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РАЗРАБОТКА ЦИФРОВЫХ ОБРАЗОВАТЕЛЬНЫХ РЕСУРСОВ И ПРИМЕНЕНИЕ В УЧЕБНОМ ПРОЦЕССЕ

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DEVELOPMENT OF DIGITAL EDUCATIONAL RESOURCES AND THEIR APPLICATION IN THE EDUCATIONAL PROCESS

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Аннотация. В статье автор раскрывает диалектические противоречия процесса внедрения средств информационных и коммуникационных технологий в учебный процесс общеобразовательной школы. Автор показывает, что выявленные противоречия объективны, являются следствием всеобщего развития общества, но влияние их на процесс обучения неоднозначно.

Аннотация. Рассмотрены цифровые образовательные ресурсы и возможности их использования на занятиях. Раскрываются цели и задачи использования ЦОР. Применение ЦОР показано на примере темы "Информация. Виды информации" на уроках информатики в 3 классе

Abstract. Digital educational resources and the possibilities of their use in the classroom are considered. The goals and objectives of using the DER are disclosed. The application of the DER is shown in the example of the topic " Information. Types of information" in computer science lessons in the 3rd grade.

Ключевые слова: Ключевые слова: цифровой образовательный ресурс, классификация ЦОР, информационно-коммуникационные технологии, мультимедийные средства.

Key words: digital educational resource, classification of DER, information and communication technologies, multimedia tools.

Currently, a new education system is being formed, which is focused on entering the world information and educational space. The content of education is one of the factors of economic and social progress of society and should be focused on ensuring self-determination of the individual, creating conditions for his self-realization [1]. Therefore, one of the main tasks of a modern school is to create optimal learning conditions that ensure not only the high-quality assimilation of a complex system of knowledge by a graduate, but also its development.

In the context of integrated informatization of education, it is important not only to have technical equipment with information and communication technologies (ICT), but also to have full-fledged digital educational resources (DER).

It is difficult to imagine the modern educational process without high-quality provision of educational electronic materials. In recent years[4], their specific composition has been supplemented with such new pedagogical software tools as electronic textbooks, computer modeling tools, Internet sites, simulators, training programs and other educational resources [4].

Thanks to the presentation of educational information in digital form, a comprehensive impact on the student is carried out, the student's interest in learning increases, his range of knowledge expands, the quality of learning increases, and feedback between the teacher and the student is also facilitated.

One of the problems of modern education: the lack of involvement of a significant part of educational institutions in the processes of innovative development, as well as in the information space of society and the insufficient use of modern educational technologies, etc.

Along with teachers who actively use ICTs, there are quite a lot of teachers who have a superficial understanding of information resources and technologies [3], the possibilities of their use to improve the effectiveness of teaching activities. In order to form this competence in students, the teacher himself must have information and communication competence, be able to navigate in various types of DER, be able to use digital educational resources to solve various pedagogical tasks: motivating students, setting goals and objectives, organizing pedagogical activities, evaluating the results of activities, etc.

To solve this problem, a study was conducted, the purpose of which was to improve the quality of education with the help of digital educational resources.

The following tasks were set [5]:

1. Define the concept of " Digital educational resource»;

2. Consider the classification of digital educational resources;

3. Discover the possibilities of digital educational resources;

4. Show the application of the DER on the example of the topic "Information. Types of information" in the 3rd grade (computer science).

So, what is a digital educational resource?

A digital educational resource (DSCs) is a content - specific object intended for educational purposes and presented in a digital, electronic, or "computer" form [6].

The use of DER in teaching allows you to expand the possibilities of the lesson, while also increasing its effectiveness. Presented in digital form, educational materials make it possible to use them without difficulty at various stages of the lesson, and to solve the tasks of the lesson:

* the stage of updating knowledge – electronic tests, electronic constructors;
* the stage of explaining new material – electronic textbooks, encyclopedias, reference books, multimedia presentations, educational videos;

DER help to demonstrate the phenomenon in dynamics, transmit educational information in certain portions, acting as a source and measure, also stimulate the cognitive interests of students, allow for operational control and self-control of learning outcomes [5].

