



## TECHNOLOGIES THAT INCREASE THE QUALITY OF EDUCATION IN THE STUDY AND ANALYSIS OF THE PEDAGOGICAL PROCESS

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**ABSTRACT:** - All historical-scientific, literary-artistic sources created in Central Asia from the 7th century to the beginning of the 20th century were written in Arabic script. The contribution of thinkers who lived and created in Central Asia to the development of science is still important today. For example, Abu Nasr Farabi also developed the following classification of educational tools. He divided them into practical and theoretical tools, approved the ideas of the practical direction of teaching and its connection with people's lives and daily activities. The scientist paid particular attention to experiential, inductive and deductive, practical means of teaching. All tools are combined based on the student's life experience and logical thinking. When developing the requirements for the organization of the educational process, giving priority to the didactic tool, what to pay attention to when explaining the material to the students, the most important things to be covered with evidence that gives reliable knowledge of science and does not doubt it, and studies on examples has provided valuable recommendations for readers. Farabi developed the principles of scientific, instructiveness, comprehensibility and consistency of teaching based on the science of mathematics. We should mention that the creation of the algebra tool by al-Khwarizmi is one of the examples of the unity of induction and deduction in mathematics. Because it would not be possible to create any kind of equations without induction. Also, the general solution rule of the given type of equations is a practical expression of the method of deduction of particular problems. Al-Khwarizmi's second work on mathematics - "Kitab al jam wa tafriq bi lis al-Hind" ("The Book of Addition and Subtraction on the Calculation of Indian Arithmetic") also plays an important role in the history of mathematics. The work described a tool for Indian decimal-position addition systems.

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The discovery of this decimal system was a real revolution in the number system. Numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are still called "Arabic numbers" in the world.

**KEYWORDS:** Technologies, Pedagogical Process, Education.

## INTRODUCTION

So, al-Khorazmi's works on algebra are very important in the history of mathematics, because algebra was raised to the level of an independent science for the first time by a scientist. Many Central Asian and Middle Eastern scientists widely used the mathematical tool based on Al-Khwarizmi in their scientific work. In particular, Iqbal-Bomat, who lived in the 12th century, and others can be mentioned. Mathematical tools created by al-Khorazmi were developed in their work, and new problem areas appeared on this basis. There are not a few works that came to the world due to the direct influence and creativity of Al-Khorazmiyyim. For example, the famous 13th-century scientist Leonardo of Pisa relied on al-Khwarazmi's proprietary tools when solving quadratic algebraic equations. Even world-famous mathematicians such as Fibonacci, Piccioli, Tartaglia, Cardano, Ferrari, Ibn Iraq, Abu Rayhan Beruni, Abul Wafa, Omar Khayyam and other scientists widely used al-Khwarizmi's works in their time.

Ibn Sina emphasized the need to follow the principle of regularity and unity. By making students' observations and experiences a regular and organic process, they develop the ability to make logical observations. Ibn Sina said that learning and physical exercises

should be combined with conversations and explanations, taking into account the age characteristics of children. Teaching in groups (in a class) is more effective than teaching individually, because in groups there is a spontaneous competition between students, says: "Teaching children in groups if it is organized, it will be very effective. Because in this process they learn from each other. Group teaching brings great benefits to society. Because in this, students make friends with each other, mutual respect appears between them, they argue with each other, discuss their rights and duties, and compete.

Beruni "knowing the structure of the world, the shapes of the sky and the earth through teaching and repetition is extremely useful for the science of astronomy. Therefore, in this way, the learner develops skills and learns the words used by the people of this art, and understands the meaning of these words. Later, when studying various reasons and proofs in the science of astronomy, if he comes across such words, he will easily understand them and will not get tired of mastering this or that thing." "Education should be consistent, instructive, purposeful and conducted in a certain system. Therefore, instruction makes education more comprehensible, more

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specific and more interesting, develops thinking," says Beruniy.

We divide the educational methods used by our lexicographers into the following groups: instructional experimental methods (Ibn Sina), question-and-answer methods of explaining knowledge (Abu Rayhan Beruni), skills and competence formation tools, knowledge testing tools (Farabi). and consists of others. The goal of all these scientists was to increase the level of knowledge and logical thinking of students. In education, students should use a wider range of methods based on their own experience. A. Avloni believes that it is learned in the process of education and allows to distinguish good from bad, good from evil, permissible from illegal. He develops the problem of unity of upbringing and education.

H.H. Niyazi conducted theoretical research and developed a sound literacy teaching tool. The main idea in his research was a comprehensive approach to teaching and upbringing, the implementation of the intellectual, moral and aesthetic education of young people in an interconnected manner. It is known from the titles of the works and pedagogical opinions of these scientists that these authors considered didactics as an art of teaching, a unique practical skill.

When using tools, technologies, and methods, it is important for the teacher to choose according to the topic being taught and the problem to be solved. If he uses the same tool to explain a new topic, another tool is used to reinforce the previous topic, and another tool is used to explain the homework.

It is very important to use effective and convenient tools at different stages of the lesson. The teacher starts asking questions in the first 4-5 minutes of the lesson, and after determining how many students have not mastered the previous lesson enough, he focuses the class's attention on strengthening this topic during the lesson and in subsequent lessons. First, he asks students who have mastered the topic well. As a result, students who have not mastered it well will understand the lesson by listening to it. Through this method, it helps to find out the shortcomings of students in lessons and solve this problem. That is the effectiveness and usefulness of this method. Every teacher has many tools and methods in teaching, and the main purpose of using them is to increase the educational work of students. Using this tool and method increases students' listening and movement and makes the learning process easier. Reading, learning is a process that requires attention, attention and patience, and it should have a strong memory and a strong will. One of the main tasks of the teacher is to increase the above qualities in students using effective tools. Today's education should not only use the acquired knowledge, but also introduce the problems that need to be solved, and teach how to solve them. The first signs of active methods of education appeared in the XVII-XVIII centuries. F. Rable, M. Manten, F. Bacon recommended to acquire knowledge independently through practical experience and discussion, rather than based on ready-made information.

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Later, educational tools were developed by Ya.A. Komensky, I.G. Pestalosi, F.A. Disterverg, Dj. Dewey, K.D. Ushinsky. They are advanced in didactics, that is, they have scientifically based the idea of independent assimilation of knowledge.

Pedagogical technologies have become the main concept in our consumption today. The concept of pedagogical technology appeared in the 20th century and was used in the 1940-1950s as "Educational technology", meaning the use of audio-visual equipment in the educational process.

The term was first used in the USA. Later, the term "programmed education" was widely used instead of "educational technology". Then pedagogical technology began to express the educational process aimed at a specific goal and planned education. In the 80s of the last century, pedagogical technology began to be used synonymously with computer and information technologies. "Pedagogical technology is one of the issues that attracted the attention of pedagogic scientists and teachers in the following decades. The fact that this topic is intensively studied in scientific works, reports, and special periodical publications, and that it is the cause of debates, also testifies to the importance of its place in education. Analysis based on the requirements of the laws and regulatory documents of the Republic of Uzbekistan, as a result, efforts to create an empirical basis of a number of conceptual technologies, as well as to transfer it to the scope of scientific knowledge, are being actively continued. First of all, the question arises as to why the interest

in pedagogical technology has increased so much today. It can be said that, in developing countries, pedagogical technology has been considered as the main task of policy in the field of education. This approach was approved by UNESCO, and in 1972 the International Commission on Educational Development was established.

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