Multimedia and telecommunication technologies open up fundamentally new methodological approaches in the system of General education. Interactive technologies based on multimedia will solve the problem of "provincialism" of rural schools both on the basis of Internet communications, and through interactive CD-courses and the use of satellite Internet in schools.

Multimedia - is the interaction of visual and audio effects under the management of interactive software using modern hardware and software, they combine text, sound, graphics, photo, video in one digital view.

Hypermedia is computer files linked through hypertext links to move between multimedia objects.

For computer classes at schools attractive are Internet technologies, however, possessing the advantages associated with the possibility of obtaining relevant information, opportunities of engaging in dialogue with almost all the world, they have serious drawbacks: difficulties when working with large volumes of data with poor communication lines (such as in remote regions and rural areas in Russia most), the inability to work without lines. These disadvantages are eliminated by the use of optical compact discs called CD ROMs and DVDs.

Available software products, including ready-made electronic textbooks and books, as well as their own development allow the teacher to improve the efficiency of training. Indispensable assistant teacher in finding and obtaining information, and as a means of communication with colleagues, becomes the Internet.

Use of multimedia technologies. It is possible to recommend the following main methodological features of the organization of training of the modern students:

- 1) lessons with the use of multimedia presentations are held in computer classes with the use of multimedia projectors, resident guides, automated training systems, videos of various programs, etc.;
- 2) in practical classes for each student should be assigned a separate computer on which it is advisable to create his personal folder, called the class cipher and the name of the student;
- 3) the individual approach including wide use of the individualized training programs, Bank of multilevel tasks (on practical classes and laboratory works shall be used);
- 4) it is advisable to carry out a significant part of the classes in the form of business games; as tasks should be given real life multivariate and undeliverable tasks, especially those with which graduates will meet in professional activities;
- 7) the project method should be widely used, in which it is necessary to observe the principles of consistency and continuity; this means that one global task should be consistently performed in all practical (laboratory) and computational and graphic works, supplemented and expanded, embodied in a coherent complete system;
- 8) the possibility of parallel and concentric study of the main sections of the program should be provided; this allows students to acquire a deeper knowledge of each of the sections as they learn the course, without losing the integrity of the presentation of all the material;
- 9) it is necessary to rely on the following interrelated principles: motivation of knowledge; versatile perception; "penetrating" system-information analysis;
- 10) it is necessary to use problem method of training more widely, to provide development by trained real programs (documents, tables, databases) which can be used in the course of training.

The use of multimedia technologies in education has the following advantages in comparison with traditional education:

- allows the use of color graphics, animation, sound, hypertext;
- allows continuous updating;
- has small publishing and reproduction costs;
- allows interactive web elements, such as tests or a workbook, to be placed there;
- allows parts to be copied and transferred for citation;
- allows the possibility of nonlinearity of the passage of the material due to the set of hyperlinks;
- establishes hyperlink with additional literature in digital libraries or educational websites;

Multimedia allows you to combine verbal and visual-sensory information, which helps to motivate students, the creation of relevant settings for learning.

The organization of classroom classes with the use of multimedia technologies makes it possible to save time, thereby intensifying the presentation of educational material, through the use of very simple, accessible to any student means. During the lesson, the students themselves can be created to the limit visualized colorful educational and gaming environment that produces a literally revolutionary effect in the perception of the subject "Informatics" students.

Multimedia computer technologies give the teacher the opportunity to quickly combine a variety of tools that contribute to a deeper and more conscious assimilation of the studied material, save time, saturate it with information.

The introduction of multimedia technologies in teaching the modern course of Informatics revealed a number of positive aspects and several difficult moments. So the organization of classes using multimedia technologies with the use of a special projector makes it possible to demonstrate the capabilities of the studied software and save time, thereby intensifying the presentation of educational material. At the same time, there are additional requirements for the preparation of multimedia materials and the organization of the lesson.

The inclusion of information multimedia technologies makes the learning process more technological and efficient. Yes, on this way there are difficulties, there are mistakes, it is impossible to avoid them in the future. But the main success is the interest of students, their readiness for creativity, the need for new knowledge and a sense of independence. The computer allows you to do lessons that are not similar to each other. This sense of constant novelty promotes interest in learning.

Thus, the use of multimedia in the classroom through interactivity, structuring and visualization of information increases the motivation of the student, the activation of his cognitive activity, both at the level of consciousness and subconscious.

