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TECHNICAL AND SOFTWARE MULTIMEDIA TOOLS USED IN TEACHING STUDENTS OF THE BELARUSIAN STATE UNIVERSITY OF INFORMATICS AND RADIOELECTRONICS

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Abstract. The advantages and disadvantages of using multimedia in classes are considered, examples of the use of multimedia tools in classes at BSUIR are presented.

Keywords. Multimedia tools, interactive whiteboard, presentation, visual picture, types of information, teaching methods.

The modern university educational system is a very flexible, dynamically developing mechanism that requires constant updating of both the content of education and its methodological system in the field of teaching methods and means.

The volume of information on the entire cycle of academic disciplines is increasing, and the time allocated for their study is most often reduced. This is an inevitable process: the density of educational information necessary for effective training of specialists is increasing, and this, undoubtedly, is reflected at any level of the education system.

The capabilities of modern computer, presentation and telecommunication technologies make it possible to maximally intensify the learning process, while increasing the volume of educational information.

The introduction of multimedia technologies is one of the most promising trends in the informatisation of education. But such an orientation requires mandatory compliance with many conditions. It is necessary to improve the qualifications of teachers, improve methodological and software, and material resources. The use of multimedia provides significant educational resources that can shape and develop key abilities and skills. In relation to students, we are talking primarily about communicative and information competencies.

The advantages of using multimedia in an educational environment compared to traditional learning include: a more technologically advanced and effective learning process; a combination of verbal and visual-sensory information that contributes to the motivation of students and the creation of a mood for learning; saving time, educational material is presented intensively using simple, accessible means [1].

Technical means make it possible to introduce into educational activities the ability to operate with information of different types, such as sound, text, photos and video images. These tools, in some cases, turn out to be very complex technically and technologically and can well be considered as multimedia tools.

Multimedia technologies make it possible to integrate many types of information in a meaningful and harmonious way. This allows information to be presented in various forms using a computer, such as:

– images, including scanned photographs, drawings, maps and slides;

– voice recordings, sound effects and music;

– video, complex video effects;

- animations and animation simulation.

To organize the educational process at the proper level, BSUIR uses modern multimedia equipment – a projector and an interactive board. Interactive educational material on disciplines is presented by the author's lessons and presentations. The main tool for creating presentations is Microsoft PowerPoint. The image from the screen allows you to give a visual image, and not waste time, being distracted by legible writing of text on the board. It is possible to simultaneously explain educational material, demonstrate diagrams, tables, drawings and operate a computer. A high-quality presentation with diagrams, tables, graphs, photographs, and animation effects helps to demonstrate the topic being studied, find a common language with the audience, and ultimately allows you to achieve the desired results. It is bright, expressive, dynamic, interesting visual material that involves students in active work and provides the most complete perception of the holistic image of the information they are studying. Students do not have to write down the material, but save and print everything that is on the board. Using an interactive whiteboard in lessons makes it possible to quickly combine a variety of tools that promote a deeper and more conscious assimilation of the material being studied, save lesson time, saturate it with information, and also makes the learning process more technologically advanced and effective. An ordinary lesson becomes more effective and its dynamism increases. Using a special marker on the interactive whiteboard, adjustments, clarifications and highlighting of text are made for better memorization. When explaining the material, it is possible to save notes on the screen during the lesson, which you can return to in subsequent lessons. Various lines, shapes, and the pen tool are used for markings. It is possible to record a selected piece of visual information for its subsequent movement or review [2].

The interactive whiteboard also offers great opportunities for consolidating what has been learned and practicing educational skills. Students enter the missing text material into the presented diagrams, fill out the tables and correct errors in their groupmates' answers using a marker. Thanks to the use of an interactive whiteboard, a lot of time is saved, lessons become more lively and attractive, bright and colorful due to working with color, rich in additional information.

The interactive whiteboard software (SMART Board Software) includes the following tools:

– notebook (SMART Notebook);
– video recording tool (SMART Recorder);
– video player (SMART Video Player);
– additional (marker) tools (Floating Tools);
– virtual keyboard (SMART Keyboard).

All these tools can be used either separately or in combination, depending on the educational tasks being solved.

Also, today it is difficult to imagine the educational process at BSUIR without the well-known multimedia technology – presentation. It can be used at different stages of the learning process. This can be solving problems with showing samples and returning to the original conditions and drawings with sufficient savings in time spent on the lesson and the opportunity for the teacher to assess the degree of knowledge mastery by a large number of students, a frontal survey with information displayed on the screen and verification via a hyperlink, updating existing knowledge.

In such a lesson, the teacher acts as a consultant, becomes closer to the students, which helps to increase cognitive activity in students, thirst for knowledge and an increase in the level of assimilation of the material received. In addition, there are more opportunities for individual work with students.

A multimedia presentation can be used not only when studying and consolidating new material, systematizing knowledge, but also to deepen knowledge on certain topics. Thus, presentations can be used as additional material for students' independent assignments, when checking students' independent work, and even as a means for producing didactic handouts.

To develop and implement this kind of set of methods and tools, a multimedia projector, a personal computer, software, and connecting the projector to a computer are required. The computer and multimedia projector have become the most common means of delivering information, making it possible to present material in the most accessible visual and verbal form for students.

When organizing student training at BSUIR, the following elements are used:

1) classes with multimedia presentations (conducted in lecture halls, in computer laboratories equipped with multimedia tools);

2) practical classes (each student is assigned a separate computer on which he performs tasks);
3) laboratory classes;
4) the project method;
5) classes using a problem-based teaching method involving students developing applications (documents, tables, databases).

The introduction of multimedia into the educational process reveals both positive aspects and certain difficulties. On the one hand, visual demonstration and intensification of the presentation of educational material, saving time, on the other hand, additional requirements for organizing classes and developing multimedia materials. Problems and mistakes arise that sometimes cannot be avoided. But the most important thing is achieved – students' readiness for creativity, the development of independence, the need to acquire new knowledge, and the motivation to learn.

Undoubtedly, the final result depends on the qualifications, skill and interest of the teacher. A skillful combination of traditional teaching methods and multimedia allows you to create the most effective lessons.

Thus, multimedia technologies in combination with a competent pedagogical approach can not only attract the attention of students, but also increase the level of their learning motivation and, thereby, the quality of assimilation of the program. Each teacher can have his own set of tools, included in a multimedia portfolio, suitable for a particular teacher and meeting his pedagogical goals. Therefore, to introduce multimedia technologies into the educational process, it is so important to constantly develop in this direction and look for such tools, improve PC skills, and be able to plan the structure of actions.

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ТЕХНИЧЕСКИЕ И ПРОГРАММНЫЕ СРЕДСТВА МУЛЬТИМЕДИЙНОГО ОБЕСПЕЧЕНИЯ, ИСПОЛЬЗУЕМЫЕ ПРИ ОБУЧЕНИИ СТУДЕНТОВ БЕЛОРУССКОГО ГОСУДАРСТВЕННОГО УНИВЕРСИТЕТА ИНФОРМАТИКИ И РАДИОЭЛЕКТРОНИКИ

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Аннотация. Рассмотрены преимущества и недостатки использования мультимедиа на занятиях, представлены примеры использования средств мультимедиа на занятиях в БГУИР.

Ключевые слова. Инструменты мультимедиа, интерактивная доска, презентация, наглядная картинка, виды информации, методы обучения.