

# The Role Of New Information Technology Tools In Education

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## Summary

The article discusses information technology and communication technologies in higher education, which traditionally boil down to two main areas. The first is to use the capabilities of these technologies to increase the accessibility of education, which is carried out by including in the education system those persons for whom another method may not be available at all. It is pointed out that distance learning meets many objections. Her opponents rightly point out that future students are deprived of everything that is required to receive a truly high-quality education: work in laboratories, access to scientific libraries, communication with teachers and other students at seminars and in an informal setting.

### Key words:

*Innovative teaching, Higher education, Teaching technology, Information Technology.*

## 1. Introduction

The modern period of the development of society is characterized by a strong influence of computer technologies on it, which penetrate into all spheres of human activity, ensure the spread of information flows in society, forming a global information space. An integral and important part of these processes is the computerization of education. Currently, a new education system is being formed, focused on entering the world information and educational space. This process is accompanied by significant changes in the pedagogical theory and practice of the educational process associated with making adjustments to the content of teaching technologies, which should be adequate to modern technical capabilities, and contribute to the harmonious entry of the child into the information society. Computer technologies are designed to become not an additional "makeweight" in teaching, but an integral part

of the integral educational process, which significantly increases its effectiveness.

Over the past 5 years, the number of people who can use a computer has increased by about 10 times. As noted by most researchers, these trends will accelerate regardless of school education. However, as revealed in many studies, children are familiar mainly with game computer programs, use computer technology for entertainment. At the same time, cognitive, in particular educational, motives for working with a computer are in approximately twentieth place. Thus, the computer is not used enough to solve cognitive and educational tasks.

The end of the 20th century was marked by the intensive development and implementation of informatics in all spheres of society. This manifested itself in the intensive improvement of computer technology and communication technology, in the emergence of new and further development of existing information technologies, as well as in the implementation of applied information systems. Advances in computer science have taken their rightful place in organizational management, in industry, in scientific research and in computer-aided design. Informatization has also covered the social sphere: education, science, culture, health care. Internet, a significant number of users work using cellular and other networks. All this confirms that the process of informatization is intensifying, the stage of uncontrolled informatization is coming to an end. The controllable component, which was implemented mainly in education, in industry and in administrative management, turned out to be clearly insufficient due to small financial resources, but in general, the modern level of informatization allows us to state that the beginning of the next century will become the transition point from the age of energy to the age of informatics. as predicted by Norbert Wiener. The use of fiber-optic lines and cable television networks allows, on the same basis, to ensure the transmission of speech, video

signal, data, service information and thereby ensure the entry of each user into both the and the world information space. work of students on the home computer. appointment. The huge amount of memory of the information carrier allows the implementation of an encyclopedia, reference book, guidebook, etc [1-4].

It has long been proven that each student learns new knowledge in different ways. Previously, it was difficult for teachers to find an individual approach to each student. Now, using computer networks and online tools, schools are able to present new information in a way that suits the individual needs of each student. For example, in just five months, students at the Hacienda La Puente Unified School District in southern California, using a computer-based reading program, outperformed, on average, 15% on all eight indicators, other students who learned to read in the traditional way. At the same time, students with limited knowledge of the English language received twice as high marks as their English-speaking classmates.

Technologies used to connect learners with communities and with each other can make learning more engaging and responsive to today's realities by providing the right information at the right time. This process is largely determined by the previously acquired knowledge, expectations and the results obtained, which form the learning environment. Students at five schools in Birmingham, England and the South African province of Gauteng learned a lot more about politics, geography and the arts of the two countries through the use of the Internet, which enabled them to communicate with each other via video conferencing and collaborate on research projects.

Academic knowledge and critical thinking skills will not be enough to be successful in the 21st century - this will require the necessary technical qualifications. Therefore, many students strive to acquire information technology skills in advance and secure a successful career by doing so. Thus, over 2.5 thousand students of the small town of Nitzan in the south of Israel, aged 12 to 17, have been trained at Microsoft courses to become certified specialists. Throughout the learning process, they have helped deliver classes in schools, communities and local Teachers' Resource Centers. Powerful, high-performance software, fully integrated with the Internet like never before, empowers students to create and share information. The mere knowledge that his project will be seen and appreciated by peers and parents makes the student make full use of all his knowledge and opportunities. Students from two New Jersey schools, for example, have teamed up to create Electric Soup, an online literary magazine[6].

