Digital environment as effective pedagogical tool of socialization in the context of modern education

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Abstract. Today, the modern educational paradigm is based on the organization of new forms of social education and training with new digital technologies introduction. In the article, the author proceeds from the main conceptual provisions of domestic and foreign theories, which allow us to assert that the pedagogically justified use of the digital environment, aimed at solving the problems of social education, can contribute to the adaptation of students to life in the modern information society.

The purpose of the study is to identify the problems and perspectives of the students' positive socialization formation under the conditions of modern education based on the theoretical analysis of domestic and English-speaking (the USA and Canada) scientific works that reflect the content of the digital technologies implementation.

This article attempts to: reveal the essence of the digital environment concept as a pedagogical tool for students' positive socialization, where the digital environment represents an element of the information and educational environment, within which socialization is revealed, where the cyberpace social process potential comprehension is carried out; determine the social and educational effects, the main conceptual provisions of the digital environment use as the pedagogical tool for the students' positive socialization; based on the analysis, expand knowledge in the context of the theoretical and methodological aspects for domestic science in view of the research of scientific works in modern English-speaking countries (the USA, Canada).

1 Introduction

Today, the Russian educational system plays a distinctive role in the life of modern society focused on the value dominants of the digital era. Recently, a new "trend" is acquiring a sharp contrast in the development of education – digitalization.

On the one hand, the digital space is assessed as a powerful means of searching and obtaining information, an effective tool for communication, interaction in virtual space, and on the other hand, a mechanism that significantly affects the formation of behavioral stereotypes among the younger generation, a system of social worldview. The ongoing

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transformations in the society contribute to the modification of the mechanisms of personality formation, forms of relationships and socio-cultural practices.

One of the significant tasks faced by the system of modern education is the organization of new forms of social education and management of the information component of the socialization process of the younger generation.

Recently, the emphasis on the formation of information awareness among the students has become one of the fundamental areas of activity in the educational system. "Strategy of education development in the Russian Federation for the period up to 2025", approved on May 29, 2015, conditions the need of expanding the content of educational opportunities of information resources, and also updates the research on the digital environment impact on the mental health of the younger generation, their abilities in intellectual activity, the degree of emotional and personal development, potential in the process of successful socialization.

The federal project "Digital Educational Environment" (2018) is another, no less significant document in the direction of the educational space digitalization process implementation. The fundamental basis of the project is the creation by 2024 of safe, accessible educational space based on digitalization, as a result of which the students must master a high level of digital skills to improve the quality of education.

However, it is important to note that the first attempts to digitize schooling began in 2001. The beginning of the schools digitalization is associated with the adoption of the federal target program called "Development of a Unified Educational Information Environment", which is aimed to create a digital educational environment providing the following: - integrity and uniformity of the educational space in Russia; - improvement of the education quality level in all regions of Russia; - preservation, development and effective use of the scientific and pedagogical potential of the country; - creation of conditions for gradual transition to a new level of education based on the information technology; - creation of conditions for the provision of educational services to the Russian-speaking population abroad. Moreover, the task to introduce new methods of teaching and upbringing, educational technologies was set by the Decree of the President of the Russian Federation V.V. Putin dated May 7, 2018, No. 204.

In this regard, of course, there are no issues of the significance and necessity to carry out the researches related to content, role and place of the digital environment in view of the younger generation socialization and development, the appeal to the experience of foreign countries in this research pool; the relevance of the problem under consideration today is beyond any doubt. And, in our opinion, the appeal to the experience of the researchers from English-speaking countries (the USA, Canada) in the field of digital technologies use in the educational space in the context of a tool for positive socialization of students is very useful.

Speaking about the modern researches related to the considered subject of the representatives of the English-speaking scientific and professional community (American and Canadian), they are much more deeply involved in the study of the role, perspective opportunities, shortcomings of information and communication technologies in the educational process, while covering not only the theoretical block, but practical as well, at the same time, interpreting the socializing role of the digital environment in modern education, which has not been found in the researches of the Russian scientists.

The purpose of the study consists in the identification of the problems and perspectives of the students positive socialization formation under the conditions of modern education on the basis of theoretical analysis of domestic and English-speaking (the USA and Canada) scientific works, reflecting the content of the digital technologies introduction.

2 Materials and Methods

The materials of our research were as follows: scientific works of domestic and foreign scientists, reflecting the content on the digital environment resources introduction revealing its socializing potential in the educational paradigm.

The following main methods were used: synthesis, interpretation, extraction and systematization of essential information, comparison and generalization of information, sociocultural analysis, theoretical analysis of the scientific research literature pool in the focus of the problem under consideration.

