

## INNOVATIVE TECHNOLOGIES ARE USED IN BIOLOGY LESSONS

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**Аннотация:** Современный этап развития общества ставит перед системой образования целый ряд принципиально новых проблем, обусловленных политическими, социально-экономическими, мировоззренческими и другими факторами, среди которых следует выделить необходимость повышения качества и доступности образования. Одним из эффективных путей решения этих проблем является информатизация образования. Совершенствование технических средств коммуникаций привело к значительному прогрессу в информационном обмене. Появление новых информационных технологий, связанных с развитием компьютерных средств и сетей телекоммуникаций, дало возможность создать качественно новую информационно-образовательную среду как основу для развития и совершенствования системы образования.

**Annotation:** the current stage of development of society poses a number of fundamentally new problems for education system, caused by political, socio-economic, ideological and other factors, among which the need to improve the quality and accessibility of education should be highlighted. One of the most effective ways to solve these problems is the informatization of education. The improvement of technical means of communication has led to significant progress in information exchange. The emergence of new information technologies associated with the development of computer facilities and telecommunication networks made it possible to create a qualitatively new information and educational environment as a basis for the development and improvement of the education system.

**Аннотация:** Жамиятнинг янги босқичда ривожланиши таълим системаси олдига янги муаммоларни кўйди: сиёсий социал-иқтисодий, дунёвий ўзгаришлар билан боғланган муаммоларни кўндаланг кўяди. Шулар асосида таълимнинг сифати ва таълимдан фойдаланиш имкониятига юқори даражада эътибор қаратиш ҳозирги даврнинг энг муҳим вазифаларидан биридир.

Бу муаммо ечимининг энг эффектив йўлларида бири - бу таълимни информатизация қилишдир. Техник воситаларнинг мукамаллашуви ва уларни таълимга тадбиқ этиш ахборот алмашишда сезиларли прогрессга олиб келади. Компьютер технологияси билан боғанган янги информацион

технологияларнинг пайдо бўлиши таълимда янги, сифатли инфор­мацион таълимий муҳит яратади.

**Ключевые слова:** инновационные технологии, технические средства, развития и совершенствования системы образования, развитие.

**Key words:** innovative technologies, technical means, development and improvement of the education system, development.

**Калит сўзлар:** innovatsion texnologiyalar, texnik vositalar, ta'lim tizimini rivojlantirish va takomillashtirish, rivojlantirish.

Interactive technologies will win more and more recognition and are used in teaching various training disciplines. Interactive interaction involves prompt feedback in real time between man and man or between man-machine systems (ICT). "Children's nature requires clarity" This requirement can easily be satisfied with informationcommunicable technologies. The lesson with the use of ICT is a qualitatively new type of lesson. Given the specifics of teaching the subject of biology, age and psychological features of students, there is a lot of clarity in the lesson. Typically, all tables and posters with an exemplary material to lessons were long and physically molar, so the presence of computer programs that can replace the whole cabinet of the tables, this is a very large help for the teacher in the preparation and conduct of modern interesting, non-standard lessons. Interactive technologies are gaining more and more recognition today and are used in teaching various academic disciplines. Interactive interaction involves real-time operational feedback between a person and a person or between human-machine systems (ICT). "Children's nature requires visibility" this requirement can be easily met by information and communication technologies. A lesson using ICT is a qualitatively new type of lesson. Taking into account the specifics of teaching the subject of biology, the age and psychological characteristics of students, there should be a lot of visualization in the lesson. As a rule, all tables and posters with illustrative material for lessons have long been physically and morally obsolete, so the availability of computer programs that can replace a whole cabinet of study tables is a great help for the teacher in preparing and conducting modern interesting, nonstandard lessons. The relevance of the application of information and communication technologies (ICT):

- a qualitatively new type of lesson (dynamics, information content);
- the speed of obtaining the necessary information;
- a wide range of visual aids;
- interest in the subject, qualitative testing of students' knowledge with the help of simulators;

-acceleration of the learning process due to closer interaction between the teacher and students, the desire of students to respond.

