

Genesis of methodological approaches to definition and organization of university information and education space

ГЕНЕЗИС МЕТОДОЛОГИЧЕСКИХ ПОДХОДОВ К ОПРЕДЕЛЕНИЮ ПОНЯТИЯ ИНФОРМАЦИОННОГО ОБРАЗОВАТЕЛЬНОГО ПРОСТРАНСТВА ВУЗА

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Abstract

The paper presents the analysis of methodological approaches to the origin, formation and development of the 'information and education space' concept, and also notes the relevance of its application in contemporary society. The genesis of methodological approaches to the definition of an information and education space concept is based on a theoretical analysis and generalization of the philosophical, historical, pedagogical, sociological and cultural sciences, which made it possible to specify its essential content. It is indicated that the use of media resources, sites, instant messaging services acts as an organizational and pedagogical toolkit, which provides means for optimizing time management, managing on-line and off-line interactions as part of the learning process in present-day universities and colleges. The main purpose of this article is a brief analysis of a system-holistic, mental-emotional, personality-developing, socio-geographical, distance, and local-poster approaches to the essence of

Аннотация

В статье представлен анализ методологических подходов к зарождению, формированию и развитию концепции "информационно-образовательного пространства", а также отмечена актуальность ее применения в современном обществе. Генезис методологических подходов к определению понятия информационно-образовательного пространства базируется на теоретическом анализе и обобщении философских, исторических, педагогических, социологических и культурологических трудов, что позволило уточнить его сущностное содержание. Показано, что использование медиаресурсов, сайтов, сервисов обмена мгновенными сообщениями выступает в качестве организационно-педагогического инструментария, обеспечивающего оптимизацию тайм-менеджмента, управление онлайн-овыми и офлайн-овыми взаимодействиями в рамках учебного процесса в современных вузах и колледжах. Основной целью данной статьи

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information and education space determination; and also the definition of this pedagogical phenomenon. The study has used various methods described in this paper: a hindsight analysis of domestic and foreign experience in the use of state-of-the-art IT solutions; theoretical methods; established pedagogical methods; empirical methods, an educational experiment; programmed learning techniques; interactive methods; forecasting methods; intuitive methods; methods of statistical data processing; methods for the study and generalization of contemporary pedagogical experience in the development of a personal information literacy in education. The result of the introduction of the methodological approaches described by the authors of this article to the organization of the educational information environment of the university was a positive dynamic in the development of information needs, reflection and self-assessment of educational and cognitive activities in the Internet environment, as well as assessing the ability of self-education and self-development among students of various profiles and areas of preparation.

Keywords: information and education space, concepts and approaches to the development of information and education space, social networks, educational networks, networking.

Introduction

Education in the information and knowledge societies is gaining a new attribute due to availability of state-of-the-art technical aids, information and communication technology, and an information and education space that create favourable environment for each person and a wide range of options for receiving, processing, storage and application of information to the extent that is required for a person's self-development, self-education and self-improvement. Today, the 'education without borders' is becoming one of the most in-demand concepts. Its implementation is associated with the openness of the education space and education systems. Development potential of ICT training related to the development of international cooperation suggests the

является краткий анализ системно-целостного, психоэмоционального, личностно-развивающего, социально-географического, дистанционно-ориентированного и локально-ориентированного подходов к определению сущности информационно-образовательного пространства, а также определение данного педагогического феномена. В исследовании использовались различные методы, описанные в данной статье: ретроспективный анализ отечественного и зарубежного опыта использования современных ИТ-решений; теоретические методы; традиционные педагогические методы; эмпирические методы, педагогический эксперимент; программные методы обучения; интерактивные методы; методы прогнозирования; интуитивные методы; методы статистической обработки данных; методы изучения и обобщения современного педагогического опыта развития информационной грамотности личности в образовании. Результатом внедрения описанных авторами данной статьи методологических подходов к организации образовательной информационной среды вуза явилась положительная динамика в развитии информационных потребностей, рефлексии и самооценке учебно-познавательной деятельности в Интернет-среде, а также оценке способности к самообразованию и саморазвитию у студентов различных профилей и направлений подготовки.