The existing socio-economic trend is associated with the fact that an increasing number and an increasing proportion of jobs and activities require high-level knowledge and qualifications, and in order to work successfully in these places and in these fields of activity, appropriate education is needed. Moreover, this is typical not only for the sphere

of human activity, which is formed as a result of the development of new technologies, but also for specialties that two decades ago assumed low qualifications and now do not formally require higher education. But the expanding connections in many areas of professional activity require knowledge that goes far beyond the narrow professional framework. Therefore, the demand in society for education is characterized by a tendency to constant growth as the role of scientific knowledge in human activities grows. As education acquires the nature of a continuous process, the age composition of students, and the initial level of their knowledge, and the nature of motivation for learning, and the content of the required knowledge, becomes more and more diverse. To the traditional school contingent, a large category of people who are far from school and not even university age is added. The practical issue of acquiring knowledge, qualifications, and not a diploma is brought to the forefront. On the other hand, participation in the political, social and cultural life of the state, the exercise of human rights by the individual, as well as the increasingly complex, in turn, everyday life encourage and push young people and people of all ages to improve their general education throughout their lives and acquire knowledge. and the skills required in an increasingly knowledge-based society. Consequently, one of the components of the social order should be the natural need for the continuous acquisition of knowledge, which is a natural process of the development of society [5].

Among the principles of sustainable development proclaimed by the UN, a special place is occupied by the principle of continuous education of citizens throughout their life. This goal is connected with the solution of the most important problem of mankind - the underutilization by each previous generation of its resource, experience and creative energy of creation. Continuing education and, above all, adult education, serves as a means of systematic actualization of the knowledge accumulated in the world, ensures the growth of human capital in the urban community, allows people to realize themselves in the most and most effective way in the process of life.

The concept of lifelong education aims at instilling in citizens a taste for acquiring knowledge as a way of life, fostering a constant desire to acquire new knowledge, mastering a methodological and reflective culture, the formation of such personal qualities that help every normal person in the process of learning or self-learning to independently build the trajectory of their intellectual development throughout life. In the process of lifelong education, the ability and skills to explore phenomena, make and implement decisions, communicate effectively and interact with other people, and constantly master new types and types of activities should be developed.

## 2. Theoretical Consideration

By means of new information technologies (SNIT) we mean software and hardware tools and devices operating on the basis of microprocessor, computer technology, as well as modern means and systems of information exchange, providing operations for collecting, producing, accumulating, storing, processing, transferring information. SNIT includes: computers, personal computers; sets of terminal equipment for computers of all classes, local area networks, information input-output devices, means of input and manipulation of text and graphic information, means of archival storage of large amounts of information and other peripheral equipment of modern computers; devices for converting data from graphic or sound forms of data presentation to digital and vice versa; means and devices for manipulating audiovisual information (based on the Multimedia technology and "Virtual reality" systems); modern means of communication; artificial intelligence systems; computer graphics systems, software complexes (programming languages, translators, compilers, operating systems, application packages, etc.), etc.

The acceleration of scientific and technological progress, based on the introduction of flexible automated systems, microprocessor-based devices and programmed control devices, robots and processing centers into production, has set an important task for modern pedagogical science - to educate and prepare the younger generation that can actively participate in a qualitatively new stage in the development of modern society associated with informatization. The solution to the above problem - the fulfillment of the social order of society - fundamentally depends both on the technical equipment of educational institutions with electronic computers with appropriate peripheral equipment, educational, demonstration equipment operating on the basis of SNIT, and on the readiness of students to perceive an ever-increasing flow of information, in including educational[3-5].

The widespread use of information resources, which are the product of the intellectual activity of the most qualified part of the able-bodied population of society, determines the need to prepare a creatively active reserve in the younger generation. For this reason, the development of certain methodological approaches to the use of SNIT for the implementation of the ideas of developing education, the development of the student's personality becomes relevant. In particular, for the development of the creative potential of the individual, the formation of the student's ability to predict the results of his activities, to develop a strategy for finding ways and methods of solving problems - both educational and practical.

