

# Informative-Communicatory Space of Education in the Russian Federation: Genesis and Development Patterns in the Digital Age

Bondarev V.G. Bashmakova N.I. Sinina A.I.\*

*The North Western Branch of the Federal State Budget-Funded Educational Institution of Higher Education*

*«The Russian State University of Justice», Saint-Petersburg, 197046, Russian Federation*

\*Corresponding author. Email: ursinus@yandex.ru

## ABSTRACT

In the context of the formation of the foundations of the global information society, the usage of information technologies in the educational sphere is becoming particularly relevant. The relevance of the study is determined by the following factors:

- Trends in virtualization, networking, and digitalization that reveal themselves in virtually unlimited access to information and actualize the question of the algorithm for selecting it in the global world;
- Inconsistency of the system of educational interactions that acquire a virtual nature. The main contradictions are: contradiction between information that includes non-constructive information flows and the need to obtain relevant knowledge;
- Deformation of the traditional axiological scale and the formation of new values and meanings, which does not contribute to solving problems related to the selection and systematization of information in the educational process;
- Information on the modern educational process defines goals and tasks in a new way.

Within the framework in the article the main approaches are used while defining the concept are highlighted and characterized; the prerequisites for the emergence of the informative-communicatory space of education in the global context are outlined; the regularities of development of informative-communicatory space of education is revealed.

**Keywords:** *information society, globalization, digitalization, networking, education, genesis of the notion content, approach, informative-communicatory space of education, prerequisites*

## 1. INTRODUCTION

In the context of the transnational globalization era, the field of activity of transnational actors is not a single region or continent, but the whole world. The supranational nature of globalization processes is associated with a change in the balance of power of state and non-state participants in global changes and realizes in the expression of global challenges to humanity in world politics, economy, culture and education. The transition of the Russian Federation to a new stage of development is accompanied by global changes in the world associated with the change of public consciousness and the system of values, the transition to a new type of society – informational society.

Era of informational society has come and dictates its conditions, due to the communication processes a new environment is being created in the modern scientific lexicon so-called *information space*, which has a number of similar terms at the initial stage of studying the genesis (“informative-communicatory space”, “information space

based on the knowledge”, “Internet”, “virtual space”, “media educational space”) and is a debatable issue that does not have a formed notion in the modern world. Meanwhile, in the context of digitalization and total networking of Russia the studied notion ceases to have a metaphorical character and gradually passes into the category of scientific terminology (in the framework of this article – “informative-communicatory space of education”).

Regulation of the informational sphere and formation of the information space is becoming a priority task of the state policy of Russia. Prospects of development of information space in Russia are defined in the approved Decree of the President of Russia dated 09.05.2017 no. 203 “the Strategy of informational society development in 2017 – 2030” (hereinafter – the Strategy of informational society development Strategy), defining national interests in the development of the informational society. Its priorities are distinguished the basis of information space, knowledge-based [1].

In this regard it has become obvious that modern Russian education – both higher professional and secondary have met the realities and challenges of the digital age and have an active impact on the successful integration of the student into the modern information and network environment of a single educational space on the scale of both the country and the world.

However, it should be noted that many areas of society including education are not fully prepared to create favorable conditions for the harmonization of relations between education and rapidly developing technologies in the context of digitalization and networking. Special attention should be paid to the problem posed by the authors of this paper, namely, the development of the informative-communicatory space of education in Russia.

### 1.1. Problem assignment

The problem of digitalization and networking of modern society and education is burning and usually studied on an integrated basis in the context of different fields of knowledge: psychology, philosophy, sociology, etc.

The development of informational society as a new stage of human development is of great interest.

At the same time, it should be noted that the problem of studying the genesis of the notion of “information space” has come in sight of modern philosophers, sociologists and psychologists, who often supplement this notion with the required component for a specific research (communication), getting new transformations of existing notions.

### 1.2. Material and Methods

**The methodological basis** of the research is the system approach which regards education as an open system actively interacting with the external environment, where changes are mainly due to processes of globalization and digitalization, the development of “informational society” and “economy of knowledge”.

**Object of the research:** informative-communicatory space of education.

**Subject of the research:** identification of a genesis of the notion of “informative-communicatory space of education”.