Ключевые слова: информационное образовательное пространство, концепции и подходы к развитию информационного образовательного пространства, социальные сети, образовательные сети, сетевые технологии.

implementation of the 'community-based education' principle and application of a technique that can be called '3-less': *group-less* (the use of digital information systems makes it possible to offer each student an individual curriculum, individual training products, etc.; *session-less*, based on an individual schedule of knowledge mastering (the students take the exams as they master the relevant discipline rather than during the finals period); *paper-less*, i.e. using mostly materials from a two-level telecommunication library of digital resources (full-text documents and media products).

In the framework of our study, we will present the information and education space as a model that comprises such components as the

information and education environment, social, psychological, pedagogical, cultural conditions for implementation of information processes, as well as a combination of information sources, databases and their combining networks and technology.

Theoretical framework

When addressing the problems of education in the information society, we have faced the need to study the key concepts that reflect and set today's specifics of the university educational process as 'information space', 'education space', and 'information and education space'. 'Space' is a term common to the above three concepts. So, let us start with considering this one. A.D. Ursul pointed out that "... there is hardly a broader concept by which information can be defined" (Ursul, 1970).

Analysing the historical perspective of the 'space' concept emergence, two conceptions are to be distinguished. The first conception of space originated in Democritus, and it passed to his successor Isaac Newton, who was credited with putting forward this concept. According to their conception, a space was identified with emptiness and considered as "a motionless container of physical objects." Therefore, the space they defined should exist everywhere and be independent of the void shape. However, as it follows from their definition, a space is a container of material objects, and they are clearly physical and can exist only in the physical universe. A German philosopher and mathematician G.W. Leibniz disagreeing with I. Newton in his conception of space argued that "a space does not exist all by itself, apart from material bodies; for space is nothing but the relation and order of coexistence of phenomena and things possible at the same time." He conceived of space as a "well-substantiated phenomenon" (New Encyclopaedia of Philosophy, 2010).

The foundation of the second concept was laid by Aristotle, who argued that "the void as such is non-existent, and space is simply a property of the bodies that reside in it." As an advocate of this conception of space, Plato almost denied the determinability of space supporting Aristotle with his views. He understood space just as "an amalgamation of all places of real objects." Plato's ideas reflected in Rene Descartes reasoning, who primarily conceived of space "as an extension of things".

In the early 20th century, the concept of space began to play a major role in physics, and the identification of physical and mathematical space made it possible to describe the former in terms of the latter. In the middle of the 20th century, notions of space as a phenomenon encompassing not only the 'physical continuum', but also other subject areas, became increasingly important. This category appeared as universal, since it combines diverse phenomena in the integrity of the universe, as well as various conditions that can affect a person. The fact that space is considered as something that is not related to a specific subject is important. Philosophers interpreted the concept as a given, constantly evolving, yet independent of the subjects in it. At the same time, it had coordinates and was set by them.

Thus, contemporary philosophy defines space as "a form of being of matter that characterizes its extent, structural properties, coexistence and interaction beyond the elements in all material systems" (New Encyclopaedia of Philosophy, 2010).

According to the philosophical literature studied, the main properties of space include: objectivity; independence from human consciousness (but at the same time, dependence on structural relations and development processes in material systems, as well as the unity of discontinuous and continuous in their structure); expansion in terms of the proximity and coexistence of various elements (when stating the fact of adding to each given element the next one, or the possibility to reduce the number of elements).

The concept of 'information space' under our study is extensively applied in various sciences: in cultural studies, pedagogy, psychology, computer science, sociology, etc. As a category, it has been studied by T.F. Berestova (Berestova, 2004), M.A. Vus (Vus, 1999), E.O. Ivanova (Ivanova, 2011), I.M. Osmolovskaya (Osmolovskaya, 2010), and others.