Equally important is the task of providing psychological, pedagogical and methodological developments aimed at identifying the optimal conditions for using SNIT in order to

intensify the educational process, increase its efficiency and quality.

The relevance of the above is determined not only by the social order, but also by the individual's needs for self-determination and self-expression in the conditions of a modern society of the ethane of informatization.

Special attention should be paid to the description of the unique capabilities of SNIT, the implementation of which creates the prerequisites for an intensification of the educational process, unprecedented in the history of pedagogy, as well as the creation of methods focused on the development of the student's personality. Let's list these possibilities:

immediate feedback between the user and SNIT;  
computer visualization of educational information about objects or patterns of processes, phenomena, both actually occurring and "virtual";

archival storage of sufficiently large volumes of information with the possibility of its transmission, as well as easy access and user access to the central data bank;

automation of the processes of computational information retrieval activity, as well as processing the results of an educational experiment with the possibility of multiple repetition of a fragment or the experiment itself;

automation of information and methodological support processes, organizational management of educational activities and control over the results of assimilation.

The implementation of the above capabilities of SNIT allows you to organize such activities as [4].

registration, collection, accumulation, storage, processing of information about the studied objects, phenomena, processes, including those actually occurring, and the transfer of sufficiently large amounts of information presented in various forms;

interactive dialogue - user interaction with a software (hardware and software) system, characterized, in contrast to the dialogue, involving the exchange of text commands (requests) and answers (prompts), the implementation of more advanced dialogue means (for example, the ability to ask questions in any form, with using a "key" word, in a form with a limited set of characters); at the same time, it is possible to choose options for the content of educational material, operating mode;

control of real objects (for example, educational robots that simulate industrial devices or mechanisms);

control of displaying on the screen models of various objects, phenomena, processes, including those actually occurring;

automated control (self-control) of the results of educational activities, correction based on the results of control, training, testing.

In view of the fact that the above activities are based on information interaction between the learner (learners), the teacher and the means of new information technologies and, at the same time, are aimed at achieving educational

goals, we will call it information and educational activities.

Modern new information technologies can be used as:

1. Means of teaching, improving the teaching process, increasing its efficiency and quality. This provides:
  - implementation of the possibilities of software and methodological support of modern personal computers and Ir. for the purpose of communicating knowledge, modeling educational situations. implementation of training, monitoring the results of training;
  - use of object-oriented software tools or systems (for example, systems for preparing texts, spreadsheets, databases) in order to form a culture of learning activities;
  - implementation of the capabilities of artificial intelligence systems in the process of using educational intelligent systems.
2. An instrument of cognition of the surrounding reality and self-knowledge.
3. Means for the development of the student's personality.
4. The object of study (for example, as part of the development of a computer science course).
5. Means of information and methodological support and management of the educational process. educational institutions, the system of educational institutions.
6. Means of communication (for example, based on asynchronous telecommunications) for the dissemination of advanced educational technologies.
7. Means of automation of control processes, correction of the results of educational activities, computer pedagogical testing and psychodiagnostics.
8. Means of automation of processes for processing the results of an experiment (laboratory, demonstration) and control of educational equipment.
9. Means of organizing intellectual leisure, developing games.

The creation of an advanced information environment for lifelong education requires the solution of a number of methodological and organizational problems, including the following:

- 1) Adoption of a unified system of software and hardware compatible means of computing and communication technology used in the continuous educational process. This requires certification of the educational tools used and the implementation of a program for the creation of certification centers and their effective use [7].
- 2) Connection of educational institutions to a single digital network with subsequent access to the Internet. The solution to this problem is largely implemented at the present time in higher education and is held back in school education for financial reasons, as well as because of the complexity of its implementation for remote areas.
- 3) Formation of a unified information environment for lifelong education with the creation of databases for areas and specialties of training, which would include methodological documents, encyclopedias, reference

books, textbooks and teaching aids, as well as additional tools that support the educational process. Presentation of our achievements and capabilities in the international network is relevant. It is necessary to organize the exchange of information resources of the educational system with the international one.