3 Results

In the result of the theoretical analysis of the literary sources on the research subject, we managed to find that the concept of “information and communication technologies” is being replaced by the concept of “digital environment”, meaning a single information field that integrates a wide content, both information technology and the virtual world, taking into account the potential opportunities of the digital environment.

In our study, the interpretation of the “digital environment” concept is reduced to the following content: it is a certain artificial environment, which is a continuous sequence of computer and network technologies that determine the organization of relations between the objects by broadcasting programs in the form of signals over the networks and telecommunication channels.

We judge from the basic conceptual provisions of the theory, which make it possible to assert that the pedagogically grounded use of the digital environment, aimed at solving the problems of social education, can help the students adapting to life in modern information society, fostering the personality traits necessary for life in it.

Recently, there has been a general growing interest in the digital technologies in education in pedagogics. Various definitions and models have emerged and are being dynamically developed only over the past few decades within the current situation as per the digital resources use in the educational system.

We found that in modern pedagogical science there are being made the attempts of studying the educational capabilities of the digital technologies, namely in the works of M.V. Voropaev [1], V.A. Pleshakov [2,3], but working directly with children we see that the information technologies still provide spontaneous influence on a child, both positive and negative.

It is important to note that today, due to insufficient knowledge of the virtual space socializing capabilities, the lack of psychological and pedagogical work, measures to increase the positive socialization effectiveness in the information space by taking into account the principles of digital environment use as a pedagogical condition and a means of achieving social and educational effects, it can cause addiction due to the low level of the individual cyber-socialization culture. Thus, the digital environment can also be a de-socializing condition.

Speaking about the essence of “socialization” concept, it is widely studied in the various fields of knowledge (philosophy, sociology, pedagogics, psychology) and has a large number of interpretations due to the multi-layered and ambiguous environment. The conceptual basis of the pedagogical theory has many ideological ideas that reflect different views.

The term “socialization” was initially applied to a person by the American sociologist F. Giddings in 1887, who meant the adaptation of an individual to the society requirements, which creates conditions for successful social functioning. Addressing the problem of socialization began long before the spread of this term. The concept of “socialization”

began to be studied most intensively in the last third of the 19th century by French scientist in the field of sociology E. Durkheim.

Nevertheless, many scientific studies that reveal the essence of the concept of socialization refer to the personal experience and still adhere to the system of views that has a combined joint idea described above.

Thus, at the present stage, a number of problems related to the establishment of the place and role of the digital environment in the context of the student’s socialization can be identified in Russian science: firstly, the digital environment acts as a trend of modern socialization revealing potential opportunities; secondly, digital technologies as an effective tool in the upbringing process; and thirdly, the significance and potential of digital technologies in the context of socialization.

In domestic practice, the problem of introducing and using the digital environment in the educational context is much larger. This is due to the lack of such a full-scale support for teachers from education, as abroad.

The concept of social education in the process of socialization proposed by the famous Russian scientist A.V. Mudrik [5, 6], which is reduced to the fact that social education is an integral component of the complex of the areas of mastering social experience, receiving social education and helping an individual route is the basic of our research.

The analysis of foreign studies from the point of view of socialization concept by A.V. Mudrik, as well as the considered theoretical foundations on the research subject in the focus of digital environment use, made it possible to identify not only the social and educational effects of the digital environment in the educational process, but also the actual problematic points.

At the same time, the effects of the digital environment identified by the foreign and domestic scientists on the basis of theoretical and empirical research in view of social and educational content are systematized and reflected in the table.

Table 1. Digital environment effects in the context of social and educational content of educational process based on the domestic and foreign research analysis

Effects marked by domestic scientists	Effects marked by foreign scientists
Communicative competence	Development of communication skills
Ability to organize activities	Effective organization of personal work
Skills and abilities of independent work Creative thinking	Ability to act on established principles Development of creative capabilities
Motivation	Motivation and involvement
Mastering of new forms of identification and interaction in society	Collaboration skills
Digital competence	Digital competence
Formation of a person of modern information age	Formation of a person of the information society, preparing it for modern life
Ability to work freely with information	Development of information competencies
Ability to make alternative decisions	Ability to make optimal decisions
Mastering of new forms of social self-determination Reduction of social and pedagogical de-adaptation of a child under the conditions	Development of critical thinking Increase of self-confidence; full inclusion of a child with disabilities in

of the information environment	the educational process
Research skills and abilities	Actualization of the student’s potential; development of self-esteem and assessment of own competencies; solving social problems

It should be noted that the analysis of domestic and foreign studies in the context of highlighting the social and educational effects of the digital environment in the educational process suggests that some effects are distinguished as certain interacting (transverse) competencies in English-language pedagogy (USA, Canada) (cooperation skills; development of critical thinking; information competence; development of creative abilities, etc.), others are reflected as the basic competencies of the educational basis of the secondary education in Russia. In general, the analysis of the reviewed foreign study results shows the positive dynamics of the digital environment use in education. It should be assumed that it is due to the existence of relatively stable programs for the transverse competencies development in English-speaking countries.

