PSYCHOLOGICAL FOUNDATIONS OF APPLICATION OF MODERN INFORMATION TECHNOLOGIES IN THE EDUCATIONAL PROCESS

Zhakupova Galina Spataevna,
Senior Lecturer at the Department of Pedagogy,
Osh State University. Kyrgyzstan

Annotation

The state examines the pedagogical and psychological aspects of the use of modern information technologies in education, the basic concepts associated with the informatization of modern education, the role of computer technologies in the preparation of students.

Keywords: informatization of education; information technology; new information technologies; computer techologies

Introduction

In the educational process, along with the traditional methods of teaching subjects, new information technologies are increasingly used, which helps to change the way of presenting the material. The use of computer technologies in the process of teaching humanities increases the quality of learning information, makes their learning process more efficient and effective, and provides an increase in the motivation to acquire knowledge of a theoretical and practical nature. Many scientists are conducting research on the issue of introducing information technologies into the educational process.

Analysis of literature on the topic

Problems of pedagogical expediency of using computer technologies in the educational process were discussed by M.P. Lapchik, I.V. Maruseva, A.V. Mogileva, I.V. Robert and other scientists are studying.[1]
Twenty years ago, the Russian pedagogue B.G. Ananev said: "On the basis of combining technical and pedagogical sciences, engineering and pedagogical psychologies, a new, technique-based industrial pedagogy will be built... Pedagogical techniques and technologies will become a large center that integrates pedagogical and technical sciences."[2]
In studying the psychological and pedagogical aspects of the use of computer equipment and technologies in the educational process, B.F. Lomov, E.I. Mashbits, O.K. Tikhomirov, L.N. The researches of scientists like Babanin are of great importance. In these studies, computers are viewed as a powerful tool that increases the effectiveness of education and develops the human psyche. However, it is emphasized that computers can never replace the teacher. According to them, computers cannot fully automate the work of the teacher and the educational activities of students and pupils, especially of younger students.

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[1] Б. Г. Ананьев. Избранные труды по психологии. В двух томах. Том 1/
Издательство СПбГУ.- 2007. 412 с.
[2] Образцов П. И. Психолого-педагогические аспекты разработки и применения в вузе информационных технологий обучения / орл. Гос. Тех. Ун-т. Орел, 2000.

Research Methodology

Based on a large number of studies in the field of psychology, it has been proven that visual analyzers have a greater capacity to transmit information than auditory ones. In other words, the organs of vision can receive millions of bits of information, and the organs of hearing can receive tens of thousands of bits of information. Information received through the eyes becomes more understandable, and is stored in the memory for a long time. Effective and appropriate use of pedagogically convenient sound devices has been proven to increase the amount of information to be learned by up to 15%, and on the basis of visualization up to -25%. If audio and visual techniques are applied to the educational process together and in harmony, the information learned by students can be increased up to 65%.[3]

Discussion and Results

The highest effect of mastering can be achieved when using the visual aids explained by the teacher's words and presented to the students during the educational process. Here, the possibilities of computers as the main means of education pave the way for the fuller use of the possibilities of the organs of sight and hearing. This has a positive effect on perception and acceptance, which is the initial stage of knowledge acquisition. The signals received by the sensory organs are then logically processed and transferred to the sphere of abstract reasoning. As a result, sense organs are included in the process of thoughts and reasoning. As a result of this, the basis for the successful passage of understanding, which is the next stage of knowledge, appears.

The use of modern information technologies in the process of understanding helps in the formation and assimilation of concepts, the justification and proof of judgments, and the establishment of connections between cause and effect. According to psychologists and didactic scientists, the audiovisual capabilities of modern computers have a positive effect on the creation of sufficient conditions for the thinking process that is the basis of understanding: the logical end of the educational process is the great importance of remembering in memory. It helps to consolidate and systematize acquired knowledge while creating bright and colorful base signals.

The emotional effects that occur when using information technologies in the educational process allow students to focus on one place, that is, on the educational material that is planned to be studied, increase children's interests, and encourage learning. evokes positive emotions.

It is known that maintaining children's attention in the necessary direction during the entire educational process is considered one of the most urgent problems of pedagogy. In this place, K.D. Ushinsky said: "students' attention is a very important factor for the success and effectiveness of education and upbringing." [4]He showed the necessary means to focus children's attention on one place and to maintain it for a certain period of time:

- enhance impressions,
- attracting direct attention,
- making the classes interesting,

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[3] Образцов П. И. Психолого-педагогические аспекты разработки и применения в вузе информационных технологий обучения / орл. Гос. Тех. Ун-т. Орел, 2000.

[4] Собрание сочинений в 11-ти томах.Автор: Ушинский К.Д. https://vk.com/wall-56611080_181361

-measures against drifting of ideas.

Three of the four tools cited by K.D. Ushinsky are available in information technologies. They have a wide range of techniques and visualizations, which allow to enhance the impressions that can be obtained from the teaching materials presented. According to psychologists, the use of modern information technologies in training helps to strengthen children's involuntary attention. Frequent exchange of video information on the screen requires a lot of attention, because if the student unknowingly touches a key (including setting a different answer number during the tests), the pop-up menu of the software immediately appears. or an interactive dialog can cause a visible response reaction.

Research conducted in the field of psychology and pedagogy (G.G. Brusnitsina, N.YA. Vilenkin, L.A. Zhukova, G.M. Kodjaspirova, etc.). showed that the computer also causes the formation of children's creative thinking and develops the ability to understand, assimilate and interpret educational materials at a high level.

The fact that the computer has enough graphic capabilities to create images, shapes, pictures, schemes, diagrams and tables on the screen, to print them, to check the worker's skills, to model many surrounding phenomena and processes, to analyze their factors, to make predictions. [5]

The knowledge obtained in the form of visual and sound images ensures the transition to the next stage of knowledge, the making of concepts and theoretical conclusions. Logical visualization (written speech in the form of text displayed on the screen, classification schemes, schemes representing concepts and the relationship between them, circular schemes, classification trees) is also carried out with the help of object and illustrative display tools of information technologies. The importance of such visualization is to give visual appearance to concepts, ideas and logical elements. Information technology tools are able to express the text visuality in a dynamic form and in the mode of individual learning.

Conclusions and Offers

Thus, it can be concluded that appropriate and effective use of modern information technologies has a positive effect at the voluntary stage of the pedagogical process:

• providing educational information materials to students;

• at the stage of mastering educational materials through interactive (mutual) influence;

• at the stage of repetition and strengthening of the materials passed (formation and development of skills and qualifications);

• at the stage of intermediate and current control (determining the effectiveness of education):

• in the correction process and making corrections to the educational process, using its results to determine, classify and systematize doses of educational information, etc. in stages. [6]

It is worth noting that the use of computers and modern information technologies in the educational process can have a number of negative consequences. This situation is related to the fact that

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[5] Устатджалилова Х. А. Применение компьютерных средств обучения на уроках геометрии с целью развития геометрических умений и навыков учащихся //Вестник КРАУНЦ. Физико-математические науки. – 2013. – №. 2 (7. – С. 74-77.)
[6] Kh. A. Ustadjalilova, "Use of computer means of teaching the lessons of geometry with a view to the development of the geometric skills of students", Vestnik KRAUNC. Fiz.-Mat. Nauki, 2013, no. 2(7), 74–77

students, especially young children, stay in front of the screen for a long time. In order to prevent this, it is necessary to strictly follow the ergonometric norms of using computers in the educational process.

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