Thus, I.M. Osmolovskaya has formulated the concept of 'information space' similar to a philosophical category, the analysis of which has been carried out above, as a 'form of the existence of information' (Osmolovskaya, 2010) considering, at the same time, both material and ideal objects. The author attributed various types of information carriers, devices for its transmission, storage and reproduction, and others to material objects, and information flows, information fields, etc. to ideal objects. The information space is also characterized by the

structural properties, and, as the author pointed out, “partial materiality related to its hardware” (Osmolovskaya, 2010).

On the assumption of the basic element – information resources, T.F. Berestova, suggested considering information space as “... historically formed, provided with legal guarantees and means of communication determining the highest accessibility for a consumer in the form of coordinated and structured, geographically close and remote information resources that cumulate the results of human communication activities” (Berestova, 2004). As we see, the author has focused on the technical aspect of the definition by describing its functional component in detail. Like any other space, the information space is determined by a number of components, which, according to M.A. Vus, include “... information resources, information and communication infrastructure, the mass media system, IT, communications, information and telecommunications, information products and services market, conjunction with global open networks, the information legislation system” (Vus, 1999).

From the scientist’s point of view, it would be logical to talk about an integrated global information space, which represents a system of subspaces concentrated at different levels, but combined into the information gaining amalgamation. At the same time, educational institutions as part of the information space infrastructure are one of the main factors in the development of the latter.

Our reasoning has led us to identification of the synergistic patterns associated with the learning process improvement. The study of these consistent patterns gives an idea of the importance of creating non-equilibrium events and conditions to situate those who need to be trained and educated, i.e. there is a need for the organization of special educational environments whose further evolution, as well as socialization and amalgamation, will translate into the formation of an education space. This is required to fulfil the principle of determinism, the subject-matter of which, according to I.K. Shalaev and A.A. Veriaev is as follows: “... through changes in the natural environment that surrounds a student, the student changes as well” (Shalaev, Veryaev, 1998). In this regard, there is a need to analyse the scope of the concept of ‘education space’, which, from our point of view, is inextricably linked with the concept of ‘information space’.

V.A. Kastornova considers an education space at the level of the phenomenological interpretation as “a space of the subject’s involvement in the totally education space, which is a system of real human interactions with reality and which is given to the subject through the perception of reality”. In summary, the author defines an education space as a set of objects with the established relations between them (Kastornova, 2014).

Also, an education space can be considered from an information perspective, as suggested by V.A. Kastornova when she was analyzing this definition. According to the author, if we use the terms ‘learning services’ and ‘educational information’ as a basis, an ‘education space’ will be defined as a kind of place where learning services are provided to transfer educational information. Then, this version of the definition allows us to speak of the flows of educational information and learning services in society as “appropriate channels for transmitting these services and information” (Kastornova, 2014). In our understanding, this definition is highly commercialized. The famous formula ‘Goods - Money – Goods’, where information (rather than knowledge) and services act as Goods (within the scope of this definition), does not fit into either the competency-based, personality-oriented, or individual approaches integrated in the contemporary domestic educational process. And, as a result of the pragmatic approach, the immediately poses the question about the effectiveness of such an education space and the quality of knowledge transmitted and acquired by students, since the concept of ‘knowledge’ is known to differ significantly from the concept of ‘information’ and, accordingly, information transfer does not always lines up with mastering knowledge.

Analysing the directions of the term ‘space’ usage in contemporary pedagogy, we can especially note the following approaches to determining the essence of an education space: system-holistic, mental-emotional, personality-developing, socio-geographical, and local-poster approaches. No less important for the organization of the educational space of the university is also the methodology of the axiological approach, since in it inextricable unity «three interconnected value components: national, social, and personal» (Khaertdinov I.M., 2019).

V.A. Kastornova noted the following aspects as the common ones for these approaches. Undoubtedly, they are systematicity, integrity,

the presence of spatial coordinates, as well as the informational nature of space; the territorial integrity of education and, of course, the personality-developing focus of education (Kastornova, 2014).