**The purpose of the study** is to analyze the content of the notion of informative-communicatory space of education in the context of the Unified Educational System of Russia.

**Genesis of the content of the notion “informative-communicatory space of education”**

To achieve this purpose, we have considered the genesis of the notion “informative-communicatory space of education”, identified and characterized the main approaches used by researchers and scientists in determining studied notion.

The logic of studying the genesis of the notion makes it necessary to examine in a certain sequence the development of interrelated notions: “space” – “information space” – “informative-communicatory space”, “informative-communicatory space of education”. This logic is due to the simplified understanding of the essence of the term “information space” and the need for a more detailed genesis analysis which requires the reference to the generic notion of “space”.

It is well-known that “space” is considered one of the basic categories of physics and philosophy, which is used for everything contained in the material world.

The genesis of the notion refers to the history of philosophical and economic thoughts, showing that the essence of these notions were of great interest for all famous thinkers of the past and present [2]. Space and time as philosophical categories still do not have an unambiguous interpretation among researchers, but in the conceptual and terminological apparatus, a generally recognized definition of these categories has been formed, which has a pronounced philosophical and physical aspect. In accordance with “Physical encyclopedia”: “*space* is a set of relations that expresses the coordination of material objects. *Space* expresses the order of location of simultaneously existing objects, their length. *Time* is a set of relations which implies the coordination of phenomena, their sequence and duration” [3].

Materialistic understanding of the essence of space and time implies that these phenomena can't exist outside of material processes [4].

### 1.3. The notion “information space”

Among the key emergence prerequisites for the notion of “information space” should be identified:

- Need of society for informing;
- Introduction of innovative technologies.

In the scientific environment the notion of “information space” was originally used by the editor of the journal “Information resources of Russia” O.V. Kedrovsky [5].

The analysis of existing studies has allowed to state that the term “information space” is used in different contexts. In a wide context the notion under study is interpreted as a set of results of semantic activity of mankind [6]. In addition, the term under study is interpreted both figuratively and philosophically, as well as in semantic research, then the information space can be understood as “the world of names and names, coupled to the ontological” [7].

In a narrow context the notion under study is interpreted in relation to the text of the informational society development Strategy [1]. According to it the notion “information space” is interpreted in an organizational and technical way, namely as “a set of information resources created by subjects of the informational sphere, means of interaction of such subjects, their information systems and the necessary information infrastructure”. This interpretation has caused and continues to cause debate and controversy.

Today the notion of “informational society” is studied in the context of different sciences and interpreted from different points of view.

From the point of view of *globalism*, this notion is interpreted as “a set of information resources and infrastructures that make up state and interstate computer networks, telecommunications systems and public networks, and other cross-border channels for transmitting information” [8]. This interpretation mainly affects the technical aspect of the formation of the information space. From the point of view of *geopolitics*, “information space” is interpreted as “the space in which information is created, moved and consumed” [9]. Obviously, we are talking about some limited environment to which information flows are linked.

From the point of view of *cultural studies and sociology*, this notion is viewed as “a conceptual space that reflects the worldview of people of the modern era” [10].

In other words, the space that is formed under the influence of the worldview exists at the very particular moment.

From the point of view of *media systems*, the “world information space” is studied, which is interpreted as “national and cross-border information flows integrated with the help of communication systems and methods of information transfer improved during the information revolution” [11].

From the point of view of *social philosophy*, this notion is interpreted as “historically formed, provided with legal guarantees and means, providing the greatest measure of accessibility for the consumer form of coordinated and structured, geographically close and remote information resources that accumulate the results of people’s communication activities” [12].

These interpretations, however, do not allow us to choose the appropriate definition of the notion “information space” that best suits the realities of today, in a view of such trends as digitalization, globalization, humanitarianism, and etc. Therefore, we consider it necessary to take into account both technical and humanitarian approaches applied to the notion of “information space”.

Within the framework of the *technical approach* presented by the works of Russian researchers (V.V. Zhilkin, A.V. Manoil, A.I. Nenashev), the main focus is on the organizational and technical aspect, in the context of which the “information space” acts as a system that transmits, processes and stores information using technical means and other resources.