Transversal competences are completely different from disciplinary competences, they cover knowledge, skills and communication abilities, the development of which is carried out not within one specific discipline, but throughout the entire educational process. They are used in various situations, in this regard, the term “transversal”, i.e. intersecting, appeared.

At this stage, it is important to highlight the advantages of digital technologies use in the educational process, determined by the scientists of the English-speaking countries [7, 8], which include: - increased motivation; - high involvement; - increase of the responsibility level; - strengthening the ability to solve difficulties; - development of transversal competencies.

We managed to identify the principles of using the digital environment as a pedagogical condition for the positive socialization of students in English-speaking schools (the USA, Canada), which are the essential requirements for the implementation of pedagogical activities with the digital environment use aimed at solving the social education problems, expanding the social experience and providing the individual student support. Conceptual provisions are based on accounting the social and educational effects and problematic aspects of digital environment use in the framework of the analysis of the foreign research results:

- provisions of the technological spectrum (scientific and technical assistance, service);
- operational and methodological dominants (continuous education of teachers; actual recording of the digital environment introducing skill, individual approach);
- socially developing conceptual foundations (partnership of the teaching team; stable motivation of students; teamwork; increased responsibility of students for the results of their own education).

Various means of achieving the social and educational effects of the digital environment are used in English-speaking countries to implement the positive socialization of students at schools (the “inverted lesson” method, applications Zaption, Adobe Voice, Explain everything, Notability, SimpleNote, Flashcard, Quick Math, DuoLingo, Animation en volume pro, PuppetPals, Pixton, Vialogues [9], digital working space, Pear Deck, Padlet, Kahoot, social networks, messengers and email), acting as a favorable environment for positive socialization in modern school, due to the use of which social and educational effects arise.

So, the social and educational potential of the digital environment is important for domestic science and practice.

In this regard, we found that the digital environment contributes to the personality development in many aspects within the framework of social experience: - communicative competence; - mastering various forms of social self-determination and interaction in the society's circle of interaction; - understanding of socially important values at the level of consciousness; - mastering the ability to formulate emerging tasks, reflecting on the final products.

A deep and comprehensive consideration of various aspects of the theory and practice of the reviewed subject allows us to highlight the digital environment possibilities in the context of the social education tasks implementation: - increase of the efficiency level of social and pedagogical support and adaptation of students; - formation of the skills to implement and coordinate one's own activities.

Along with this, within the issue related to the implementation of the individual assistance tasks, the digital environment has the following potential contributing to the following: - increasing the efficiency level of the self-knowledge, self-affirmation, self-determination, self-realization processes; - stimulating the student's creative functional energy; - development of creative imagination; - increasing the motivation for learning activities; - formation of a person capable of functioning according to the new "trends" - a person of the "digital age"; - teaching the research skills and abilities; - mastering a set of skills to freely interact with information content in a practical aspect.

Thus, based on the theoretical literature analysis, the essence of the digital environment concept as a pedagogical tool for the students' positive socialization is revealed, where the digital environment is an element of the information and educational environment, a means of communication and development of new social practices, in addition, it has a multi-level focus, within which the socializing potential is revealed, where the understanding of the cyberspace social processes is carried out. At the same time, our study has determined the socio-educational effects, main conceptual provisions (principles) of using the digital environment as the pedagogical tool for students' positive socialization, while the knowledge was largely enriched in view of the theoretical and methodological aspects for domestic science within the research of scientific works reflecting the means and principles of organizing positive socialization by the resources of the digital environment in modern English-speaking countries (the USA, Canada).

4 Discussion

The concept of "information and communication technologies" is studied by the domestic researchers in several directions: first, in the focus of the personality socialization [10, 11, 12, 13]; second, in the aspect of problems range increase within the social education process implementation in modern transforming society [14, 15, 16]; thirdly, as one of the most important means in the organization of teaching and educational work [17, 18].

