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# Integration of information technologies in the educational process of general and special schools

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# INTEGRATION OF INFORMATION TECHNOLOGIES IN THE EDUCATIONAL PROCESS OF GENERAL AND SPECIAL SCHOOLS

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**Abstract.** This article highlights the features of information integration of information technologies in the educational process of education and special schools based on scientific approaches. It should be noted that at present, special correctional schools are beginning to actively use the computer in the study of individual subjects. The main directions of development and use of information technologies in special education are defined, and the requirements for software products that can be used in working with children with disabilities are highlighted: help in establishing full contact with the child and creating internal motivation for the cognitive process; the possibility of supporting the obtained experimental data with statistical processing;

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## INTRODUCTION.

Despite the importance of information technologies for the development of personal qualities of students, their implementation should be implemented not so much in an extensive way, leading to an increase in both the training load of students and teachers, and the overall cost of education, but by bringing the structure of education in line with modern goals.

The world around us is changing so fast that the curriculum often does not keep up with these changes, and then the traditional structure of teaching academic

subjects can no longer meet the goals of education. Even conscientious training provides not genuine knowledge that allows you to navigate independently in a particular subject area in the future, but memorization skills. Such skills themselves are very important and useful — as a Foundation for those aspects of future professional activity that are characterized by well-established traditional approaches, regulated by certain rules, but now such education has ceased to be effective.

**THE MAIN PART.**

The use of information technologies ensures the intensification and updating of the educational process based on the solution of the following main tasks:

identification and use of incentives to activate cognitive activity through the use of various information technologies, selected depending on the type of personality of the student;

deepening of subject connections in solving problems from various subject areas through the use of modern information processing tools such as computer modeling, local and network database technologies and knowledge;

active participation of the student in the design and further updating of his educational trajectory, which provides a person-oriented approach to the organization of the learning process.

Effective use of IT in the educational process is possible only if the relevant technologies are not a superstructure to the existing system of education, but are reasonably and harmoniously integrated into this process, providing new opportunities for both teachers and students. On the other hand, we can and should talk about integrating the existing educational, scientific, and administrative structures of the existing educational system into the external information environment that is formed and developed on the basis of modern technologies. Thus, it would be wrong to see only one direction in the process of Informatization of education: the possibilities of information and communication technologies enrich pedagogical technologies, contribute to the scientific and methodological activities of teachers, improve and facilitate the solution of management problems.

And the experience, knowledge, and traditions accumulated in the education system add to the content, General cultural component of the information space-from the local network of an individual educational institution to the global Internet, allowing us to talk about the formation of `global intelligence".

Ideally, it is necessary to carry out and ensure in all structures of the educational system (educational, scientific, administrative) the process of system integration of information technologies, including simultaneously:

adaptation of the structures themselves and existing educational technologies to the capabilities of the implemented ITO;

adaptation of ITO to the requirements of these structures;

creating mutually compatible new structures and their corresponding

It is impossible to offer a General solution to such a complex problem that is suitable for all occasions. In a certain sense, this integration is carried out in the process of gradual development and implementation of an electronic computer course in the educational process-if the teacher takes a direct part in its creation. However, in practice, teachers often have to implement in the educational process not only and not so much their own developments, but ready-made electronic textbooks, training or modeling programs, etc.

One of the founders of computerization of special education formulated the principles of using a computer in special education:

the computer in special education is not a subject of study, it serves as a qualitatively new means of obtaining information;

at correctional classes, the triple interaction "student-teacher-computer" should be implemented»;

special computer programs should be developed for children with developmental problems.

It should be noted that at present, special correctional schools are beginning to actively use the computer in the study of individual subjects.

The main directions of development and use of information technologies in special education are defined, and the requirements for software products that can

be used in working with children with disabilities are highlighted:

help in establishing full contact with the child and creating internal motivation for the cognitive process;

the possibility of supporting the obtained experimental data with statistical processing;

availability of an extensive indicative stage;

ability to adjust the speed;

constant current control of mastering the material;

possibility of presenting a large number of exercise options.

The use of IT allows the teacher to attract new and improve traditional assessment methods, and guarantees high-quality implementation of the assessment procedure.

Speaking about the effectiveness of information technologies for organizing the assessment procedure based on pedagogical tests in certain subjects, or subject tests, we are talking about using questions with a set of possible single answer options-tests of the MCQ type (Multi Choice Question, i.e. a multiple choice question). However, you may need to use other survey options, for example, the need to allow multiple responses, enter text, numbers in a fixed or free format, when the entered response is compared with the standard by so-called keywords.

Automated tests such as MCQ are a fairly effective method of mass verification of the level of actual knowledge in a relatively short time.

A new step in this direction was CAT (computer adaptive test).

This is a test that includes adaptability to the capabilities of the examinee. The principle of testing using CAT is as follows: when performing the same adaptive test, examinees with high and low levels of training will receive completely different sets of questions: the first will be offered difficult questions, and the second — easy ones. If in the end the shares of correct answers for both even match, then the first one will score more points, since he answered more complex questions.

When passing an adaptive test, it is possible that by the time the test is

completed, a less prepared person can answer the same number of questions as a more prepared person. A comparison of questions that have the correct answers will show that a more prepared person answered correctly and more complex questions. Therefore, it will get higher scores. The number of points scored is not based on the number of correct answers, but depends on the level of difficulty of the questions that are answered correctly.

For an objective assessment of the achieved quality of training, including when working with training programs, criterion-oriented tests are of particular interest.