Of all information channels, visual is the most powerful, so its use in the field of education by means of multimedia is more developed. However, this does not negate the importance of other media. For example, the efficiency of mastering the material significantly increases the creation of each multimedia textbook for its rhythmic dominant with the help of optimal selection of musical accompaniment. Intelligent interaction of keyboard and mouse in multimedia textbooks in combination with other media adds another advantage of this educational technology. It is based on the fact that manual exercises significantly develop memory. It is no accident that earlier in high schools contour maps were drawn – to “fill” the hand and to better remember. If in the future to achieve an increase in the normalization of use (to minimize accidental keystroke), the moments associated with the mouse and keyboard will be easier to formalize. It is necessary to rely on research in the field of engineering psychology and ergonomics. Individual works of individual author's consciousness (text, images, sound, video) are combined into a new system. Interacting with each other already at the stage of scenario development (calculation of all functionality expected from the product in accordance with its intended purpose), they lose their independence.

Multimedia work as a result of this interaction receives qualities that are not present in individual works. The fact is that science (linguistics, art history, etc.) has accumulated knowledge about these individual forms of information, and the properties of the multimedia environment are just beginning to be studied. Ultimately, multimedia in education are effective as far as their use solves a specific educational task – to teach something, to develop the skill of working with something. There is no doubt that multimedia technologies enrich the learning process, allow to make learning more effective, involving in the process of perception of educational information most of the sensory components of the student. Thus, according to G.Kirmayer, when using interactive multimedia technologies in the learning process, the share of assimilated material can be up to 75%. It is quite possible that this is probably a clearly optimistic assessment, but the increase in the efficiency of learning material, when the process of perception involves both visual and auditory components, was known long before the advent of computers.

Multimedia technologies have turned educational visibility from static to dynamic, that is, it became possible to track the studied processes in time. Previously, only educational television had such an opportunity, but this area of visibility lacks the aspect associated with interactivity. Modeling processes that develop over time, interactively changing the parameters of these processes is a very important didactic advantage of multimedia training systems. Moreover, quite a lot of educational tasks associated with the fact that the demonstration of the studied phenomena cannot be carried out in the classroom, in this case, multimedia is the only possible today. The experience of using multimedia technologies shows:

- students' interest in work and their activity sharply increases;

- develops algorithmic style of thinking, formed the ability to make optimal decisions, to act variatively;
- the teacher is released from the mass of routine work, the opportunity for creative activity on the basis of the results.

One of their features is interactive computer graphics. A well-known expert in the field of artificial intelligence D.A.Pospelov formulated three main tasks of cognitive computer graphics.

The first task is the creation of such models of knowledge representation, in which it would be possible to represent by monotonous means both objects characteristic of logical thinking and images-pictures, which operates figurative thinking.

The second task is to visualize the human knowledge, for which it is impossible to find a text description.

The third is the search for ways to move from the observed images-pictures to the formulation of a hypothesis about the mechanisms and processes that are hidden behind the dynamics of the observed pictures. Due to the fact that the basis of the educational process in full-time education are lectures, a form adequate to the level of development of information technology, it is necessary to recognize multimedia lecture courses delivered in specially equipped classrooms. Multimedia courses can also be used for individual distance learning with interactive properties control assimilated knowledge, and for group. Multimedia technologies allow software to connect slides of text, graphics, animation with the results of modeling of the studied processes. This makes it possible to embody at a new qualitatively higher level the classical principle of didactics - the principle of visibility¹.

Multimedia learning technologies - a set of technical training tools (TTT) and didactic learning tools - media (DLT). Technical means of multimedia provide conversion of information (sound and image) from analog, i.e. continuous, in digital (discrete) form for the purpose of its storage and processing, as well as reverse conversion, so that this information can be adequately perceived by man. Technical means of training can be classified according to a number of features: - functional purpose; - the type of training; - the physical principles of the device and work; - the logic of work; - the nature of the presentation of information; - the nature of the impact on the senses. Technical multimedia learning tools usually include:

- multimedia computer with sound stereocarto, drive DVD/CD-ROM drive, sound stereo speakers, microphone, graphics card;
- television tuners and radiotuner (Board receiver and radio), allowing to receive broadcasts and radio broadcasts;
- input devices of video images to a computer for digitization;
- cost to operate the VCR or camcorder; camcorders and digital cameras;
- WEB cameras for teleconferencing and visual communication;
- different screens;
- the device dimming cabinets;
- devices of audio and video reproduction and display of information;
- devices of remote control of technical means². Audio information and especially video information

converted into computer form requires a lot of storage space. Therefore, software products that have multimedia properties (textbooks, reference books, encyclopedias, e-learning courses) are distributed, as a rule, on CD-ROM. That is, a DVD/CD-ROM drive is required to use such products. To work with sound and video on the computer developed a variety of software tools that provide playback, editing, recording of audio and video information presented in various formats from different types of devices.

