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USE OF INFORMATION TECHNOLOGY FOR IMPROVEMENT OF EDUCATIONAL PROCESS QUALITY IN HIGHER EDUCATIONAL ESTABLISHMENTS

Penetration of information technology is one of the most significant global processes of today. In its turn, the rapid pace of such dissemination involves mass introduction of methods and means of collecting, processing, transmitting, and providing information based on computer technology and means of communication. None of the spheres of contemporary life remains outside the influence of information technology.

In a rapidly changing world, when professionally significant information constantly changes, prospective specialists have to possess skills and faculties of processing information flow and using information technology as a means of getting new knowledge, information, improvement of performance and efficiency of work.

S. O. Sysoeva notes that the information society produces an abundance of information coming to people from sources having different degrees of credibility. Therefore, search, assessment, structuring, and work with information are strategic knowledge, which everybody should possess to navigate cyberspace and create their own ideas about the world around. New information technology also affects our culture [1].

I. A. Zyazyun points out that building information culture is possible only on condition of the differentiation of stages of obtaining and analyzing information, creating the system of evaluating the validity of knowledge and professional competence. Using information technology in this context will enhance the development of not only motivational and cognitive systems, performance, but also

the formation of telecommunication cooperation, realization of active forms of constructive communicative interaction [2, 86]. This is the reason why the most essential note of our time is informatization of education. It is broadly defined as the complex of social and educational transformations associated with the saturation of the educational systems with information products, tools, and technologies. In a narrow sense, it is understood as the introduction in educational establishments of information tools based on microprocessor technology, as well as information products and educational technologies based on this technology.

The informatization of education requires new approaches to the development of the content, forms, and methods of professional training of the specialists of the new era, implementation of modern information technology into the educational process in higher educational institutions. In scientific and methodical literature devoted to the problems of informatization of higher professional education (R. S. Hurewicz [3] M. I. Zhaldak [4] M. U. Kademiyi [3] G.O. Kozlakova [5], I.V. Robert [6] et all), the possibilities of modern information technology as a means of improving the quality of learning process are being explored.

Modern concept of education requires intensification of educational process, which means using greater number of media during lectures or practical classes. Equipment of classrooms with multimedia assets makes the process of knowledge transfer efficient and exciting. Not only at numerous seminars and conferences, but also in the classrooms, do more and more professors accompany their oral presentations with multimedia ones. Current students obtain increasingly more information in the form of presentations through multimedia projectors. These are electronic slides, illustrated subject matter of lectures, as well as slideshows, which are automatically displayed and contain multimedia components: sound, video, animation, and others. Therefore, the purposes of our research is to develop methods of preparing slide presentations and identify features of their application at various stages of class sessions in higher educational establishments, which promotes the learning process.

General didactic requirements for preparing slides are the following:

1. Information on the slide should come up to the latest achievements of science, engineering, as well as best manufacturing practices.

2. When creating a slide, it is necessary to use such forms of depicting an object that are more expressive than other visual aids.

3. The form of presentation of information should match students' proficiency level.

4. Visual aids should illustrate the most difficult for understanding parts of the curriculum.

5. Organization of the elements on the slide should allow for the demonstration of the slide in its entirety, as well its separate elements.

Most convenient form of the preparation of multimedia teaching materials is presentation that includes both electronic slides and slideshow with multimedia components: sound, video, animation, and others.

The presentation is best read when no more than one or two fonts are used. It is desirable to use fonts that do not contain fine lines. Punctuation marks should be avoided, even if slides contain complete sentences. No full stop at the end of the sentence helps the eye focus on the main in the sentence - its content. Short phrases are preferable to sentences. The task of the lecturer is not to read the text, but to talk freely, using slides as supporting material. Slides only focus on the information being delivered.

An important component is the areas not filled with any information that facilitate the perception of the slide. Properly prepared slide has large spacing between the lines, as well as large margins. Too much text overloads viewers. Assigning numbers to paragraphs presupposes certain order; if it is not necessary, it is better to use bullets. Capitalization of the entire text should be avoided, because it complicates movement from one word to another. For readability purposes, the font of the main text should be at least 24. Titles should be even larger.

When using color, it’s necessary to adhere to the natural color of the object shown. Also, no more than four colors per one slide should be used, and their psychological impact should be considered.

In most cases, the slide should feature one object; this will ensure its better retention than in a group with others. As an exceptional case, two objects can be placed on one slide, the presenter (lecture/instructor) opening and explaining one after another and, then, providing their comparative description.