Within the *humanitarian approach*, represented by the works of Russian researchers (V.L. Girich, V.N. Chuprina, M.V. Katkov, S.A. Proskurin) emphasis on the anthropological perspective in the context of which “information space” is a collection of knowledge and information, evolving and constantly changing in the evolution of society.

Under current conditions studied notion according to the authors of the article must be examined in consideration of both approaches, that is, from the position of the inter-paradigm approach. Two arguments can be stated:

Information space implies human nature that is any subject of activity;

Information space includes limitations and attachment to data distribution channels that is the structure of information space is determined by “information technologies and material carriers of information” [13].

#### **1.4. The notion “informative-communicatory space”**

The notion “informative-communicatory space” has entered into scientific circulation following the notion of “information space” and has become according to the authors the result of the terminological apparatus enlargement and a consequence of the integration of the above mentioned approaches.

Taking into consideration that today both communication and information are becoming fundamental there is a need to give these notions an ontological (existential) status. In this regard, it is necessary to discuss options for using the notion of “informative-communicatory space” which is often used more as a figure of speech. In other words, it is a metaphor rather than a strict logical term. As an argument, we refer to the position of P. Bourdieu, according to whom [14] today different denominations are equally used in a modern scientific world including “informative-communicatory space”.

We associate it with a theoretical approach that allows us to connect communication and information. We are talking about the theory of informational society (D. Bell, O. Toffler, M. Castels), which considers the media as a stimulus and source of social development and communication.

Identifying the social and philosophical potential of the notion of “informative-communicatory space”, it is advisable to briefly consider the co-existing notions.

The communicatory space is the whole set of social relations, as well as a set of symbolic interactions between a person and the surrounding reality (natural and social); it helps to organize the life of social agents and form the internal structure of society.

We consider “the communicatory space” as a sphere within which there are relationships that ensure the systemic qualities of society (this is the relationship between status, role, lifestyle and values, norms, expectations, ideas, etc., as well as the connections that arise as a result of interaction). Objects and phenomena, including people, are located in this sphere according to its laws of functioning and interaction.

Taking into account the fact that we combine information space and communication space into a single whole, we attempt to define it as this is *a historically formed reality created by the subject and for the subject, accessible to all members of society, which equipped with various means and methods of communication; caused by the process of digitalization*.

Based on the thesis by P. Bourdieu which is “the social reality and reality of areas are included only in spheres

where information and communication factors are mainly active" [14]. According to Bourdieu's works, informative-communicatory space itself can be divided into subspaces: scientific and technical, economic, political, managerial, cultural, etc.

In this article we are talking about the informative-communicatory space of education, which will be discussed further.

Thanks to communication processes, society creates an environment like an informative-communicatory space, establishing a border between communications, on the one hand and humanity on the other. It allows us to stress the necessity of studying the phenomenon under question from the point of view of the inter-paradigm approach.

Prerequisites for the emergence of the discussed notion "informative-communicatory space of education" are considered:

Need for a more precise definition of the application to education in the context of digitalization and networking; Need to expand this phenomenon, since modern information processes imply two-sided communication, in which both the generator and the recipient of information have active roles that form this communication.

The main communication channels that form the informative-communicatory space of education include the mass media: television; Internet resources, and educational institutions.

It is seen that such a space can be considered as an information space of interaction between participants in the educational process, generated by information and communication technologies. Based on the thesis that "space" is a set of objects between which relations are established that are similar in structure to the usual type of relations: vicinities, distances, etc., which have such properties as length, unity of continuity and discontinuity [15], the space of education is seen as an aspect of the world model – the extent, structure, coexistence, interaction, coordination of elements and the corresponding relations between them. The notion of "space of education" is one of the most general and abstract concepts of the philosophy of education which is a conditioned "position" in the society where certain relations and connections are formed by means of subjects, where special activities of various state, public, and other systems are carried out for the development of the individual and his socialization. Such a space is both a *process* and a *result* of interaction between subjects and objects of education, the coexistence of which is hardly possible if the communication links of teaching, learning and educational objects are broken.

