

USE OF MODERN INFORMATION TECHNOLOGIES IN THE DEVELOPMENT OF STUDENT'S BIOLOGICAL COMPETENCIES BASED ON A SYNERGISTIC APPROACH

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ABSTRACT: This article, based on a synergetic approach to teaching biology, provides information about the role and significance of the use of information technologies that increase the educational and creative activity of students, increasing the efficiency of the educational process.

KEYWORDS: Synergetic approach, cooperative learning technology, work in small groups, virtual excursion, didactic games, educational technology, modular educational technology, biology course.

INTRODUCTION

The use of pedagogical and information technologies is defined as an important task in the normative documents adopted in order to increase the effectiveness of the teaching process organized in the continuous education system. In fact, in the era of globalization of information, increasing the effectiveness of teaching using pedagogical and information technologies in the educational process is considered an urgent problem. In order to use information technologies in the teaching of natural sciences, including biology, it is necessary to take into account the specific features of the content of biology education. Through the use of information technologies in teaching biology, it is possible to develop students' learning motives, organize differentiated education, control and evaluate students' acquired knowledge, and organize independent and creative research of students.

DISCUSSION AND RESULTS

Information technology is a person-oriented technology, which includes the intellectual and emotional-motivational development of students, the formation of knowledge and professional skills, ensuring the attitude towards the educational process as a value, increasing activity, forming self-awareness and independence. Currently, the following basic information technologies are widely used and studied in education:

Electronic means of education - the teaching process consists of the interaction of the pedagogue, the learner and the means of education. The possibilities of modern computer tools and information technologies allow teaching tools to be assigned part of the tasks of the teacher and the learner.

Electronic educational-methodological complexes are didactic, programmatic and technical interactive complex of teaching in the environment of modern information technologies and present educational materials on the basis of computer technologies, audio-video tools.

Educational and methodological materials in electronic form - electronic textbooks, textbooks, electronic study guides, electronic lecture materials, electronic libraries, audio-visual materials of suitable (GD, Flash, etc.) capacity, interactive training courses, laboratory tasks for computer computing experience, tests transfer systems.

An electronic textbook is a reading tool designed for the application of a computer technology-based learning method, independent education, educational materials for a specific subject, educational literature aimed at effective assimilation of scientific information, or computer technology-based teaching methods.

Electronic educational literature - educational resources that have the ability to collect, describe, update, store, present knowledge interactively and control information based on modern information technologies.

Multimedia is a technical or software complex consisting of a collection of sound, video and various animation effects designed for a computer. Sound, video, animations can be called "multimedia elements".

Multimedia technologies integrate many types of information. For example:

- a) scanned images;
- b) recorded sound, musical effects and music;
- d) videos with complex video effects
- e) various animations

In addition, in addition to multimedia tools, a projector and an interactive whiteboard can also be included. It is also worth noting that the knowledge gained through multimedia is stored in a person's memory for a long time and allows to use it in practice when necessary. In general, the following teaching effectiveness is achieved by using multimedia:

- . acquisition of knowledge is not forced, but the choice of the student is done with;
- . multimedia is accepted by the student with joy, and joy, in turn, changes his attitude to the academic subject in a positive direction;
- . the student has the opportunity to express himself in relation to others;
- . a new objective criterion appears for the student to evaluate his activity: the one who knows more and can use it successfully wins;
- . the opportunity to give free rein to one's fantasies arises, the feeling of fear, the feeling of laughing at others, the feeling of fear of getting a bad grade recedes;
- . a healthy environment of competition and competition is created in the team;
- . students strive to overcome existing difficulties independently;
- . the possibility of actual implementation of interdisciplinary connection arises.

Multimedia books are textbooks, software tools, consisting of text, audio, static-dynamic and video image information collected on one information carrier (for example, CD-ROM disk).

Flash is a creative tool of the Web designer, a program that can be used to create various presentations, small games, multimedia web pages, dynamic sites, and any other multimedia products. Products created using Flash are small in size, so it is very convenient to embed files made with it on web pages or send them over the Internet.

In Flash, mainly the following is prepared:

- Multiplication reel and cartoons;
- video clips;
- games;
- presentations.

The Microsoft Power Point program is created under the Windows shell, and this program is one of the most convenient software tools for working with presentations. All visual aids can be created through this program and in some places can also be used as a database. In some cases, it is possible to control and support these programs from multimedia devices and send them to display devices. Let's get acquainted with the main concepts that are new to work in the program. A presentation is a collection of slides and special effects stored in a single file as a screen display, handout, lecture outline, and outline.

A slide is a separate frame of a presentation that contains text, titles, graphics, and diagrams. Slides created with Power Point tools can be printed on a black-and-white printer, or 35-millimeter slides can be prepared on photo films using special options.

Hypermedia books are an advanced form of multimedia books, in which the user can refer to various additional resources in addition to the main text. In addition, students should acquire skills in the use of e-mail during the educational process. At the moment, the interest and attention to the use of innovative technologies, pedagogical and information technologies in the educational process is growing day by day. One of the main reasons for this is that in traditional education, students are taught only to acquire ready-made knowledge, while in non-traditional education, modern technologies allow them to search for the acquired knowledge by themselves, independently study and analyze it, even teaches them to make their own conclusions.

CONCLUSION

Therefore, the application of modern pedagogical, innovative and information technologies in the teaching of biological science based on a synergistic approach to the educational process will help students to work independently, think creatively, and increase educational efficiency.

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