Innovation (Eng. Innovation - innovation) - the introduction of new forms, methods and skills in the field of training, education and science. In principle, any socioeconomic innovation, while it has not yet received mass, i.e. serial distribution can be considered innovations. The main goal of innovative educational technologies is to prepare a person for life in a constantly changing and developing society, to form his abilities for selfdevelopment. The essence of such training is the orientation of the educational process to the potential of a person and their implementation. Education should develop the mechanisms of innovative activity, find creative ways to solve vital problems, contribute to the transformation of creativity into the norm of a person's daily life, which is applicable in all areas of his activity. The purpose of innovation is a qualitative change in the student's personality in comparison with the traditional system. This becomes possible due to the introduction of qualitatively new didactic and educational programs into professional activities, involving the solution of pedagogical problems. The development of the ability to motivate actions, independently navigate in the information received, the formation of creative "unconventional" thinking, the development of children by maximizing their natural abilities, using the latest achievements of science and practice, are the main goals of innovation.

There are also technological microstructures: techniques, links, elements, etc. Lined up in a logical technological chain, they form an integral pedagogical technology (technological process). Technological scheme - a conditional image of the technology of the process, dividing it into separate functional elements and designating the logical connections between them. Technological map - a description of the process in the form of a step-by-step, step-by-step sequence of actions (often in graphic form) indicating the means used.

To implement the cognitive and creative activity of the student in the educational process, modern educational technologies are used, which make it possible to improve the quality of education, use study time more efficiently and reduce the share of reproductive activity of students by reducing the time allotted for homework. The main educational technologies that can be used as the basis for studying biology are:

1. The technology of problem-based learning is the creation of problem situations in educational activities and the organization of active independent activity of students to resolve them, as a result of which there is a creative mastery of knowledge, skills, abilities, and mental abilities develop.

2. Information and communication technologies are a change and unlimited enrichment of the content of education, the use of integrated courses, Internet access, interactive teaching methods, distance interaction.
3. The technology of multi-level education - gives the teacher the opportunity to help the weak, pay attention to the strong. With this technology, the desire of strong students to move faster and deeper in education is realized. Strong students are affirmed in their abilities, weak students get the opportunity to experience educational success and self-actualize within their capabilities, the level of learning motivation increases.
4. Technology of project teaching methods. Work according to this method makes it possible to develop the individual creative abilities of students, to approach professional and social self-determination more consciously.
5. The technology of research methods in teaching enables students to independently replenish their knowledge, delve deeply into the problem under study and suggest ways to solve it, which is important in the formation of a worldview. This is important for determining the individual development trajectory of each student.
6. Technology of using game methods in teaching. It can be role-playing, business and other types of educational games. This technology provides for the expansion of horizons, the development of cognitive activity, the formation of certain skills and abilities necessary in practical activities, the development of educational skills and abilities.
7. Health saving technologies. The use of these technologies makes it possible to distribute various types of tasks evenly during the lesson, to alternate mental activity with physical education minutes, to determine the time for the presentation of complex educational material, to allocate time for independent work, to apply TCO normatively, which gives positive results in learning.
8. Distance learning technology - is becoming more and more relevant in modern schools. This technology equalizes the chances of receiving a full-fledged education for children with poor health or those students who, for various reasons, cannot attend classes. Elements of this technology can also be used for remote communication between a teacher and students when doing homework (individual advisory remote method), when working on a project, as well as for full-fledged training in case of temporary disability of students.
9. The technology of modular education ensures the individualization of education: in terms of the content of training, in terms of the pace of assimilation, in terms of the level of independence, in terms of methods and methods of teaching, in terms of control and self-control.

Thus, to date, a large number of learning technologies have been developed, which encourages theoretical generalization, analysis and classification of these innovations, and the choice of optimal ones.

The task of the teacher is the personality-oriented development of students, their cognitive and general cultural skills, which ensures the formation of key competencies, among which the “ability to learn” is in the lead. According to teachers, the advantages of innovative technologies are as follows.

- enable students to acquire solid and conscious knowledge;
- develop independence in educational activities;
  - increase the time of speaking the educational material in the lesson;
- create a positive emotional mood, there is no fear of wrong answers, a sense of confidence prevails;
  - communicative culture is increasing;
  - increasing motivation for further education;
  - increases self-esteem of the student;
  - the psychological stress of the student and teacher is removed.

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