4) It is necessary to improve the tools of continuous education, focused on the accelerated mastering of the material and the acquisition of sustainable skills of trainees, as well as pursuing the goals of individual learning. This includes promising software shells for the development of computer textbooks and teaching materials, software and hardware for creating computer training systems, technology tools for the development of multimedia products, geographic information systems, etc.

5) It is necessary to organize the infrastructure of the informatization of education as an integral part of the informatization of society as a whole. This structure should ensure the creation of new, replication and implementation of existing information technologies in lifelong education [6].

The implementation of these ways of introducing information technologies into education is possible through Scientific and Methodological Councils for specialties and Coordination and Methodological Councils for areas of training. They should take upon themselves the supervision and control of the introduction of new computer teaching aids in the educational process and educational and research work of students in these areas. It is necessary to raise the status of an electronic textbook, an electronic teaching aid, equating them in importance with the typical traditional teaching aids published on paper. Special attention should be paid to the study of new information technologies in the training of teaching staff. Training programs for teachers in various specialties should provide for teaching them modern information technology and instilling in them computer skills. Ideologically, when informatizing education, it is necessary to take into account a number of fundamental positions:

The evolutionary development of the existing educational methodology due to the clear advantages of new information technologies, namely, the possibility of a visual, dynamic presentation of information using images and sound, the use of remote access to information resources.

Continuity and continuity of computer education at all levels of education from preschool to postgraduate. Continuity can be provided by computer support for all subjects and disciplines of the educational process. Ensuring freedom of choice of methodology, style and teaching aids in order to identify the creative individual abilities of the student in combination with the possibility of their collective activity based on information technologies and telecommunication systems.

Creation of a scientifically and methodologically grounded system of basic education based on computer technologies. One of the real ways to solve the problem as a whole is the formation and implementation of regional scientific and technical programs with shared federal and local budget financing with additional use of extra-budgetary funds. The subject of special research of collectives of higher education should be the content, methods and means of developing education as an advanced system in the future information society. Only with the sustainable development of civilization can we hope for the consistent formation of the noosphere as a sphere of reason. The future development of mankind should be controlled, and in this aspect, undoubtedly, the development of education should also be controlled.

Problems and prospects of using information technologies.

#### 1. Obsolescence of information technology.

It is quite natural for information technologies that they become obsolete and replaced by new ones.

So, for example, the technology of batch processing of programs on a large computer in a computing center has been replaced by the technology of working on a personal computer at the user's workplace. The telegraph has transferred all its functions to the telephone. The telephone is gradually being replaced by the express delivery service. Telex has outsourced most of its functions to fax and email.

When introducing new information technology in an organization, it is necessary to assess the risk of lagging behind competitors as a result of its inevitable obsolescence over time, since information products, like no other types of tangible goods, have an extremely high rate of replacement by new types or versions. The turnover periods range from several months to one year. If, in the process of introducing a new information technology, this factor is not given due attention, it is possible that by the time the company is transferred to a new information technology, it will already become outdated and it will be necessary to take measures to modernize it. Such failures in the implementation of information technology are usually associated with imperfect technical means, while the main reason for failures is the absence or poor elaboration of the methodology for using information technology.

#### Information technology use methodology:

Centralized information processing on the computers of computing centers was the first historically developed technology. Large computing centers for collective use were created, equipped with large computers (in our country - the EU computer). The use of such computers made it possible to process large arrays of input information and to obtain, on this basis, various types of information products, which were then transmitted to users. This technological process was due to insufficient

equipment of enterprises and organizations with computers in the 60s - 70s.

Advantages of the centralized technology methodology:

the ability of the user to access large amounts of information in the form of databases and information products of a wide range;

comparative ease of implementation of methodological solutions for the development and improvement of information technology due to their centralized adoption.

The disadvantages of this methodology are obvious.

limited liability of lower personnel, which does not contribute to the prompt receipt of information by the user, thereby hindering the correctness of the development of management decisions;

limitation of the user's capabilities in the process of obtaining and using information.

Decentralized information processing is associated with the appearance in the 1980s. personal computers and the development of telecommunications. It has quite significantly replaced the previous technology, since it gives the user ample opportunities in working with information and does not limit his initiatives.

