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IMPORTANCE OF MULTIMEDIA IN THE DEVELOPMENT OF MODERN GEOLOGICAL KNOWLEDGE

Annotation

Geological knowledge in school geography is a didactically developed system of ideas and concepts, cause-and-effect relationships, laws and hypotheses, theories that form the main content of geological science. Analysis of geography education standards and curricula allows to identify the basic geological knowledge, skills and competencies that form part of the geographical education of school children.

Key words: geographical knowledge, multimedia tools, educational method, educational tools, classroom, educational equipment, visual aids.

Introduction. The peculiarity of geological knowledge is that more scientific progress remains at the hypothetical level at the moment. This requires consideration of different perspectives on processes and events within the school geography courses. In this regard, it is necessary to provide various views for the formation of geological knowledge. For example: geological and tectonic maps, maps of mineral resources, etc.; geological and graphic images of events, processes and objects; photographs, illustrations, statistical materials, etc. It should also be noted that most of the geological objects, phenomena and processes are infinite in time and space as the subject of study. Therefore, in the process of studying geological objects, phenomena and processes, it is necessary to model them and demonstrate their dynamics in space and time.

All of the above creates the need to form this group of knowledge on the use of multimedia technologies, including multimedia tools and resources.

Material and methods. The following possibilities can be distinguished in the use of multimedia tools in the process of teaching geography:

- demonstration of geological processes and events in development in time and space;
- demonstration of geological processes or events that took place in inaccessible (remote or dangerous) places for direct observation;
- modeling geological objects, events and processes, highlighting their most important features;
- scientific documentation and reliability of the photographed object, process or event.

According to I. G. Zakharova, Multimedia is a computer system that provides comprehensive support for audio and video recordings. Multimedia tools are understood by him as interactive tools that allow simultaneous work with still images, videos, animated graphic images, text, speech and sound. [1]

Kalina I. Y. [2] believes that a certain set of objects represented on the computer screen and in different ways (text, graphics, animation, video, 3D models) are multimedia tools that allow simultaneous reproduction of sound.

Many Definitions of "Multimedia" Multimedia includes text, graphics, animation, video, and audio information, allowing for a variety of ways of structure, integration, and presentation.

In our research, we consider multimedia learning tools - a range of interactive learning tools in the modern educational space, including text, graphics, animation, video and audio information, which can be structured, integrated and presented in a variety of ways. allows methods.

Multimedia resources are a set of non-textual (audio and video) types of information in archives, libraries, funds, data banks and other information systems organized for the effective acquisition of reliable information. [3]

The analysis of pedagogical and methodological literature allowed us to emphasize that the use of multimedia tools in the process of formation of geological knowledge in the study of geography should meet the following didactic principles: scientific, conscientiousness, availability, activity, systematicity, consistency and visibility, openness, interactivity.

The scientific principle is implemented in the use of multimedia in several aspects:

1) optimization of the selection process of educational geological materials based on the analysis of statistical data and the use of geoinformation systems by teachers, ensuring a significant increase in the sample size;

2) improvement of the methods of presentation of basic geological maps by creating educational models;

3) increase the efficiency of managing the process of acquiring geological knowledge using computer capabilities to register educational parameters.

The principle of consciousness in the use of multimedia tools is provided by the ability of the student to consciously choose his own strategy to achieve the educational goal, as well as to provide the student with a wide range of software, the use of which can increase awareness in the actions of the audience and study geological materials. It helps to improve the quality of learning. The advantage of the computer is that it provides new geological information on demand, when the student is aware of his need.

The principle of availability in the use of multimedia tools is implemented in providing students with auxiliary information geological data and individual information. The principle of student activity was initially included in the process of computer learning, because the initiator of working with multimedia tools is always the user. In the conditions of the computerized educational process, the principle of student activity is realized in the characteristic feature of multimedia educational tools - interactivity.

The principle of systematicity and consistency is embodied by managing educational activities through a certain sequence of serving parts of systematically

organized educational geological material provided for in the multimedia program.

The principle of appearance is implemented in the form of an interconnected presentation of material based on the symbolic systems of form, color and text. In the process of formation of geological sciences, the didactic functions of visualization expand when using multimedia teaching tools, because in addition to the traditional functions of perception, presentation and systematization of geological materials, it performs the functions of creating communicative situations and psychological environment, visual activation, signaling and modeling. [4]

In the formation of geological knowledge, multimedia educational tools are verbal with the help of static visual tools (texts, photos, drawings, diagrams, graphics, tables), dynamic visual tools (animation, video track), auditory tools (a combination of music, noise and text accompaniment). and allows for almost all types of non-verbal communication. [5]

Among the features of multimedia tools that are of particular importance in the formation of geological sciences, it is possible to highlight openness and flexibility (the ability to change and supplement their content, to choose an educational strategy); the ability to provide an individual and differentiated approach to learning (learning can be built within the framework of a person-oriented model, taking into account the individual pace of acquiring knowledge and skills, the level of learning and the interests of students); hyperactivity is a characteristic of multimedia and refers to the process of providing information in response to user requests.

Interactivity allows you to control the presentation of geological information, adjust the speed and number of repetitions of the material. The student's interaction with multimedia educational tools should be interactive, that is, mutually active. Interactivity is manifested in the ability of the student and the multimedia resource to participate as equal partners in solving educational tasks, and this is the conscious activity of the student supported by computer-controlled

activity. Interactive interaction plays a special role in the formation of geological knowledge, because: firstly, active forms of interaction significantly increase the motivation of listeners; secondly, continuous stimulation of audience activity allows to increase the volume of geological data. Thus, interactivity is considered as an indicator of the didactic effectiveness of the computer training system and is allocated as a requirement for computer programs for teaching.

However, the choice of multimedia tools that are optimal for the effective formation of students' geological knowledge depends on their functional characteristics. In addition to efficiency, they have a number of other functions: they stimulate learning, encourage self-learning, enable distance learning (including management, direction, direction), allows the use of a large number of static materials, confirms the content with examples, demonstrates the dynamics of processes, creates conditions for the use of a full range of visual educational tools.

Based on didactic goals, we identified the following types of multimedia educational tools:

1) educational (the content is aimed at forming new geological knowledge of the students, may include answers about the information block, orienting device keys);

2) training (the device is aimed at unifying acquired geological knowledge and skills, it contains a system of tasks, questions and exercises of the first and second level of complexity);

3) education (a mandatory component is a system of questions, tasks and exercises aimed at developing students' thinking and creative abilities, which may include a block of additional geological information);

4) education (it includes the fourth component of geographical education - geological materials that implement emotional and value relations to the world, education of personal qualities necessary for a modern person);

5) supervisors (taking intermediate and final tests, unit of the system for recording test results (time of test tasks, number of correct answers, rating, rating));

6) combined (includes several or all of the above types).

Conclusion. Modern multimedia resources help make learning more visual and effective. Geography provides teaching with reliable information about the weather, atmosphere, current state of the lithosphere, economic parameters of countries and other factors important for the study of physical and economic geography. Also, it is considered very important in the effective acquisition of geological, geophysical, speleological and other references in geography classes.

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