

# THE LEVEL OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN GENERAL SECONDARY SCHOOLS

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**Abstract.** *The article describes the use of information and communication technologies in secondary schools in Uzbekistan. The level of information and communication technologies in secondary schools of Bukhara region is also covered. The problems of non-use of information and communication technologies in teaching and measures to overcome them were discussed. The training provided suggestions and feedback on the benefits of information and communication technologies.*

**Keywords:** *Information and communication technologies, pedagogical software, education, software, educational process, general secondary school.*

**Introduction** Life today is unimaginable without information technology. Information technology has entered our lives so quickly that we do not yet fully understand whether it is useful for us or not. If we look at it only in the field of education, we can not better understand the organization of lessons in the education system without the use of computers, mobile phones, the Internet, the culture of their use in the classroom, the benefits and negative consequences for us.

In today's environment, which is enriched with teaching aids, most teachers talk a lot about the lack of interest in learning, the reluctance of students to study independently, and the solution to this problem.

I think one of the main reasons why students are not interested in reading is that the lessons are the same, that is, they are traditional. Nowadays, teachers focus mainly on passing the curriculum, and the student's mastery rate is secondary.

It should be noted that in this age of information technology, where all the opportunities and conveniences are created in society, it is necessary to focus on the knowledge of the student, not on the lessons.

The role of information and communication technologies (ICT) in improving the quality of education, information retrieval, collection, collection, storage, processing, reproduction and dissemination is invaluable.

Let's look at the work being done on the introduction of ICT in education:

- In 1962, Academician AI Berg was one of the first to work on the organization of programmed education with the help of technical means and teaching machines. Earlier this year, at the first All-Union Conference on the problems of programmed education, Academician VM Glushkov raised the issue of developing computer methods and tools for automating education.

- In 1985, the former Soviet government issued a decree on the computerization of secondary and higher education in order to improve the education system and provide ICT.

- In 1994, the Cabinet of Ministers of the Republic of Uzbekistan developed a concept of informatization with a special focus on education.

- In his speech at the 5th session of the Oliy Majlis in 2001, the first President of the Republic IA Karimov put forward the idea of the rapid introduction of information technology and computers in society, people's lifestyles, schools and universities.

- "On measures to organize the development of the program of the Cabinet of Ministers of the Republic of Uzbekistan dated May 23, 2001 No. 230" Development of computer and information technologies in 2001-2005 ", as well as" Internet access to international information systems " gi Decisions were made.

- Decree of the President of the Republic of Uzbekistan "On further development of computerization and introduction of information and communication technologies" of May 30, 2002 and the Cabinet of Ministers of June 6, 2002 "On the program of computerization and development of information and communication technologies for 2002-2010" The decision was announced.

- On March 2, 2020, the Decree of the President of the Republic of Uzbekistan Sh. Mirziyoyev "On the State Program for the Year of Science, Enlightenment and Digital Economy" was signed. It also states that "from September 1, 2020, information systems (electronic textbooks and diaries) will be introduced as an experiment in e-learning in schools with the abolition of paper documents" will also help to implement ICT in education.

Unfortunately, despite the fact that half a century has passed since the beginning of the provision of education with technical means, the level of ICT provision in general secondary schools in the country is still very low.

In order to determine the level of ICT availability in general secondary schools, I conducted research in some schools in different parts of Bukhara region, where I live. These figures are shown in the table below.

Level of ICT provision in general secondary schools:

Table 1.

A tr	B School	C Nu m be r of cla sse s	D Numb er of stud ent s	E Number of teacher s	F/G H		I Teacher own computer	J/K/L Numbe r of TV / Video projecto r / Electron ic board	M Printe r / Scanne r	N O Level of availability		P Availab ility level
					comput er room / number	Noteb ook netboo k				In the Class section	In the Students section	
1	Bukhara city 12- school	40	1341	84	1 / 15	6	12	3 / 3 / -	2 / -	18 %	1,5 %	21 %
2	Vobkent district 5- school	40	1157	100	1 / 20	2	55	1 / 2 / 1	1 / -	13 %	1,9 %	57 %
3	G'ijduv on district 17- school	39	1214	89	1 / 15	12	30	15 / 3 / -	2 / -	49 %	2,2 %	47 %
4	Shofirko n district 6- school	26	776	77	2 / 24	7	32	3 / 4 / -	5 / 1	35 %	4 %	50 %
5	Jondor district 49-	19	663	44	1 / 15	3	30	3 / 3 / 1	1 / 1	42 %	2,7 %	75 %

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6	Qorovul -bozor district 7- school	21	561	53	1 / 20	3	28	6 / 3 / 1	2 / 1	52 %	4 %	58 %
	Average :									34 %	2,7 %	51 %

A computer (F, H) and a video projector (K), a television (J), a whiteboard (L) or a computer for all students to provide students with a minimum amount of ICT in the classroom (N). tool (G).