The advantages of this methodology are:

flexibility of the structure, providing room for user initiatives;

strengthening the responsibility of the lowest level of employees;

reducing the need for the use of a central computer and, accordingly, control by the computing center;

fuller realization of the user's creative potential through the use of computer communications.

However, this methodology has its drawbacks:

the complexity of standardization due to the large number of unique developments;

psychological rejection by users of standards recommended by the computing center in finished software products;

uneven development of the level of information technology in local places, which is primarily determined by the level of qualifications of a particular employee.

The described advantages and disadvantages of centralized and decentralized information technology have led to the need to adhere to the line of reasonable application of both approaches.

We will call this approach a rational methodology and show how responsibilities will be distributed in this case:

a computing center should be responsible for developing a general strategy for using information technology, helping users both in work and in training. establish a standard and define a policy for the use of software and hardware;

personnel using information technology must adhere to the instructions of the computer center, develop their local systems and technologies in accordance with the general plan of the organization.

A rational methodology for using information technology will allow achieving greater flexibility, maintaining common standards, ensuring compatibility of information local products, reducing duplication of activities, etc.

The question of the role of modern information and, more recently, communication technologies in improving and modernizing the existing educational system has been relevant over the past two decades. However, it received the greatest acuteness during the introduction into the practice of the educational process of relatively inexpensive and therefore accessible personal computers, united both in local networks and having access to the global Internet. For the successful implementation of the program for the modernization of secondary education, largely based on computerization and "internetization", not only modern technical equipment of educational institutions will be required, but also the appropriate training of teachers and the organization of the education system[3].

It would seem that there is nothing fundamentally new in this, and it will only be necessary to expand the scope of what has already been achieved: teachers of the corresponding profile have been trained in pedagogical universities, computer science lessons are held in schools equipped with computers, and administrators of educational institutions, not to mention the heads of the education system of the municipal level, consider the presence of a personal computer on their desk natural and necessary.

However, everything is not so simple, and a closer examination reveals a very fundamental contradiction - between the quality and accessibility of education. So, for each teacher, be it a school teacher or a university teacher, the main goal is to ensure the quality of education, which can be facilitated to a greater extent by the use of information and communication technologies. At the same time, for a manager, in addition to quality, a very important task is to organize the widest possible access to the available equipment and other training resources. And often, instead of providing affordable quality education, a choice is made in favor of solving only one of these tasks. The use of information technology and communication technologies in higher education is traditionally reduced to two main areas. The first is to use the capabilities of these technologies to increase the accessibility of education, which is carried out by including in the education system those persons for whom another method may not be available at all. It must be said that this form of distance learning meets with many objections. Her opponents rightly point out that future students are deprived of everything that is required to receive a truly high-quality education: work in laboratories, access to scientific libraries, communication with teachers and other students at seminars and in an informal setting.

The second area involves the use of information technology to change what to teach and how to teach, i.e. content and methods of teaching in the framework of the traditional full-time form. But here a very sensitive problem arises, associated with the fact that the introduction of advanced technologies often creates additional benefits for the most successful, active and capable clients, without affecting the level of preparation of the bulk.

The current structure raises the question of the availability and quality of education. The transition to real informatization of general education is possible on the basis of a single educational information environment formed by all participants in the information process.

Building such an environment can start with a school Internet library with a structured presentation of information that is visible and accessible to students. The organization of wide access to the necessary educational resources in practice contributes to the cooperation of educational institutions of various levels in the creation of a regional educational space[2].

But in a simplified, but unfortunately, widespread view, it is argued that everything is decided simply by the widespread introduction of information and telecommunication technologies, to which a truly magical power is attributed. And in this case, society is offered a very simple solution - it is enough to provide educational institutions with computers and telecommunications and education, as if by magic, will become cheaper, better quality and more accessible. But even the best and most advanced technologies adopted by teachers and trainees, without adequate reorganization of the educational process, have a demoralizing effect and are simply wasteful. In essence, this is the same as bringing an illiterate person to the library and waiting until he learns to read and navigate fluently in books.

A pragmatic approach to the use of information technologies assumes: with their help, education can be made more accessible with the assumption of possible losses in quality or improve the quality of education, but for a limited, most prepared contingent of students.

