

**EEIA-2018**  
**2018 International Conference "Education Environment for  
the Information Age"**

**INFORMATION SOCIETY AND INFORMATIZATION OF THE  
EDUCATIONAL SPACE: ISSUES AND PROSPECTS**

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***Abstract***

The twenty-first century could be rightfully considered as an era of information accompanied by the global informatization of the modern society. The globalization of the information society in this research is interpreted as a macroscopic, multi-faceted and internally contradictory process of the growth of similarity in the world systems: economic, political (Rhodes, 1997), educational, social and legal. The current dependence of human civilization on its information component has made it much more vulnerable in this regard. In addition, such vulnerability is connected with the fact that our society today is a fundamentally open structure (Grossman, 1995). The most important result of the formation of information society was the emergence of the so-called global information space (Martin, 2014). The authors of this article seek to answer the following questions: how does the sphere of education develop in the context of global information society and what are the key trends in the process of informatization of the educational space. Information resources and structures have become a tool for achieving a strategic advantage. The authenticity, credibility, as well as an adequate reflection of information realities represent the key challenges for the communication society. It has become clear that to live in a more complex, interconnected and detailed world the mankind needs to be well-equipped with tools for understanding its own behavioural patterns and their impact on the new social dynamics.

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**Keywords:** Information society, ICT-technologies, educational environment.



## 1. Introduction

The computers and related electronic resources now play a central role in the process of education. Regardless of how we view the digital revolution in education from the point of view of psychology, it is necessary to recognize that this phenomenon is objective and inevitably continues to gain momentum. At the moment almost the majority of students (pupils, students of educational courses and programs) is completely immersed in the process of the educational digital “revolution” (Fuchs, 2009). Today, the teacher rarely accepts student tasks written by hand, preferring the version printed on the computer. Actually, in any case, the student, when conducting independent research or preparing homework in the form of an essay or a solved case, uses a computer, and therefore students’ daily life has become almost impossible without digital gadgets. The majority of students has considerable experience with the Internet, and whether teachers like it or not, young people are actively exploiting web-resources for the most of their academic work. The students are taking advantage of an e-mail as a normal form of communication with their teachers. But not only do students find electronic resources valuable and useful. The teachers also find it useful to apply digital resources in the educational processes. We emphasize the word «useful» because the electronic resources do complement, rather than replace, more traditional methods of learning and teaching.

## 2. Problem Statement

Many processes in the communication society are in a dialectical relationship and interdependence, and these relations are complex and contradictory. According to the authors of this study, the use of historical and dialectical approach (a historical context of communication, as well as the unity of historical and logical elements of social interactions have been carefully studied by Putnam and Pacanowsky (Putnam & Pacanowsky, 2013) for analyzing the phenomenon of communication society is due to a number of factors (Chebotareva, 2014; Day, 2001):

1) A certain degree of inertia of the communication society, its unwillingness to fully perceive the products of scientific and technological progress (due both to objective and subjective reasons);

2) While developing and improving, the information society is not going in the direction of reducing all kinds of threats, but, on the contrary, both the number and intensity of such threats are constantly increasing. The information environment is in constant development, it is moving, it is not static, and as a result – such environment is facing obvious vulnerabilities and risks;

3) The excessive amount of information is increasing exponentially. Such situation leads to the fact that a person is not prepared to perceive it;

4) The parallel co-existence of two trends: a formation of large amount of databases (“big data”) with general information and at the same time – a lack of relevant and useful information (Ronald Day, for instance, indicates that recently the information and communication products have been treated mainly as “reified and commoditized notion”; for more details – Day, 2001);

5) The irregular and unbalanced character of information technologies implementation (for comparison: in contrast to electronic workflow, paper workflow has been evolving over the centuries). As a consequence, we are facing the mistrust to the process of implementing e-government, as well as to providing public and municipal services in an electronic form;

6) Digital technologies, used for process automation, do not have a complete form; they are in a constant process of improvement and replacement with latest upgrades;

7) Communication society in the context of globalization, based on cross-border concept (in this regard, Judith Martin's concept of intercultural communication has a crucial meaning; see Martin, 2014), elevates the anonymity in the networks, and, in turn, the identification of subjects of information relations to a level of a fundamental problem.

The central subject of communication relations (Peña Acuña, 2017) – a person or an identity – is subjected to serious challenges and threats; hence, the state of its security needs special attention. The sphere of security of information and educational space, in this regard, is not an exception.

The efficiency and further prospects of development/functioning of information and educational space, in our opinion, directly depend on the implementation of three key directions:

1) the development of global distance education through modern information and communication technologies (ICT technologies);

2) the expansion of the international information cooperation in the spheres of education and science through UNESCO's UNITWIN programme and GUNI Global University Network, consistent with new Sustainable Development Goals-2030 (SDG-2030);

3) a wider dissemination and development of electronic educational resources, including the development of online educational programs and courses, textbooks and manuals, as well as virtual standardization of educational processes aimed at increasing the level of the so-called digital literacy to minimize the gap between the age generations in the issues of adaptation and application of the latest ICT technologies in the sphere of education.