I calculated the use of ICT in the classroom by the following formula:

$$N = Q / C * 100\%$$

Here:

Q - is the sum of the number of classes provided by J, K, L, F ( $Q = J + K + L + F$ );

C - class number;

F - number of computer rooms;

H - is the number of computers other than the computer room;

J - number of TVs;

K - number of video projectors;

L - number of electronic boards;

N - is the level of security (by class).

A computer (G), laptop (H), tablet, or subject-appropriate ICT device is required to ensure that education is provided with a minimum amount of ICT.

I calculated the provision of ICT in the student body by the following formula:

$$O = (G + H) / D * 100\%$$

D - number of students;

G - is the number of computers in the computer room;

H - is the number of computers other than the computer room;

O - is the level of security (in terms of students).

The school should have a computer, laptop (H), or the teacher's own personal computer for teachers to use so that students have minimal access to ICT in teaching and preparation.

I calculated the availability of ICT tools among teachers using the following formula:

$$P = (I + H) / E * 100\%$$

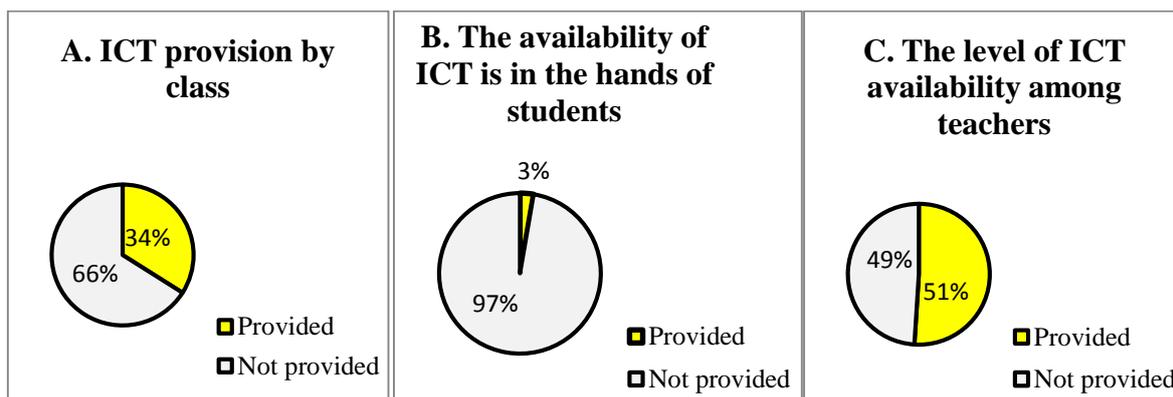
E - number of teachers;

H - is the number of computers other than the computer room;

I - teachers' personal computers;

P - level of availability (in terms of teachers);

The results of my observations show the level of ICT provision in schools in the following diagram:



Analyzing these indicators:

A. Only one-third of all secondary school classes are equipped with ICT. The rest are still taught in the old-fashioned way.

B. Only 3% of all high school students have access to ICT.

C. Only half of all secondary school teachers have an ICT tool.

From these figures, the situation in general secondary schools in the region is not satisfactory. It is especially unfortunate that students are provided with ICT tools. However, the role of students in education needs to be strengthened, and the provision of ICT to students needs to be established.

Let us now consider our observations on the example of a separate district.

Level of ICT provision of secondary schools of Shafirkan district of Bukhara region:

Table 2.

A	B	C	D	E	F/G	H	I	J/K/L	M	N	O	P
tr	School	Number of classes	Number of students	Number of teachers	Number of computers		Teacher own computer	Number of TV / Video projector / Electronic board	Printer / Scanner	Level of availability		Availability level
					computer room / number	Notebook / netbook				In the Class section	In the Students section	In the Teachers section
	<b>Total: 56 ta</b>	1102	28754	3001	67 / 912	220	616	10 / 123 / 22	137 / 18	20 %	3,9 %	28 %

Level of ICT facilities in selected general secondary schools:

Level of security		Availability level
In the class section	In the Students section	In the Teachers section
34 %	2,7 %	51 %

Level of ICT provision in all general secondary schools in one district:

Level of security		Availability level
In the class section	In the Students section	In the Teachers section
20 %	3,9 %	28 %

From these observations, the level of ICT provision in general secondary schools is not uniform.

One of the reasons for such shortcomings is the distribution of equipment.

The sad thing is that there is a decision, a plan, money, equipment, but not all of it is for education.