One should avoid placing too much information on the slide, especially tables, as they do not read well. It is better to split information into several logically coherent parts and to demonstrate them on individual slides. Slide is not an independent teaching aid, it must be accompanied with oral commentaries; for that reason, if possible, one should avoid unnecessary notes and text additions on the slide that duplicate oral presentation of the professor and distract students. If the author finds it necessary to give comments, he/she should make sure that they could be closed without distorting the image. When placing textual information, it’s necessary to remember that visually it is perceived from left to right, from top to bottom.

Multimedia lectures combine into integrated informational and learning environment different types of information, both traditional, such as text, tables, images, charts, etc., and original, which are accompanied by music, animation, etc. Such lectures make for the introduction of elements of problem-solving tasks and increase students’ involvement; they enhance feedback between students and professors. Thus, the lecture’s efficiency is increased.

The following principles should be observed when creating a slide presentation:

• slide is not a self-contained source of information, that is why its content cannot be fully mastered without explanations of the professor;

• in preparation for the lecture, a sequence of the slides should be determined, as well as the explanation to accompany each slide;

• slides should be concise;

• slides should not be loaded with excessive animation;

• sophisticated charts (pictures) should be gradually built up immediately in front of the students, i.e. individual elements should be added one after another according to a certain logical sequence;

• font size of both image-related and independent texts is to be selected depending on the size of the screen the slide will be projected to;

• slide background color should not be very bright, neither should it be of cold dark color;

• similar objects must be animated first, then copied and modified;

• the end of each slide should be marked with a special symbol to make sure students finish summarizing this slide before moving to the next;

• perception of any image requires certain time; for this reason, after the presentation of each slide and before the beginning of explanation, the instructor should make a pause; and

• when using slides, it is important to gain advantage from the option of the quick change of slides. The image on the screen should only appear at the time when it is necessary and, when there is no need for it any longer, the projector should be turned off.

Multimedia information is of continual, holistic nature, it is directly perceived by the mind. At that it appeals to the right hemisphere of the brain responsible for visual thinking and creativity.

The combination of the professor’s oral presentation with video information or animation significantly activates the students' attention to the contents of educational material, increases interest to the proposed topic, and facilitates its perception by students. But this goal is achieved only under the following circumstances: multimedia support is designed according to the structure and logic of the lecture; the professor is not "tied" to the slides and can move away from them; multimedia material is prepared according to the standards of presentation of information on the slide (slide contents) and design of the slideshow.

The presentation should supplement, illustrate what is being presented to the students. At the same time, it should neither become the major part of the lecture, nor should it completely duplicate the lecture material. Ideally, there is the combination of the text and the presentation, when a student, having missed or failed to understand some of the information from the professor's oral presentation, could restore it using slides. Background music is not desirable either (except, of course, when its use is justified by the material), because it will distract attention: it is difficult to simultaneously listen to the music and to the lecturer.

When delivering lecture using slide presentations one should adhere to the following order:

1) slide with the topic of the lecture, 2) presentation of the lecture material accompanying it with a slideshow, and 3) if the slide is animated, in the process of explanation the amount of information on the slide should build up gradually, the dialogue with the audience being kept.

Therefore, presentations should be short. The number of slides and duration of the presentation should be interconnected. The exposure of each slide should correspond to one minute of lecture's speech. In the light of the demonstration effects that are used on the slide, this time should be increased.

When placing objects on the slide and animating them, one should take into account the laws of composition. There should be used as few effects required for the expression of the presentation design as possible. It does not seem reasonable to use the effects for the effects' sake, because they will distract from the content of the presentation.

Visual aids such as slides and multimedia presentations can be used at the following stages of class sessions: introduction, explanation of the new material, updating of prior knowledge, fostering of academic motivation, consolidating of learning material, measuring of the students' grasp of the subject matter, explanation of tasks for out-of-class individual learning activities.

During the introduction, when students need to be explained the purpose and the content of the session, a slide indicating the list of topics and questions for

study should be displayed. This information featured on-screen accelerates note-taking.

Text visual aids make most sense during the introduction of the new material: new definitions, basic characteristics of the object studied when the material is complicated and textbooks are not available. In this case, the notes taken during the class session is the only source of learning material during out-of-class learning activities. This slide(s) should contain the summary of the learning material, which should be reflected in the notebook. This method should be used when students have not yet learned to take notes properly and efficiently. In such cases, the professor should first explain the material and, then, give time for the note-taking.

Slides can also be used instead of the traditional blackboard: to provide data for test papers, individual or home tasks, to introduce concepts that are difficult for perception by ear, or mathematical formulas. Using text slides instead of messages on the blackboard allows the professor to maintain the contact with the students, monitor their actions and react to the changes in their behavior because he/she constantly faces the audience.