When considering the term 'information and education space', many researchers, including V.A. Novikova, focused on the fact that this concept constituents are not only a combination of technical and software tools for collecting, storing, processing and transmitting information, which is natural, if we are talking primarily about the education and information space, but also social, psychological and pedagogical, cultural conditions for implementation of information processes (Novikova, 2009). In her turn, I.M. Osmolovskaya considers this concept rather pointedly implying a space "where information is used for educational purposes" (Osmolovskaya, 2009).

The scientific literature and thesis researches study has allowed us to formulate our idea of the information and education space, by which we mean a combination of system-organized information, technical, educational and methodological support inextricably linked with a person as a subject of education, as well as the sources of information and networks that combine them facilitating management of university organizational activities with the view of social, economic, cultural and psycho-educational conditions for information implementation and information-related processes (Ivanushkina 2015).

As the definition implies, one of the information and education space constituents is an element associated both with information sources (both digital and hard) and distributed databases, software systems, virtual libraries, virtual classrooms, etc., their combining networks, and the technologies that support the process of managing the university organizational activities.

Yet, one more aspect needs to be clarified. Any information comprised in the information and education space is stored there and occupies a certain area of the cultural and social memory. Information in the form of information flows (transmission of information) moves in space and time (storage of information). These flows enable information interaction between subjects, i.e. those who produce, collect, transform and store it in response to their needs, acquiring an emotional-semantic colouring. Therefore, information and education space should be

considered with the view of psychological and pedagogical conditions for information implementation and the related processes. The same subjects simultaneously create and consume an information and education space to achieve their goals, including educational ones. Specific information, analysed and comprehended by the subject, becomes an information product, a domain, a main tool of the information and education space production as a whole. Therefore, this space periodically becomes the result of human activity.

One of the key factors of the information space functioning, which is part of the information and education space, is the legal support of information processes that ensure the life of society, the relationship between various objects within a certain territory, which allows them to operate with information alternatives. This is the core of legal and economic support for the implementation of information processes.

Our definition of the educational information space allows us to consider the organization of an educational process as one of the options for transition from an information society to a knowledge society. Active facilitators in this process become the information and educational space and the educational communities functioning in it and organized on social networks of the Internet.

In this connection let us see what is behind the concepts of 'network' and 'educational communities', and to what extent the issue of their application in the information and education space is substantiated. If we analyse the concept of 'net', it has at least six interpretations from a common thing used for fishing and catching birds, which is made from fibers woven in a grid-like structure where intersecting threads are fixed at equal intervals by knots, to a set of enterprises and individuals located or scattered on some territory and connected by a single system of institutions.

Defining networks, Bruno Latour called them "... not only things themselves or intangible communication systems deployed in the form of a net". He said that they can be understood as the process itself, with the help of which we can investigate a thing revealing the elements necessary for its existence. Addressing the concept of 'net' at a philosophical level, B. Latour argued that it can manifest itself in "a series of signals with which a researcher can register the deployment of the substance

attributes, whether a material object or intangible entity” (Latour, 2013).

Analysing the definitions considered above, we can point out that the communication method based on interlacing and interdependence of various constituents is common to all of them. Complementing the term ‘network’ with the predicate ‘social’, T.A. Romm defines it as “a reality domain or sphere associated with human interactions.” It is an immanent property of both the society and a person, while possessing a common, unified nature (Romm, 2009). Combining ‘social’ and ‘network’ definitions we find that a ‘social network’ can be a communication method based on the interweaving of relationships between people as a result of their interaction.

The possibilities enriched by digital technology in contemporary society dramatically change the features of sociological data collection techniques, which, of course, change the very concept of ‘society’ in sociological theory. A specific nature of collecting and handling statistical data has differentiated an ‘individual’ and ‘society’, and this process forced them to look for options for their unity, an individual’s integration into social communities. In this regard, B. Latour argued that “... combination of, first, the datascares, second, the navigation skills acquired on the screen, and, third, actor-network theory, that has totally redistributed the classical arguments of a society made of individuals. The Web has put an end to an artificial separation of a whole and the parts, an individual and society” (Latour, 2013). In the process of interaction, the concepts of individual and society are combined through a ‘social network’ in a completely natural way, thus forming a new sociocultural phenomenon. According to M.A. Loginova, who has studied social processes in a social interaction, “... society thinks in the broadest sense, while the network manifests itself in two incarnations.” As noted by the author, the first one manifests itself as a special, well-defined way of interacting in a given network form of organization in a specific area of life: economics, politics, etc. (e.g. a network enterprise, a network organization, or a network cottage). The second, in a narrower, specific sense, is as a private process of network interaction via the Internet. Since the social network reflects the influence of interaction via the Internet on various spheres of life, the nature of social relations in contemporary society is also changing (Loginova, 2011).