The goal of the DER is to strengthen the mental abilities of students in the information society and improve the quality of education at all levels of the educational system.

Consider the definition given by Bosova L. L. " ... DER – resources necessary for the organization of the educational process and presented in digital form, namely: photos, video clips, static and dynamic models, role-playing games, objects of virtual reality and interactive modeling, cartographic materials, sound reDERdings, symbolic objects and business graphics, text documents and other educational materials selected in acDERdance with the content of a particular textbook, "linked" to the lesson planning and provided with the necessary methodological recommendations." And this definition is the most accurate at the moment [7].

You can distinguish the following tasks for using the DPS::

1) Help the teacher in preparing for the lesson:

* layout and simulation of the lesson from individual digital objects;
* a large amount of additional and reference information-to deepen knowledge about the subject;
* effective information retrieval in a set of digital educational resources;
* preparation of control and independent work (possibly acDERding to the options);
* preparation of creative tasks;
* preparation of lesson plans related to digital objects;
* share the results of activities with other teachers via the Internet.

2) Help the teacher during the lesson:

* demonstration of prepared digital objects via a multimedia projector;
* use of virtual laboratories and interactive recruitment models in front-end laboratory work mode;
* computer testing of students and assistance in assessing knowledge;
* individual research and creative work of students with digital educational resources in the classroom.

3) Help the student with the preparation of homework:

- increase the interest of students in the subject through a new form of presentation of the material;

- automated self-monitoring of students at any convenient time;

- a large database of objects for the preparation of speeches, reports, abstracts, presentations, etc.;

- the ability to quickly obtain additional information of an encyclopedic nature;

- development of students ' creative potential in a virtual subject environment;

- help the student to organize the study of the subject at a convenient pace and at the chosen level of assimilation of the material, depending on its individual characteristics of perception;

- introducing students to modern information technologies, forming the need to master information technologies and constantly work with them.

Let us outline the gene

- offer types of educational activities that orient the student to gain experience in solving life problems based on the knowledge and skills within the subject;

- ensure the use of both independent and group work;

- contain options for training planning, assuming a modular structure;

- be based on reliable materials [8];

- exceed the volume of the relevant sections of the textbook, without expanding, at the same time, the thematic sections;

- fully playable on the declared technical platforms;

* + provide the ability to use other programs in parallel with the DCS;
	+ provide, where methodically appropriate, individual customization and retention of interim work results;
	+ have, where necessary, built-in contextual help;
	+ have a user-friendly interface.

Digital educational resources should not:

* represent additional chapters to an existing textbook or QMS;
* duplicate publicly available reference, popular science, cultural, etc. information [9];
* be based on materials that quickly lose credibility (become obsolete).

Let's look at some examples of using the DER at different stages of the lesson.

DER at the stage of updating knowledge: effectively use electronic tests. The use of tests makes it possible to assess the level.

The use of DER in the educational process is an attempt to offer one of the ways to automate the educational process, optimize it, raise the interest of students in studying the subject, implement the ideas of developing learning, increase the pace of the lesson, increase the amount of independent work. The DER contributes to the development of logical thinking, the culture of intellectual work, the formation of independent work skills of students, and also has a significant impact on the motivational sphere of the educational process, its activity structure.

In a lesson with the use of the DER, the teacher is the organizer of the entire lesson and a consultant. TSRs do not replace the teacher or the textbook, but fundamentally change the nature of pedagogical activity. The introduction of the DER in the educational process expands the capabilities of the teacher, provides him with such tools that allow him to solve problems that have not been solved before [10].

The introduction of new information and communication technologies in the modern educational process will help to provide better training for students. That is why it is important to be able to create a DER for the teacher himself.

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