Over the years, as a result of these efforts, the share of ICT in education has increased. However, there is a problem with different brands of hardware available locally. Because not all ICT devices of different brands work in the same way. Not all computers can support the current software and software products, video projectors are not suitable for all computers, and the Internet and wifi cannot be transmitted in the same way. Not all devices, such as phones and tablets, can be used in education. Not to mention their level of fitness. Such problems affect the effective organization of education.

The variety and obsolescence of electronic devices such as televisions, radios, (audio-video) tape recorders, and calculators allocated for education, unfortunately, are still on the balance of educational institutions.

The effectiveness of education cannot be determined by the provision of ICT equipment alone. Because they need appropriate pedagogical software.

Even in schools equipped with teaching aids, they are mostly used as teaching aids or demonstrations. However, they can be used properly in the educational process to move to a new stage in the development of education.

In this period of transition of all segments of society to the digital economy, it is necessary to review the content of teaching and learning without delay, to develop new methods, to update and improve ICT educational and software products. To do this, we need a clear plan, great mobilization and funding.

You can say, of course, that this is already happening, that in the classroom - pedagogical software for the subject has been developed for the teaching of a number of subjects, such as mathematics, computer science, physics, chemistry, biology, foreign languages, which are used in education. However, most of our teachers face a number of challenges in the use and application of ICT in the classroom. This is due to the lack of ICT tools in the teaching and learning of subjects, the availability of different types, and the lack or imperfection of methodological tools for their use in the classroom. At the same time, the method of organizing lessons using ICT tools, pedagogical and psychological theory is not perfectly developed. There are no textbooks or manuals for students.

The effectiveness of existing pedagogical software tools is also low. Most of the demonstrations are in the form of test results, with little to no analysis, creative research, or research.

In recent years, a number of measures have been taken to use ICT in education. In particular, curricula that describe the learning process in many subjects, programs that demonstrate processes that are difficult to imagine, programs that control students' knowledge in several ways, and programs that perform certain tasks have been created and are being used. However, shallow pedagogical software products are being developed to bring ICT into the educational process faster. They only depict the content of the textbook in screen shots.

In most cases, the information in the book is limited to a television, computer, or video projector. Because you have to go through the material in the textbook. In such programs, the task condition is displayed on the screen. The student completes the task in a notebook and enters or marks the result in the program. The program checks the answers to see if they are correct or incorrect. Of course, it is good to quickly determine what the result is, whether the answers are correct or incorrect. But the student's work is increasing. It is necessary to create software that allows students to complete the task directly in the program, rather than in a notebook, and to develop software products that allow each student to enter their own answers.

It is important to keep in mind that a cheap, easy-to-use book, notebook, or exercise kit is always being replaced by an expensive one, as well as a computer or similar device that is inconvenient to use for this purpose.

From our experience, it is clear that the initial curricula were mainly based on the transfer of textbooks to computer screens, and their effectiveness in the educational process did not meet the requirements.

In fact, typical automated training programs can be described as follows:

- a) the student is initially given a specific learning material;
- b) control assignments are given to determine the assimilation of the material;
- c) the program checks the student's answers and directs the result to the next section of the study material or re-reading, depending on whether the result is correct or incorrect;
- d) records the results on a special counter.

The teacher analyzes the results and determines the direction of work with the student.

Unfortunately, even the teacher training and retraining institutes in the provinces responsible for this work do not have the pedagogical software. Despite so many years of experience, they have not developed a plan for the introduction of ICT in education, nor have they received pedagogical software to use it anywhere, and have not been diligent about the task of delivering it to schools. In some ways, the pedagogical software that reaches the school is sponsored by an organization or individual for the benefit of others. Not to mention the expertise of such pedagogical software.

At present, all schools in the country are provided with ICT, albeit to a lesser extent. However, most of these tools are used as objects of study in computer science, for the preparation of documents for schools and teachers, or for the decoration of the classroom. In fact, it should improve the quality of education.

Without increasing the number of types of ICT tools, it is necessary to develop their number and types of specific subjects that will serve for education. Only then will he be able to serve in his own way.

Therefore, taking into account the problems, the rapid introduction of ICT in education, informatization of the educational process should be considered as a key issue.

So, "What is an ICT tool? What ICT tools should be used in education? What is the purpose of using ICT in education?" - Let's take a closer look at such queries.

Information technology is a set of methods and tools for collecting, collecting, storing, processing, and disseminating information.

Information and communication technologies in education are a set of electronic devices, computers and software developed for education that can be used in the educational process.