The results obtained in the course of modern dissertation research, in which the main emphasis was placed on the study of the socialization segment by various means of the digital environment, are very significant for our study: - by means of the Internet in the aspect of disclosing the socio-pedagogical potential of the Internet as a factor of positive socialization (N.V. Ugol'kov); problems and risks of ICT (information and communication technologies) use by the younger generation in the field of information security (A.V. Zaporozhets, A.V. Fedorov, R.M. Yusupov); ICT implementation as the means of increasing the level of professional competence among teachers and students, schoolchildren (N.A. Goncharova, S.N. Isakova, I.G. Lukina, I.V. Uskov); identification of ICT significance and role within the learning process improvement, formation of educational motivation, information and communication technologies in teaching (K.N. Bosikova, Yu.S. Laktionova, E.G. Neumoina).

At the same time, we managed to find the lack of research in the direction of the digital environment use as the means of socialization, as the technical means for the educational process arrangement and for personal competencies development. The main emphasis of the scientific research is placed on the study of the theoretical block, without focusing on the practical segment of the considered problem.

As for the domestic pedagogics, the problem of the social environment influence on the personality is most deeply analyzed in the scientific school of A.V. Mudrik, revealing the relationship between the socialization and education.

In our opinion, the analysis of the digital environment use, from the standpoint of the socialization subject-subject concept in the works of A.V. Mudrik, most specifically actualizes the value of the individual in social conditions, thereby creating the prerequisites for understanding the digital environment influence on the valuables, values and experience of the individual in the educational process, opens up the opportunities for considering the digital environment use in conditions of relatively socially controlled socialization.

It is relevant to focus on the Russian scientists' research, who were engaged in identifying the specifics, problems and perspectives for the education development in the English-speaking countries (the USA, Canada) [19, 20]. In their scientific works the authors focus on the specifics of teacher training, organization of the educational process and multiculturalism of education, while not touching on the segment of socialization in view of the digital environment use.

Thus, the Russian authors of scientific and research field focus on the study of the specific features of the teacher education, the organization of the educational process and multicultural education, the development of methods of information and communication resources use in the process of the students social experience organization, as well as the work in the field of media education. At the same time, the issue of socially controlled socialization is made actual in a small number of scientific works. In addition, we found that there are no modern practical studies on the impact of the digital environment use in general in the educational process, highlighting its socializing capabilities.

In this regard, the appeal to the English-speaking teachers experience and their inclusion in the scientific turnover of domestic science can be productive.

Of course, the United States takes the leading position in mastering and introducing the new information technologies into the educational system. We managed to find that one of the basic didactic attitudes the American scientists single out is programmed teaching. One of its authors is B. Skinner, who claims that it is necessary to consider the educational process as "an extremely formalized and detailed object, according to which it is necessary to draw up the algorithms for the sequential implementation of programmed prescriptions" [21].

A slightly different interpretation of programmed teaching was proposed by the American educator N. Crowder [22]. According to his conclusions, not only the general procedure of educational material mastering, but also "the personal training programs of a branched programmed learning algorithm" plays a special role. In a number of scientific works "TutorText" N. Crowder offers an interactive method of communication with a student, taking into account his personal abilities. In 1960, N. Crowder developed the AutoTutor computer-based training program, which reflected the conceptual framework formulated in his scientific works.

A complete computer software ("ACE Project") was prepared for the general education institutions of the United States. During its implementation the primary school graduates master basic computer skills; students receive sufficient training for working on the applied programs, are able to use a text editor in the classroom in all sections of the program; students master telecommunication systems.

Today, the process of schools computerization in the United States is comprehensive. The authorities create conditions for teachers, providing them with the personal computers for work to master the latest technologies and effective tools for their implementation with students. The school is widely equipped with various equipment, educational program pools. Computer studies are held from the 1st grade, so the students of 10-12 years old already become the confident users.

Speaking about the research of foreign scientists in the field of information and communication technologies application in the educational process, the research of the representatives of the Canadian scientific and professional community is very interesting. Since, recently, Canada has been systematically developing the educational sector and improving it, responding to the constantly emerging changes in the society and the world in a timely manner. It is important to note that modern foreign researchers M. Russell [23], G. J. Keengwe [24], L. Johnson & C. D. Maddux C [25], P. Bishop, J. Downes [26], M. Warschauer [27], K. A. Suhr, D. A. Hernandez [28], K. Shapley, D. Sheehan [29], D. Wrimes [30] consider in detail the issues of the information and communication technologies place and role in the educational process not only in theoretical, but also practical education as an integral part of the educational institution functioning at the present stage, but also focus on the revealing the socializing potential of digital environment in the modern educational process.

At the same time, some researchers [31] consider digital technologies to be the main advantage in the modern world, since they allow implementing “a form of education that takes into account the whole world in its globality, and leads the student to establish a relationship between knowledge, school and the world, and making the student responsible against his knowledge” in words of R. Thibert [32].