- Variants of application of MLT are very various, but from them it is possible to allocate three main: lecture courses, practical and laboratory occupations, distance learning. The latter is of particular interest. Multimedia learning tools affect the formation and development of human mental structures, including thinking. Printed text until recently, which is the main source of information is based on the principle of abstraction from reality in most languages is organized as a sequence of phrases in the reading order from left to right, which generates the appropriate skills of mental activity, having the same structure as the printed text, which is characterized by features such as linearity, consistency, analytic, hierarchy. Other means of mass communication and information-photography, cinema, radio, television — have a structure significantly different from that of the press. Images and sounds do not direct the train of thought of the listener or viewer from object to object with intermediate conclusions, as in the perception of printed information. Instead, they create models of recognition that address the sensory side of the subject. Just as printed materials and technical means of mass communication have led to a huge expansion of the possibilities of human cognition, fixation and transfer of experience, the computer should increase the potential of human thinking, cause certain changes in the structure of mental activity. In the continuous and distance learning environment created by the MLT, the main processes are the organization and interpretation of

¹ Язык программирования Java. Учебный курс Вадим Валериевич Монахов http://barsic.Spbu.ru/index_r.html

² Галишникова Е. М. Использование интерактивной доски в процессе обучения // Учитель. - 2007. - № 4. - С. 8-10.

multimedia information. It can be encoded and presented on the display screen in the form of mathematical symbols, tables, graphs and diagrams, images of processes supplemented by sound, color images, etc³.

Multimedia technologies allow the use of visual means of different expressiveness in accordance with the content of the subject and the laws of psychological impact and perception. MLTs allow:

- to increase the informativeness of the lecture;
- to stimulate the motivation of learning; - to increase the visibility of learning through structural redundancy;
- to realize the accessibility and perception of information through the parallel presentation of information in different modalities;
- visual and auditory (permanent redundancy);
- to create a comfortable working environment for the teacher at the lecture. The conditions of open learning created by the multimedia information environment should contribute to the development of the learner's thinking, Orient it to the search for obvious and non-obvious system connections and patterns. Really effective can be considered only training, in which students are taught the skills of thinking, and thinking of a new type, in a certain way different from thinking, formed on the basis of operating printed information, the use of mass communication. When implementing the MLT, the ideas not only about thinking are subjected to revision; but also about other mental functions: perception, memory, ideas, emotions, etc. Psychologists and teachers are faced with the problem of conceptual description of the development of human activity and mental functions in the conditions of technologization and use of multimedia in continuous and distance education.

In general using of multimedia technologies in the education:

- Create opportunities for deeper and more perfect mastering of the materials given;
- Establish close contacts with new areas of Education;
- As a result of the reduction in training time, it is possible to save time;
- The acquired knowledge is relatively preserved in the memory of a person for a long time and will be able to apply it in practice at any time.

The rapid development of Information Technology in recent years has given us the opportunity to be new and unique, that is, to use electronic textbooks and multimedia products in educational processes.

The use of multimedia in educational programs complements the analytical capabilities of computers with the possibility of comprehensively describing the subjects of the science being taught as meaningful and imaginative.

It is known that the reader absorbs only a quarter of the information he hears for the first time. If the active participation of the student in the educational process with the help of interactive multimedia technology is ensured, then mastering a new topic can be up to 75 percent. Due to the fact that interactive multimedia has a great emotional – aesthetic effect on the student, great demands should be placed on the quality of multimedia programs, since the product of aesthetically poor multimedia reduces the effectiveness of the learning process and in some cases can also have a negative impact.

From the point of view of creativity and impressiveness, multimedia should be considered a new type of art, as well as the creation of multimedia art theory and Multimedia pedagogy.

Attention should also be paid to the use of rich historical and spiritual heritage of our country, historical monuments, museums. The formation of correct concepts about the life of self-sacrificing people, the changes taking place in the information sphere of the world, the media and the internet provides the basis for the formation of skills to draw the right conclusions in the requirements.

In spiritual and educational work, it is worthwhile to pay special attention to discussions, discussions aimed at the formation of skills of independent thinking in Students-Students. It is a good effect to link and organize the themes with life as much as possible. Taking into account the above, the transition of the lesson using multimedia tools will greatly help in achieving the intended goal in ensuring more interesting, clear, concise and understandable the lesson process.

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