In this regard, we can distinguish two approaches to understanding the essence of the concept of ‘social networks’. The first one can be defined as a method of constructing social reality with allocation of macro-, meso- and micro-levels.

In the book ‘The Web of Life’, Fritjof Capra considers a number of theories driven by the idea of the evolution of living systems and their organization according to the network principle. The author concludes that “... the pattern of organization determines the systems essential characteristics.” For example, it defines whether a system is living or nonliving. Autopoiesis, the pattern of organization of living systems, is thus a defining characteristic of life in an emergent paradigm. In order to find out whether this entity (a crystal, a virus, a cell or the Earth) belongs to living systems, we need to determine one thing: whether its pattern of organization is an autopoietic network: if so, we deal with a living system; otherwise, the system is non-living” (Capra, 2003). If a system is ‘living’, the concepts of ‘social network’ and ‘society’ are compared at the macro level, i.e. at the level of theoretical philosophical abstractions. Following Maturana and Varela’s idea, Capra has revealed a common content of the processes occurring in living systems and has compared them using the term ‘auto-poet’ suggesting that the network organization technique is the basis of any living systems, including social ones. Therefore, a distinctive feature of a network, according to F. Capra is “the tendency to state far from equilibrium, but at the same time they tend for self-organization.” The scientist also noted that all living systems are grouped based on the network principle. In the future, this was reflected both in philosophy and ecology, e.g. the study of food webs. It was defined, as pointed out by M.A. Loginova (Loginova, 2011), that any network is characterised by non-linearity in all directions. For example, a sent message can travel in a circular orbit, thus forming a feedback loop. The concept of feedback is closely related to a network pattern. This means that networks can contain feedback loops gaining a self-adjustment ability. The Boomerang Principle forces a ‘living’ message source correct its mistakes, thus regulating and organizing itself. Actually, the idea of self-organization initially emerged as a central concept of the system-oriented paradigm, which is closely connected with networks (Loginova, 2011). F. Capra’s idea analysis makes it possible to conceive of a network as the basis for organization of living systems and connect it with the concepts of ‘pattern’ and ‘self-organization’ revealing therewith a network principle of the existence of

living systems with non-linear dependence in all directions.

In order to describe the meso-level of constructing social reality and define its key features, scientists use the term 'network' as a metaphor. Applying the conception of social structure to explain the essence of the concept of 'interconnection' of relations, which facilitate organization of social actions, scientists began to use the metaphors 'fabric' and 'web' gradually bringing a 'social network' metaphor to the foreground.

Considering the conceptions of network simulation, L.K. Gabysheva noted that in sociology they talk about networks "both as a phenomenon that exists in reality and a toolkit for analysing this reality. The first approach addresses the content and structure of connections between the actors, while the second one focuses on the network configuration evaluating the strength and frequency of the connections" (Gabysheva, 2002). In her thesis research, S.K. Tamazyan has described a social network as "a community of individuals connected by common interests, a common goal or having other reasons for direct communication with each other" (Tamazyan, 2014). We see that here communication acts as a key element irrespective of the technical component, as was presented in the studies of L.K. Gabysheva (Gabysheva, 2002).

Another approach to understanding social networks is communicated by A.M. Leshchenko, who correlate them in the "present day sociocultural situation with communication media, since the audience of the Internet resources are quite comparable, and at other times exceed the audience of many newspapers, broadcasting station and television channels" (Leshchenko, 2011).