### **3. Research Questions**

The rapid development of the information technologies has a significant impact on the development of the educational system. It is information technology that makes knowledge and education much more accessible. Moreover, ICT technologies contribute to integration processes in education and accelerate the pace of education's internationalization (Fuchs, 2009). In addition, the information technologies have radically changed the educational methods (for example, the computerization of the educational process has taken place), led to the emergence of new forms of education (for example, distance education) and the introduction of educational Hi-Tech instruments into traditional educational structures (for example, online lectures at famous world universities). We should also mention the emergence of innovative educational disciplines (for example, robotics, global educational marketing, information law, etc.) and new research areas.

### **4. Purpose of the Study**

The aim of the research is to analyze the key trends of informatization of the educational space and to assess the future prospects of its functioning in the context of development of the information society.

## 5. Research Methods

The research is based on the system and comparative analysis, a dialectical method, as well as classification and generalization methods. Special attention is paid to the system and functional approach which allows to reveal and characterize interrelations of various levels of educational activities. The study is interdisciplinary in nature.

## 6. Findings

The interests of a person in the information sphere are to meet all his/her possible needs — to ensure the right to access to information, the possibility of citizen's participation in law-making activities, including through the development of electronic democracy mechanisms, the possibility of obtaining state and municipal services in an electronic form, as well as realization of the right to education, and etc.

The global information society appears as a platform for the development of both positive and deterrent factors: the first one - contribute to the realization of the whole spectrum of interests of the individual, the last one - hinder the development of the information society itself (as a whole).

The uniqueness of the virtual environment forces the subjects of information relations to adapt, looking for ways and opportunities for existing in “real life” conditions.

When discussing the possibilities of education through the application of the latest ICT technologies, it is impossible not to mention the issue of education’s internationalization (as a whole system).

The internationalization of education is reflected in such forms of mutual cooperation as:

- 1) an individual mobility;
- 2) the mobility of students or teaching staff for educational purposes;
- 3) the mobility of educational programs or institutional mobility;
- 4) the formation of new international standards of educational programs;
- 5) the integration of the international dimension into educational programs, as well as an international unification of educational standards;
- 6) an institutional partnership;
- 7) the creation of strategic information and educational partnership (Abbate, 2000).

The “boom” of cross-border education, in turn, has increased the number of countries in which the sphere of the higher education is reaching a massive character. In parallel, the use of new information and communication technologies is expanding; the positions of adherents to the concept of the knowledge economy are strengthening; the internationalization of the labor market and the need for skilled labor are rapidly increasing (Gumucio Dagrón, 2001).

Thus, there are essentially new forms of internationalization of education at the present moment, reflected in the movement of institutions and training programs across national borders. This phenomenon is usually called a “transnational education”.

The mobility of educational programs could be interpreted as the establishment of distance education courses by foreign educational institutions, the arrangement of educational courses or training programs by national educational institution in partnership with foreign organizations, as well as the implementation of franchising courses and programs.

The process of internationalization makes it possible to pool or integrate educational resources (it is especially important in conditions of their inaccessibility), avoid their duplication and/or excessive copying of the research topics; it also greatly facilitates the identification of educational projects.

At the same time, the process of maximizing the benefits for all participants of educational internationalization requires the recognition of foreign qualifications, which in practice implies the recognition of quality assurance systems of education.

We furthermore turn to the peculiarities of distance education at the present stage.

Over the years the distance education in various forms (from distance learning programs or the format of open universities to Hi-Tech online programs) has facilitated to realize the educational aspirations of millions of students who could not attend full-time classes and educational courses in the universities located in other countries.

The applicants/students often have concerns about the choice of higher education through distance learning, as they do not have clarity about the pros and cons of this method of learning.

It would be appropriate to highlight the following advantages of the distance education:

1) It provides an opportunity for students to combine a possible job with their study;  
2) From a financial point of view, the distance education is more profitable than full-time education (the opportunity to save money on tuition fees). In addition, many educational courses in the remote format can be provided free of charge with the timely execution of online tasks, the answers to which are sent to the managers of the educational program by e-mail or via online chat);

3) The application of the latest information technologies, which increase the degree of interactivity of training sessions and fill them with unique digital content (video presentations, promotional materials, interactive cases, 3-d models, etc.), which facilitates to study in more detail those issues that in full-time format often remain unaffected in the training sessions;

4) Distance learning saves your time. The students, who do not have enough time for full-time study, can apply for distance education and pass the educational program without actually leaving home;

5) When applying for a second higher education or additional training programs, many people are psychologically "afraid" to return to the format of training in the classroom or open audience. Therefore, distance educational technologies form a comfortable environment for a person without being disturbed. The ICT technologies help us to stay psychologically resistant to gaining new knowledge, not being afraid to miss some educational material due to possible noise in the audience, and etc. Thus, the distance education "protects" the student from the effect of the crowd.