The teacher can get an answer to the question of what elements of the content of the discipline are learned by a particular subject, in fact, only in the form of a probabilistic assessment. When preparing such tests, a General set of tasks is built on the basis of the content of the discipline, i.e. a homogeneous set of tasks for measuring the quality of knowledge, skills and abilities obtained. Then the subject is offered a test — a sample of tasks from this set. Finally, based on the answers, a probabilistic conclusion is made about the knowledge of the discipline given to the test subjects. Such tests are originally called Domain-Referenced Tests, which literally means content-oriented tests. It is clear that the reliability of the results requires a thorough definition of the content of the discipline being studied and a large number of tasks.

It is necessary to observe: a) the completeness of the display material of an educational program in the selection of the content; b) the correct proportions of individual sections and topics of the subject (content lines); C) the completeness of requirements of state educational standards; g) compliance of the contents of the job knowledge, skills and experience, scheduled to check in the specifications of test materials; d) the importance of the content of each assignment for verification purposes.

In addition to evaluating training, it is very important for a teacher to have a clear idea of the individual characteristics of students, the formation and development of their personal qualities: General and special abilities, learning

ability, intelligence, creativity, memory, reaction speed, sociability, etc. Only such a comprehensive study can provide a complete picture of the educational process and its results. We are talking about psychological diagnostics, which can also be performed using automated testing. Of course, we are not talking about the teacher replacing the psychologist, but every teacher should be aware of the possibilities, advantages and disadvantages of automated psychodiagnostics.

The use of information and communication technologies has in one way or another affected all stages of psychodiagnostic testing: the creation of tests has been simplified through the use of special design systems, group testing has been facilitated, and the efficiency of primary processing and interpretation of results has dramatically increased.

It is very important that thanks to the capabilities of information technologies, it is possible to combine diagnostics of development and training, and take into account the personal characteristics of the subjects when conducting automated subject testing.

Without an adequate assessment of the quality of training and development of students, it is difficult to talk about a balanced training course. The use of various information technologies expands the assessment opportunities and creates conditions for organizing prompt feedback during the learning process. However, considering the use of IT as part of the overall strategy, you can not limit their place only to conducting automated testing.

The current state of society is characterized by the intensive penetration of computer technology into all spheres of human activity. Social, psychological, General cultural, and professional prerequisites for Informatization of the entire society are laid in the field of education. The school aims to equip students with the knowledge, skills and abilities necessary for full inclusion in life in modern society.

The computer is not just an accelerator of information transfer in the educational process, but opens up fundamentally new opportunities in the field of education, in the student's educational activities. This can be implemented if

students develop computer literacy in a timely manner.

It should be noted that at present, special correctional schools are beginning to actively use the computer in the study of individual subjects.

However, in our opinion, this is not enough for a special school. It is necessary, as well as in General education schools, to develop a direction in which the object of study is computer science itself. One of the main provisions of defectology is the statement about the generality of the laws of development of normal children and children with developmental problems. In this regard, the importance of computer literacy for the latter is no less important than for normally developing students. Drawing a parallel with ordinary literacy, computer literacy refers to the ability to count, read, write, draw, and search for information using a computer. In addition, the formation of elements of computer literacy involves the development of students ' basic algorithmic thinking. In pedagogical terms, for the learning process, the ability to think algorithmically means the ability to present a complex action in the form of an organized sequence of simple actions. In our opinion, the work on the formation of algorithmic thinking and the corresponding fundamental knowledge, skills and abilities in a special school should be carried out more actively.

Under this condition, algorithmic thinking can seamlessly log in to the system of knowledge, abilities and skills of students and improve the efficiency of independent work, gives new opportunities for creativity, discovery and consolidation of different professional skills, so as to give them certain abilities and skills in independent constant replenishment of their knowledge, that is, create conditions for the correction and development of personality of students and will implement a fundamentally new forms and methods of training, improve the process of teaching other school subjects. Ultimately, this work will lead to the development of children, and will help to activate the process of learning educational programs.

Thus, the inclusion of computer literacy elements in the field of special education will lead to the optimization and intensification of the educational

process. This, in the end, will ensure a more successful acquisition of students ' complete understanding of the world around them and their inclusion in independent life in society.

So, working with children in computer classes should be carried out by speech pathologists, not programmers. The priority of defectological competence in comparison with the competence of the programmer is dictated by the chosen approach, in which the logic of learning in a computer class is determined by the logic of the child's development, and not by the logic of computer technology.

A teacher who conducts correctional work in a computer classroom must have qualified user skills in working with a computer and professional education in the field of correctional pedagogy.

Priority belongs to professional competence in the field of correctional pedagogy.

- to identify the difficulties in its formation and build up substantiated hypotheses about their possible causes;

-from this point of view, analyze and select computer programs for work, determine their place, role, ways to include them in the educational process, and have a clear idea of the possible corrective effect.

A special school needs a specialist who provides technical support for working in a computer class, with the status of an assistant.

**CONCLUSION.**

It is necessary to think and organize the process of interaction between the teacher and the technician to balance their competencies, while maintaining the priority of the teacher in setting lesson objectives, selection of computer programs, determine the methods of conducting lessons and evaluation for the student. At the same time, it is the technical specialist who is able to determine the technical difficulties that the teacher experiences when conducting a lesson in a computer class, and be able to eliminate them either by adjusting the equipment, or by additional training of the teacher in managing the computer and the program.

The use of computers as a means of teaching within the school involves a gradual, step-by-step mastery of computer technology by the entire teaching staff.

It is obvious that in the very near future, the ability of a speech pathologist to use a computer in the educational process will become an obligatory element of professional competence.

Computer-based learning and correction technologies can be used in various content areas (in various lessons and individual classes) at all stages of school education of a child with developmental disabilities.

The condition for effective use of computer technologies is the special training of teachers and the availability of specialized computer programs for solving educational and correctional tasks in various content areas of education.

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