Within the context of digitalization and networking information and communication infrastructure in the space of education in the informational society unites through information - telecommunication network of educational resources (videos, texts, software and other tools, materials or technologies used to provide access to knowledge) and ensures the effective use of distance learning technologies, systems and networks for training specialists in various fields of activity in this article it is advisable to speak not of education in general, and on *digital education*.

Defining the notion of the concept "digital education" and highlighting its key components, based on G.S. Gershunsky work we will rely on the approach of identifying four aspects of the meaningful interpretation of education as a value, as a system, as a process, as a result [16].

Continuing the thread of argument and revealing the essence of each key component, we note that education as a *value* allows us to consider the education under the state's public and personal aspects; education as a *system* allows to speak about existence of a coherent set of objects having certain properties such as variability, adaptability, etc.; education as a *process* takes into account the trajectory from the target to result, from the subject-object and subject-subject interaction in the dyad: "teacher – student", "student digital learning environment", etc.; education as a *result* of it involves such chain links as: digital literacy, digital education - professional digital competence and informational culture and mentality.

This study focuses on the consideration of the digital education from the point of view of the *process* and the *result*, the main means of which will be digital technologies. The authors consider digital age to be the most relevant and promising because not only "leverage" of the digital learning, but also a medium that open up new vistas for studying mentioned components of the education.

Being a new paradigm "the digital education" in a broad sense is an interdisciplinary direction at the intersection of neuroscience, psychology and education, aimed at changing the role of human capital in the digital economy with a turn towards the formation of a multi-functional intellectual and network human capital of specialists for the digital economy. The notion "informative-communicatory space of education" is extensive and means a special information space in which the educational process is carried out, in particular digital. Philosophical reflection in this discourse involves a large number of different categories: digital education, online lifestyle, etc.

The author's vision of this issue is as follows: "*informative-communicatory space of education*" (*digital*) should be considered as a managed and dynamically developing system of effective provision of information and communication educational services, taking into account modern trends and transformations of education. The ontological status of such a system is the use of modern information technologies, in particular the Internet which is becoming more and more global, being introduced into all spheres of life of modern society. The real content of the ontological status of such a space is a set of educational situations, training content and professional context, the specificity of which is determined, in particular, the level of information technologies used.

If today the ontological status of such a space is determined by the use of modern information technologies, then its epistemological status is based on the ratio of digitalization and networking as general and private, that is, the space is represented as an invariant of the information space as a whole.

*Functional means of “informative-communicatory space of education”:*

Information resources containing data, information and knowledge recorded on the appropriate media;

Organizational structures that ensure the functioning and development of a single information space (the collection, processing, storage, distribution, search and transmission of information);

Means of informational interaction between students and educational institutions that provide them with access to information resources based on appropriate information technologies, including software and hardware and organizational and regulatory documents.

*Key features of “informative-communicatory space of education”:*

Openness, which implies the absence of age, class, gender, geographical, time and other restrictions;

Non-linearity of educational trajectories;

Delocalization;

Virtualization;

Technologization.

This concept is a model of a new space of professional education, which is supported by modern informational technologies. We can note that, the search for ways to resolve the issue of reorganization of the educational space of Russian higher education requires the development of a scientifically based integration system that provides for the formation of a personality adapted to the use of the global information system of the unified educational space, which leads to the transition from the modern man (*Homo Sapiens*) to a new species (*Homo Reticulum (from Latin) reticulum* – any fine network – any finely organized system) [17].

*The specific of the “informative-communicatory space of education” is:* the introduction in its content information and communication technologies; availability of an automated training system; the organization of such a space is carried out under the strong influence of the world’s educational information resources; transformation of the role, functions and activities of the student’s personality.

*Regularities of development of “informative-communicatory space of education”*

The main regularities of the transformation of the domestic “informative-communicatory space of education” under the influence of informatization and virtualization are: changing the architecture of the world educational space; development of digital education; development of the model of availability of education in higher education; development of global universities; emergence of open educational platforms; introduction of mass open online courses.

*Significant principles of functioning of Russian education are:* expanding the informative-communicatory space of education based on modern information technologies (for the state); society-guarantees of high-quality, competitive education for every citizen, regardless of their social status (for civil); minimization of information inequality when receiving educational services (for families); maximizing the autonomy of educational potentials, which it

implements as an integrated subject of educational interaction (for an individual).