Another difficulty that cannot be ignored is the increased responsibility of the student himself for the learning outcomes in a situation where he is given many opportunities to choose between different forms of training, an avalanche of necessary and extraneous information and extraneous information in the face of time pressure. And in these conditions, teachers must help students in the correct organization of their learning activities, taking into account their individual characteristics and capabilities.

One of the most significant negative aspects of the changes taking place in the system of modern education is the fragmentary nature of a number of accompanying processes.

Many learners develop the habit of not separating leisure time (for example, playing computer games, texting, or surfing the net) and actually working on the computer. As a result, leisure and work are clearly unproductive and fragmentary.

In teaching based on the application of information technologies, along with such a positive moment as the systematization of knowledge, very often there is a fragmentation of the content.

Loss of contacts between trainees, teachers and trainees, as well as among the teachers themselves, is extremely dangerous. In this situation, learners and teachers cease to feel like members of a single community, they only have the roles of receiving and providing knowledge anonymously.

## Conclusions

Many new projects have emerged in the education system based on the widespread use of the capabilities of information and telecommunication technologies. But to fulfill the main task - to provide a variety of lifelong education - requires the development of new concepts that ensure changes at the level of paradigms. Such a changed educational system, in which modern technologies will be balanced and intelligently combined with the achievements of pedagogy, will provide teachers and students with new opportunities and advantages: from passive perception of educational material to independent productive activity; from communicative learning to discussion and collaborative creativity; from dry points to an integrated assessment of the development of personal qualities; from limited assistance to the learner to large-scale educational services; from one diploma to many diplomas and certificates that make up a comprehensive professional portrait of a specialist.

## References

- [1] Brookhart, S. M. Évaluer pour faire apprendre. Dans Ménard, L. et St-Pierre, L. *Se former à la pédagogie de l'enseignement supérieur*. Montréal : Chenelière-Éducation, 2010. No available online.
- [2] Cuq, J.P. *Dictionnaire de didactique du français langue étrangère et seconde*. Paris: Clé internationale, 2003. Available at: <https://www.worldcat.org/title/dictionnaire-de-didactique-du-francais-langue-etrangere-et-seconde/oclc/76811758>.
- [3] Remond, M. *Évaluer l'activité de lecture. Les Journées de l'Observatoire : La lecture de 8 à 11 ans*. Paris : Observatoire National de la Lecture, 2001. Available at: [http://veille-et-analyses.ens-lyon.fr/DA-Veille/20-september-2006\\_EN.pdf](http://veille-et-analyses.ens-lyon.fr/DA-Veille/20-september-2006_EN.pdf).
- [4] Vecchi, G. *Évaluer sans dévaluer*. Paris: Hachette, 2014. Available at: <https://dumas.ccsd.cnrs.fr/dumas-01312936/document>
- [5] Vergnaud, G. *Psychologie du développement cognitif et évaluation des compétences. L'activité évaluative réinterrogée. Regards scolaires et socioprofessionnels*. Bruxelles : de Boeck Université, 2001. Available at: <https://www.erudit.org/en/journals/mee/1900-v1-n1-mee02554/1036765ar/abstract/>.
- [6] Rieger, C. R. How (not) to be rude: Facilitating the acquisition of L2 (im)politeness. *Intercultural Pragmatics*. 2018, V. 15, Issue 5, p. 651–691. Available at: <https://www.degruyter.com/document/doi/10.1515/ip-2018-0023/html>.
- [7] Ogiermann, E. Politeness and in-directness across cultures: A comparison of English, German, Polish requests. *Journal of Politeness Research. Language, Behaviour, Cultur.*, 2009. V. 5. Issue 2. p. 189–216. Available at: [https://www.academia.edu/6422196/Ogiermann\\_E.\\_2009\\_Politeness\\_and\\_indirectness\\_across\\_cultures\\_A\\_comparison\\_of\\_English\\_German\\_Polish\\_requests.\\_Journal\\_of\\_Politeness\\_Research\\_5\\_2\\_189-216](https://www.academia.edu/6422196/Ogiermann_E._2009_Politeness_and_indirectness_across_cultures_A_comparison_of_English_German_Polish_requests._Journal_of_Politeness_Research_5_2_189-216).