At a micro level, the use of social networks can be represented as a way of interacting in a given network form of organization in a specific area of life: economics, politics, etc. (e.g. a network enterprise, various network organizations, such as vertical networks, intermarket networks, consumer networks, business networks networks, etc.). As with this approach, the social network reveals the influence of means of communication on various spheres of life, this massively affects both social relations in contemporary society and a participant in these relations. It can be noted that a distinctive feature of a network personality is, according to M.A. Loginova, a high concentration of

information flows per person and the specifics of its redistribution within the social network. In this case, the author suggests that "depending on the intensity of social networking, i.e. the information rate, we can distinguish a personality type, which is determined by a consciousness level, i.e. a demand for a higher rate of changes" (Loginova, 2011). From this position and the author's point of view, the coincidence of human needs for relevant information and for its translation puts the social network into action prompting a person to take active actions. We agree with the author's justification for this fact. Since a person, as a social being, in most cases experiences an irresistible need to share and also to get new knowledge, information, but with this selecting a more accessible, and sometimes the simplest interpersonal channel. And, if we assume, according to M.A. Loginova, that the basic need of a person in the theory of social contract is a feeling of safety, "a network personality is dominated by the need for self-expression and self-affirmation" (Loginova, 2011).

M. Castells points out that institutes of society cannot control actual powers of society - the power of communication, the power of financial flows." According to M. Castells, "... people are gaining experience in a physical and virtual space, while the authorities are more focused on controlling virtual networks where money and power are circulating" (Castells, 2011). Yet, with all its 'freedoms', decentralization, non-hierarchy, there are certain patterns that makes a network a network.

A.A. Bukaeva offers yet another understanding of 'social networks' as a platform, on-line service or a website designed to build, reflect and organize social relationships, with social graphs being their visualization (Bukaeva, 2015).

Introduction of social networks in the learning process will allow solving specific pedagogical problems (e.g. checking knowledge and ensuring flexible interaction between a teacher and students), as well as boosting involvement in the process of obtaining knowledge, student cognitive activity. Best practices of social networks application in education have been already in place, both in Russia and abroad; the term 'eLearning 2.0' is related to the use of social services to solve educational problems in a virtual environment. In this country, there is only one similar example of a social educational network - the All-Russian public school network "Diary.ru" (2010 Runet Prize winner). The site has a unique content: a timetable, an electronic

diary, an electronic grade record book, a list of homework tasks, a general fiction library, a multimedia library, a selection of dictionaries and an on-line translator service. Also, this electronic resource supports an instant messaging option, distance learning, progress monitoring, and analytics of compliance with school curricula.

The study of options for using social networks in education has revitalized the theory of social learning, which proceeds from the fact that people learn most effectively when they interact with other students in a specific topic or subject. The focus is on people-to-people interaction rather than the module content in educational activities.

Methodology

Our study of genesis of methodological approaches to the definition of the information and education space concept draws on a complex of justified methods known in research application to provide reliable data: a hindsight analysis of domestic and foreign experience in the use of state-of-the-art IT solutions; theoretical methods (comparison, analogy, analysis, synthesis, abstraction, concretion, classification, instructional design); traditional pedagogical techniques (observation, questionnaire survey, testing, examination, self-assessment, methods of diagnosis and study of educational activities products, etc.); empirical methods, an educational experiment; programmed learning techniques (presentation of information, implementation of programmed tasks, control and correction); interactive methods (remote, mobile, video method, computer design and simulation based on case, .NET and COM-technologies); forecasting methods: intuitive methods (individual and collective expert assessment); methods of statistical data processing; methods for study and generalization of contemporary pedagogical experience in the development of a personal information literacy in education. In addition, the following diagnostic practices were used: 'Diagnostics of information needs', 'Reflection and self-assessment of an educational and cognitive activity in an online environment'; 'Assessment of the ability to self-learning and self-development'; 'Assessment of a level of individual competitiveness'; an author's test on the topics of various course units within a university curriculum; author's criteria-oriented tests.