Thus, the theoretical analysis of research on the digital environment use in the English-speaking educational system and the identification of its role, functional significance in the process of students socialization showed that (Collin, A. Fievez, A. Guyomar, D. Hamon, T. Karsenti, M. Linard, H. Papadoudi, S. Pouts-Lajus, M. Romero, J. Tardif, R. Thibert and etc.): digital environment is an effective pedagogical tool for educational process arrangement in the environment (electronic newspapers, textbooks for classroom activities, Internet forums for teachers, etc.) in order to create connections between the subjects of the educational process; potential in the context of using the pedagogical methods adaptation of a new educational situation in solving the educational problems (implementation of the project method, case method, etc.); digital environment is effective for the development of competencies, abilities, social attitudes.

At the same time, the obtained conclusions created an opportunity to clarify the concept presented in our study and specify the digital environment content as a pedagogical tool for the positive socialization of students – an integral component of modern pedagogical system that ensures the implementation of organizational, technical and socially-developing functions to achieve the social and educational effects contributing to the solution of the students’ social education problems.

5 Conclusions

The results of our analysis of domestic and foreign scientific literature on the subject of the digital environment as a socializing phenomenon allow us drawing some particular conclusions:

1. Today, the interpretation of the “information and communication technologies” concept by domestic and foreign representatives of the scientific community has similarities and is interpreted as a set of technical means and digital systems based on them. At the same time, the modern scientific discourse reveals a deeper concept – a digital

environment, the semantic load of which is reduced to the understanding of the artificial environment representing a continuous sequence of computer and network technologies that organizes relations between the objects of the society through the transmission of programs in the form of signals over the networks and telecommunications channels.

The structural components of the digital environment are the information technologies; cyberspace; telecommunication / Internet lines; computing systems; network software protocols, including the Internet, platform software and interface programs.

2. The analysis of domestic scientific literature reflecting the issues of socialization and the information and communication technologies use in the educational process had an impact in highlighting the significant issues reflecting the role and place of the digital environment in the individual's development and socialization.

The study of the "information and communication technologies" phenomenon by domestic researchers is carried out in several directions: first, in view of the socialization of the individual; second, in the aspect of increasing the range of problems within the process of social education in a modern transforming society; thirdly, as one of the most important means in teaching and educational work organization.

3. A number of problems can be identified related to the establishment of the digital environment place and role in the context of the student's socialization at the present stage in Russian science: firstly, the digital environment acts as a trend of modern socialization, revealing potential opportunities; secondly, digital technologies as an effective tool in the upbringing process; and thirdly, the significance and potential of digital technologies in the context of socialization.

In domestic practice, the problem of introducing and using the digital environment in the educational context is much larger. This is due to the lack of such a full-scale support for teachers from education, as abroad.

4. Based on the results of an analytical study of the socialization ideas in the focus of domestic and foreign science, the term socialization is interpreted as a process that allows a person adopting and integrating into the social environment. At the same time, positive socialization, in our opinion, is the creation of conditions for human development in the course of the interaction of social, group and individual subjects in order to adapt and integrate into the modern society.

5. Peculiarities of the digital environment use in the process of positive socialization of students in English-speaking schools are based on the following principles: - provisions of the technological spectrum (scientific and technical assistance, service); - operational and methodological dominants (continuous education of teachers; actual recording of the digital environment introducing skill, individual approach); - socially developing conceptual foundations (partnership of the teaching team; stable motivation of students; teamwork; increased responsibility of students for the results of their own education).

6. Foreign researchers highlight the benefits of digital technologies use in the educational process: - increased motivation; - high involvement; - increase of the responsibility level; - strengthening the ability to solve difficulties; - development of transversal competencies.

7. The implementation of the digital environment as a pedagogical tool for the students' positive socialization is the organization of pedagogical activities using the digital environment having multi-level focus, within which the socializing potential is revealed for effective functioning in modern conditions.

Social and educational effects are the basic dominants in the process of the digital environment use as the pedagogical tool for the positive socialization of students in modern education.

The essential features of these effects consist in the formation of social attitudes, certain traits of character, skills, abilities and competencies as a result of the digital environment

use in the implementation of activities in an individual route, increasing the range of social experience and solving the problems of social education at the present stage.

Thus, in the result of our research we received the material, the analysis of which allowed stating that the specification of the digital environment conceptual basis as a pedagogical tool playing a significant role in the process of students socialization in the context of the modern educational paradigm creates conditions for enriching the theory of social, pedagogical education by detailing the terminological concept and expanding the base of scientific provisions with the comparative materials characterizing the process of socialization in the modern information society of English-speaking countries (USA, Canada).

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