## 2. CONCLUSION

In conclusion, we note that in the context of the neural network technological revolution in the XXI century a fundamentally new scientific and ideological paradigm is being formed, when the neural network imperative for the development of society becomes a strategic target dominant.

A new level of educational communication, including digital education, is considered by the authors as:

A new direction of education, based on the introduction of information and network educational strategies and technologies developed on the basis of research in the field of brain functioning;

A new paradigm in a broad sense is an interdisciplinary direction at the intersection of neuroscience, psychology and education in order to optimize the educational process and learning;

The “informative-communicatory space of education” accessible to everyone becomes an intermediary in digital education.

The following inferences have been made:

The genesis of the notion of “informative-communicatory space of education” (digital) is considered and the authors’ interpretation is proposed.

Traditional approaches used by the authors in defining the concept are identified and characterized, and an inter-paradigm approach is proposed and justified;

The prerequisites for the emergence of “informative-communicatory space of education” in the global context are outlined;

The functional means and key characteristics of “informative-communicatory space of education” are established;

The main principles of functioning of the Russian education in the context of digitalization are outlined;

The regularities of development of “informative-communicatory space of education” are revealed.

## REFERENCES

[1] The Decree of the President of the Russian Federation dated May 9, 2017 No. 203 “On the Strategy of information society development in Russian Federation to 2017 – 2030”, Available at: <http://www.pravo.gov.ru> (Accessed 30.01.2020)

[2] I. Kant, Critique of pure reason, Saint-Petersburg, “Time out”, 1993, pp. 37

[3] Physical encyclopedic dictionary, vol. 4, Moscow, Nauka, 1965, pp. 227

- [4] The Latest philosophical dictionary, in V.A. Kondrashov, D.A. Chekalov, V.P. Koporulina (Eds.), Rostov-on-don, Phoenix, 2008, 668 p.
- [5] O.V. Kedrovsky, Information space of Russia, Information resources of Russia, 1994, no. 4, pp. 2-3
- [6] I.I. Teterin, Thinking in the modern information space: essential characteristics and ways of development, Modern problems of science and education 2014, no. 2, pp. 73-77
- [7] Wikipedia, Free Encyclopedia, Available at: <https://ru.wikipedia.org/wiki> (Accessed 30.01.2020)
- [8] V.L. Girich, V.N. Chuprina, Global information space and the problem of access to world information resources, Russian state library, Available at: [http://www.rsl.ru/upload/mba2007/mba2007\\_05.pdf](http://www.rsl.ru/upload/mba2007/mba2007_05.pdf) (Accessed 30.01.2020)
- [9] S.A. Proskurin, Geopolitical dimension of the global information space, Geopolitics: Studies. In V.A. Mihajlova (Ed.), Moscow, RAGS Publ., 2007, 261 p.
- [10] S.M. Soroko, Structure of the information space of culture, Pedagogical Sciences: cultural Studies, no. 15, Vestnik of PSU. Ser. E, 2012, pp. 123-127
- [11] S.S. Shirin, External environment factor in the modern global system of international relations, International processes, 2005, Vol. 3, no. 3(9), pp. 90-105
- [12] M.V. Katkova, The concept of “information space” in modern social philosophy, Izvestiya of Saratov University, New series, Ser. Philosophy. Psychology. Pedagogy, 2008, Vol. 2, pp. 23-26
- [13] A.I. Nenashev, Information space of modern society: communication aspect, Ph.D. (Philosophy) Thesis, Saratov, 2008, 32 p.
- [14] P. Bourdieu, Sociology of politics, In N.A. Shmatko (Ed.), Moscow, Socio-Logos, 1993, 333 [2] p.
- [15] Large encyclopedic dictionary, In A.M. Prokhorov (Ed.), Moscow, Big Russian encyclopedia; Saint-Petersburg, Norint, 2002, pp. 968
- [16] B.S. Gershunsky, Philosophy of education for the XXI century (in search of practice-oriented educational concepts) Monograph, Moscow, 1998. 680 p.
- [17] The free dictionary, Available at: <https://www.freethesaurus.com/reticulum> (Accessed 30.01.2020)