To refresh the concepts that are used as references when learning new material, it is expedient to demonstrate the related images. These can be images used in forming these concepts. Academic motivational activity of the professor creates in the students the interest in the perception of the information that will be presented during the lecture or assigned to independent study. The formation of the interest can occur in different ways: explanation of information for future professional activities, demonstration of the problems that can be resolved using this information; telling about the production problems that have been resolved using this information. The effect of the use of any information may be shown as graphs or charts that show the profitability or any other effect of its application.

Explanation of the new material can be started with the display of the video, on the basis of which further presentation of the material will be based; also individual slides can be used to illustrate the main points of the lecture. In any

case, the visual guide is a visual pivot that helps students to more fully grasp the learning material. The relationship between the professor's speech and the information on the screen may be different, and it defines the explanation offered by the professor, namely:

- *The image on the screen is the main source of information*. For example, real or conventional image of material objects require that the professor name the object's components, features, identify the main information, and establish relationships between the major parts. With the growth of students' proficiency, students should be engaged in discussing visual aids to reduce the professor's comments.

- *The image on the screen is equivalent to the professor's words*. In this case, the professor explains, summarizes, and supplements only the information shown on the screen. For example, using the image on the screen as a reference, he/she forms in the students the concept of the objects of the entire class. In this case, he/she first explains the general scheme of the object and, then, demonstrates 1-2 images of the real objects of this class.

- *The image on the screen supplements the words of the professor*. In the study of general concepts about the phenomena, laws, and processes, the main source of knowledge is the words of the professor, whereas the images on the screen make available their schemes or concrete manifestations.

Consolidation of the material is necessary for better retention and clear structuring. To this end, at the end of the lecture the professor reviews the material studied, emphasizing the main provisions and their relationship. This rehearsal of material occurs not only verbally but also with the demonstration of the most important visual aids on the slides.

Thus, the intensive development of the process of informatization of education contributes to the expansion of the modern technology scope of application. The process of informatization of education and the consequent use of modern technology in the learning process leads not only to the changes in the organizational forms and methods of teaching, but also to the emergence of new

teaching methods. Along with this process, innovative approaches to the problem of the level of students' proficiency are being introduced. These approaches are based on the use of computer programs that diagnose control and evaluation procedures of quality of students' achievements. The shift in the contents and structure of education, ideas about the forms, methods of teaching and monitoring of the results leads to the changes in individual teaching methods.

When using multimedia presentations, one should be aware that the slide is not an independent source of information. That is why its contents cannot be fully mastered without the explanations of the professor. Development of lectures with multimedia component involves sequencing slides and preparing explanations that will accompany each slide. At the same time, multimedia support is information of holistic nature, which is directly perceived by the mind.

Prospective lines of development of the research in this area are the study of the capacity to integrate the computer and the various means of transmission of audiovisual information when developing video computing systems, the implementation of artificial intelligence capabilities during the development of intelligent educational software.

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Poyasok T. B. Use of Information Technology for Improvement of Educational Process Quality in Higher Educational Establishments

Abilities of educational process affectivness improvemen with the help of multimedia presentation were analyzed, slide-making regulations were defined for their educational purposes, main abilities of multimedia presentation at different stages of a lesson were presented, attention was paid to peculiarities of presentation slides creation for their use in lecture material exposure.

Key words: multimedia support, a slide presentation, video information, information technologies.

Поясок Т. Б. Застосування інформаційних технологій для підвищення якості навчального процесу у ВНЗ

У статті розглянуто можливості підвищення ефективності навчального процесу за допомогою застосування мультимедійних презентацій, визначено правила створення слайдів для навчальних цілей, показано можливості мультимедійних презентацій на різних етапах заняття, акцентовано увагу на особливостях створення презентаційних слайдів для їх застосування у процесі викладання лекційного матеріалу.

Ключові слова: мультимедійний супровід, слайд-презентація, відеоінформація, інформаційні технології.

Поясок Т. Б. Использование информационных технологий для повышения качества учебного процесса в вузе

В статье рассмотрены возможности повышения эффективности учебного процесса с помощью применения мультимедийных презентаций, определены правила создание слайдов для учебных целей, показаны возможности мультимедийных презентаций на разных этапах занятия, акцентировано внимание на особенностях создания презентационных слайдов при их применении в процессе преподавания лекционного материала.

Ключевые слова: мультимедийное сопровождение, слайд-презентация, видеоинформация, информационные технологии.

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