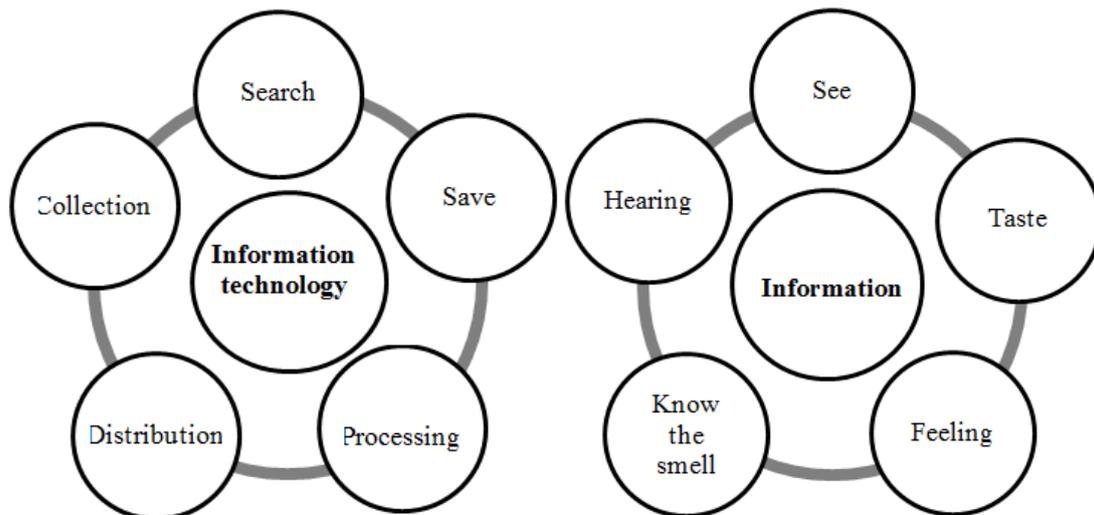
Special information technologies in education are electronic devices, computers and specially designed software that can be used only in the educational process.

Educational software is software designed specifically to accomplish educational goals.

Depending on the function of the software used in education, it can be described as follows:

- Automatic learning systems based on electronic intellectual textbooks that provide interactivity, multimedia, large volume and hypertext of educational materials;
- science-oriented environments;
- Internet services for distance learning;
- classroom management software;
- reference programs;
- laboratory classes;
- training programs;
- educational games and environments, etc.

An automated learning system is designed for independent learning of a course or part of a course



It all works on information.

Information is a collection of information received by all senses.

Data collecting (input) tools:

Microphone, camera, camera, camcorder, scanner,...

Data storage media:

Cassette, CD, flash memory, books, newspapers and magazines,...

Means of dissemination (transmission) of information:

TV, radio, telephone, tape recorder, monitor, video projector, speaker, printer, internet,...

Data processing tools (calculator, converter,...): Calculator, whiteboard, computer and software products...

The purpose of using these ICT tools in education is to create new types of learning activities that are typical of the modern information environment.

The introduction of ICT in the educational process allows:

- Increases students' interest in learning science;
- Forms the need for students to know the subject;
- activation of students' cognitive activity;
- Increases the level of individuality of students;
- develops creative abilities of students;
- Teaches students to use ICT tools;
- Provides self-monitoring of students;
- optimizes the process of student assessment;
- expands the imagination of students;
- ensures the freedom of students;
- Introduces students to modern methods of using ICT in education;
- saves time of teachers and students;
- Increases the ability to teach students with disabilities;
- forms the student-teacher relationship;
- provides individual communication between teacher and student;
- facilitates teacher-student and student interaction;
- helps the teacher to manage a large number of students;
- Increases the teacher's interest in teaching;
- ensures the diversity of the content of educational materials;
- Improves reading and learning;
- helps to determine the level of knowledge of students;
- strengthens demonstration in education;

- expands the range of teaching materials used in education;
- helps to combine theory with practice in education;
- provides distance learning;
- provides reality in education, etc....

ICT tools can be used at all levels, depending on the type and type of lesson, depending on the content of the topic.

An ICT tool can be used by a teacher or a student, depending on the level of availability and the process of use.

Conclusion.

This article considers the level of provision of general secondary schools with information and communication technology tools as a problem, analyzes the work being done in this area and their practical situation. The following conclusions can be drawn from the analysis:

- Provision of education with ICT should have a strong material base for its application in the educational process, the promotion of the idea of informatization;
- Overcoming the problem of providing secondary schools with ICT and improving the provision of ICT, which is important for the educational process;
- Teaching general secondary school students in accordance with modern requirements, development and implementation of new pedagogical software tools;
- Development of scientific and methodological methods for the introduction and use of ICT in the educational process.

It is necessary to use these ICT tools and methods, to train and retrain teachers in their implementation.

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