Results and discusión

Analysis and systematization of the above methodological approaches and diagnostic research methods allowed us to organize experimental work on improvement of the university information and education environment and application of the fundamental ideas and forms of work described in this paper in the teaching of various course units within a university curriculum. The experimental work was organized by this paper authors on the basis of 5 universities of the Russian Federation (Ulyanovsk State University, Ulyanovsk State Pedagogical University, Samara National Research University, Kuban State Technological University and Ulyanovsk State Agrarian University named after P.A. Stolypin). The system of university information and education environment we have developed has an integrated, interdisciplinary, universal character, while allowing us to take into account the specifics of university training in various degree programs and education specializations. The study involved 320 students of humanitarian, technical, and economic specializations. By the end of the pedagogical experiment, of these, the number of students with a high level of information needs increased from 40% to 86%, which is explained, on the one hand, by rapid changes in the global information space, and, on the other hand, by the interest revealed in the young generation to study its features and capabilities. Almost all participating universities revealed positive dynamics in the formation of reflection and self-assessment of educational and cognitive activities in the Internet among students (in general, over 77% of students demonstrated a high level of formation of this quality, which is 35% higher than at the beginning of the experiment), as well in the assessment of the ability to self-learning and self-development (by the end of the experiment, students with a high level of this quality totalled over 50% against the same indicator that was 20% less at the start of the experiment). We have also come to the conclusion that the development of all personal qualities under study, which was dramatically influenced by the improvement of the university information and education environment through the application of the complex of methodological approaches described herein, is directly related to increasing the competitiveness of the student's personality in a present day social medium.

Conclusion

The use of social learning networks and other media is becoming commonplace in Russian universities (Ivanushkina, 2018). In order to develop media and educational communication in the 'teacher – student', 'student – teacher', 'student – student' systems, educational and extracurricular activities adopt various online platforms (e.g. Moodle, Edmodo, etc.) that excite interest both as a means of replicating information via state-of-the-art gadgets and a means of creating a global sociocultural environment that allows faculty members to develop and implement distance learning courses, conduct video conferences, online seminars and invite colleagues and students from other universities, various specialists and experts to participate in them. Educational institutions have the opportunity to create closed corporate networks of students and teachers, for example, Facebook-based ones, allowing them to be in constant contact with colleagues and other students from different branches and universities, publish their organization's news, exchange opinions on research issues under study, etc.

We have surveyed the students about their preferred types of academic work: reproductive or productive (research, creative). Twice more often they chose productive types of work. Their rating is as follows: self instruction and conduct of psychological testing, exercises, self conduct of experiments, experiments, laboratory research, self creation of web sites, projects (individual and collective), discussion of the media products they created on the Edmodo educational platform, work in pairs for mutual control, group discussions and other productive verbal forms of learning. The survey also focused on in-class and out-of-class application of IT technology, social educational networks, means of identifying the students individual qualities and their connection with future professional engagement.

On the one hand, training through application of IT technology and social educational networks has an attractive novelty, and on the other hand, it offers convenience and the possibility of putting it into practice. Moreover, there is an increase in student motivation, a desire to work on the basis of a new educational electronic platform; it creates an opportunity is to employ the gained knowledge and skills in practice during participation in volunteer events, Olympiads and other events held as part of a taught course. Additional information distilled from the Internet resources and related to

educational activities, hobbies, a new field of knowledge unfamiliar to students, can be used to solve problems related to future professional engagement and when working on projects, articles, reports, preparing for seminars, exams, and speaking at conferences. By implementing technologies of self-presentation, students gain experience in public speaking expanding their possibilities of self-expression by using their own media products in a media-oriented educational environment.

Social networks are a powerful and effective tool that offers a wide range of capabilities and unique positive features with the options that should be used in contemporary education (Goryachev, 2014). This predictive potential of improving the information and education space is associated with the development of training tools and resources integrated with popular social networks and services. Further development of the information and education space based on the use of the world wide web resources and the achievements of scientific-and-technological advances is a mechanism that positively affects the process of retrofitting the domestic education, its accessibility, democracy, the quality of academic and applied training of future bachelors and masters for their professional engagement.

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