6) The accredited distance education programs are recognized by the majority of employers, which provides an opportunity for a person within a short period of time to get, for example, a new specialty and a new job, without fearing that such a format of education will be ignored by the companies/employers.

Among the disadvantages of distance education we would like to stress the following points:

1) Without professional teaching staff for personal interaction and classmates, who could help, constantly reminding of the upcoming tasks, the chances for distraction and not meeting the deadlines remain high enough.

2) The availability of hidden financial costs. Although the cost of distance education programs is usually cheaper than a regular full-time education program, in fact there may be hidden costs.

3) The complexity of ICT technologies (Chebotareva, 2014). An excessive dependence on technology could be considered as a major drawback in distance education, especially when the process of learning takes place in an online environment;

4) The distance education is often hampered by a lack of well-qualified teachers.

It is necessary to ensure that electronic educational resources are focused on the implementation of the goals of education, without compromising the content and the quality of the educational program.

Thus, e-learning resources allow:

1) to manage and administer the online educational program (Martin, 2014): the routine administration of the courses (class advertising, providing copies of the curriculum, assigning discussion sections and receiving course news) can be carried out and processed more efficiently through the home page of the course, electronic discussion groups and online mailing lists (Pashchenko, 2014).

2) to form and structure the source base for teaching and research: the Internet and CD (USB/ Blue-Ray) media provide a wider choice of primary and secondary sources (including visual and audio sources). Using these sources, students/learners/trainees can bring their own evidence and arguments to lectures and discussion sections, and conduct research and analysis on a wider range of research topics (Taramova, 2015).

3) to increase the level of digital literacy (Grossman, 1995) through the preparation of educational projects and presentations: instead of reporting on the decision of traditional tasks-tests and exams, students/trainees can perform more independent exercises in the publishing sector, prepare exhibition stands and poster presentations, group project presentations and models, develop training modules and other materials for their peers. Web archiving training materials for several releases (this refers to the graduates of the programs or courses) allows you to turn online educational course or educational program in a stable, functioning, sustainable and collaborative intelligent educational and outreach design (Rogers & Kincaid, 2014).

4) to increase the level of interactive lectures: a computer with relevant software for presentations can provide a unified tool for filling lectures (Bradberry & Greaves, 2015) with graphic structures, photo materials, combined slides, statistical charts and tables, images, music and even video clips. In addition to printing them as handouts, you can save a classroom/auditorium presentation in a web-compatible format for later viewing and discussion.

5) to create an interactive online discussion and debate environment: electronic communication tools (Feenberg, 2013) such as e-mail, conferencing software, and online chat services can initiate a wide range of topics/questions for discussion even before a face-to-face classroom or face-to-face scientific conference. The formation of an interactive online environment (Medina, 2013) makes it possible to overcome the difficulties of planning the work program of the course, taking into account the interests and ideas of the students themselves (pupils, course's applicants, etc.).

Completing our analysis of the process of informatization of education, we would like to give practical experience in the implementation of ICT-technologies in the educational process on the example of the innovative model of tutor classes in Moscow State School № 37 (Moscow, Russia).

The model of classes with tutor support was introduced in Moscow State School № 37 in 2016. The key principles of this model of education are the following:

1) The principle of information openness. Outwardly, the diversity of educational forms and proposals does not guarantee the implementation of the principle of education openness: the student needs to acquire the culture of choice and co-organization of various educational proposals in his / her own educational program, make maximum use of various own resources to build his / her educational program. Tutor's task in the framework of the principle of open education is to expand the educational space of each student, providing him or her with the greatest variety of movement options for self-determination.

2) The formation of students' ICT-competence occurs during the application of information technologies in all lessons, as well as in project activities.

3) The basis of open education is represented by an individual educational program (IOP), which is not connected with a particular institution or a standard, and at the same time is tied to a specific student, a specific person.

The functioning of the tutor's department in the school differs in levels of education. At the primary level, the main thing is to support the child's interest in education. The tutor's tasks at the stage of primary school are to identify and capture the cognitive interest of the younger schoolboy; to identify the individual problems of the student; to teach the students how to learn with cognitive interest; to provide recommendations on how to obtain the necessary information, etc.

In a higher school the technique of tutor support is extremely complicated, since now the tutor needs to build a support system for the joint reflection of the educational search. Competitive and communicative aspects of interaction with peers are especially important for high school students. Online (interactive) educational games (Teisman, 2000) and educational sessions as a form of tutor support at this stage allow the student to be active in order to understand his or her current opportunities and prospects of movement in education and career.

## 7. Conclusion

The process of educational informatization in the context of global processes makes it possible to form a special online (digital) educational space that eliminates national and territorial differences between the states, thereby allowing an open and quick access to innovative educational resources from around the world. The ICT educational resources, in our view, provide an opportunity to address two most urgent tasks:

1) to ensure continuity between all levels of education;

2) to gradually eliminate the "gaps" in digital literacy between young and old generations, thereby realizing one of the most important values recognized by UNESCO and the UN as a whole – an inclusive and continuous learning/ lifelong education.

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