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Application of Modern Information Technologies in Teaching Mathematics in General Education Schools

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Abstract: This article is devoted to the topic of the use of modern information technologies in teaching mathematics in secondary schools. The article describes the use of new information and pedagogical technologies in education and their importance. It is scientifically and practically based that the use of new innovative methods in mathematics classes is an important factor in improving the quality and efficiency of classes.

Keywords: information technology, pedagogical technology, education, training, game technology, modeling, multimedia, modern lecture.

The use of new informational and pedagogical technologies in education requires a lot of training from teachers and students, and changes in the environment in the class and group of students. On the other hand, taking into account that the term technology has the meaning of a process that gives a guaranteed result, it is natural to ask how to make teaching a process that gives a guaranteed result. In pedagogical technology, the educational process is carried out on the basis of equal communication between the teacher and the student. During this dialogue, each of them performs certain types of activities.

The use of new innovative methods in mathematics classes is an important factor in improving the quality and efficiency of training. Various mathematical games have a wide motivational potential during training. A game plan is appropriate. Before starting the game, a theme is chosen and all the tools needed for this game are prepared. There will be 5 students in each group (there may be more or less). Group work relies on a clear division of tasks between students. The division of the class into groups is carried out according to desire or calculation.

A clear and concise explanation of the game activities of the students is provided. The teacher sets a time limit, taking into account the different speed of work of the groups. Students will be provided with necessary information package and information. In order for the students to start working in a group, it is checked that they have clearly understood their tasks. Students, if necessary, come to the groups in turn, note that they are working in the right direction and help them.

After the work in the groups, the captain gives an oral report on the results. The results of working in small groups are evaluated by the teacher. In this case, correct and accurate performance of activities, time consumption is a clear criterion.

For example, without changing the order of writing numbers 1, 2, 3,4,5,6,7,8,9, add and subtract all the three signs so that the result is 100. 123-45-67+89=100

Or how to write numbers from 1 to 10 using four 4's and math operations?

1 = (4:4) x (4:4) 2= (4:4)+(4:4) 3=(4+4+4):4

4=4 + (4-4) x 4 5= (4x4+4):4

On the basis of new information technologies, there are opportunities for distance learning, use of the Internet system, use of ICT, and the use of various innovative methods in the implementation of elementary school mathematics classes. In recent times, the use of traditional and developmental teaching methods is expanding with the distance teaching method.

Distance education is a type of education that allows you to use new information technology tools (telecommunication, e-mail, television and Internet education services) without coming to a higher educational institution. This form of education differs from existing educational tools. Creates an opportunity to study for those who cannot use it for certain reasons (visual and hearing impaired). Distance education allows the student not to be tied to a certain place. It provides educational tasks electronically or can use special computer and information technology tools and communicate with pedagogues at home, at work or in other geographical areas.

- This type of education is aimed at positively solving important tasks such as taking into account the student's individual psychological characteristics, work pace, interests, and his time budget. This increases the efficiency and quality of the educational process, making it more economical than traditional education. In distance education, lectures do not allow direct face-to-face communication with the pedagogue, as in traditional education. But it has several advantages:
- It is possible to record lecture materials completely on diskettes or disks;
- The possibilities of modern information technologies (hypertext, multimedia, creation of virtual models, etc.) make information lively, interesting, memorable;
- Acquaintance with educational material is not limited by time or distance and does not depend on them;

In distance education, the main form of work of a pedagogue is to give advice and help in independent learning of educational material. In this process, the teacher takes into account the student's intelligence, attention, imagination and interests. Communication with the student is carried out by phone or e-mail. The following requirements should be taken into account when organizing educational courses, regardless of the purpose and content:

The program should have opportunities unique to distance education, which are not available in traditional books, video and audio materials;

- ✓ Ensuring equal distribution and interdependence of educational material by chapters, sections;
- ✓ As much as possible, the software package should be adapted to the student's level of preparation (after checking knowledge with various tests and other methods);
- ✓ Separation of educational material into small, completed parts (modules);
- ✓ Effective use of means of activation proven in traditional pedagogy (game, creative environment, control, competition, including competition with the computer, good attitude, etc.);
- ✓ Convenient interface, protection against accidental "disappearance" of educational materials and tasks;

The Internet allows students to choose certain variable actions in searching, processing and presenting materials from the information space. This, in turn, creates an interactive interaction of information. Interactivity is the ability of the user to interact with the information carrier, to change the transmission speed of his choice. The students' ability to mediate, which shows their readiness to work with information on the Internet, can be explained by the following:

- Use of software, network information resources and computers;
- Use of search systems and directories;
- Finding the necessary information according to the purpose;

- Be able to explain information, justify and form alternative views, understand to whom the information is directed;
- Information storage and use in everyday life;
- Information processing and presentation;

If the student knows all of the above, he can easily work on the network. The prospects of students using the Internet for learning are very large, including;

1. The information obtained on the network should be integrated into the context of general education;
2. Creation of various sites for the exchange of information connecting parents and students;
3. Organization of distance learning. It can solve, complement, influence and partially replace educational tasks;
4. Creation of scientific projects, their inclusion in the network and use in various educational institutions.

The use of new information technologies in mathematics classes is one of the important factors that ensure positive results.

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