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DEVELOPMENT OF STUDENTS RESEARCH POTENTIAL: "FROM CULTURAL ACCEPTANCE TO CULTURAL CREATION"

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Abstract

The object of the study is theoretically and experimentally foundation the organization of high school student’s advancement within the cultural genesis principle which is being implemented in the Russian education. The complex of complementary methods includes general theoretical methods such as logical and deductive analysis of philosophical, psychological and pedagogical sources, structural and functional analysis, generalization, systematization, classification, theoretical modeling; empirical methods such as experiment (establishing, modeling, forming), observation, expert evaluation, computer testing; methods of mathematical statistics such as correlation analysis (analysis of the total number of correlations, calculation of the average statistical weight of one relationship. It is revealed an essential contradiction between the need to prepare students for culturally creative cognitive activity and the lack of didactic support for this process. The establishing experiment resulted in the following: 6.3% of high school students have got adaptive level of research capability; 61.6% of high school students under test have got reproductive level, heuristic level is for 31.6%. As for creative level it is peculiar only for 0.5% of high school students under test. The problems connected with the organization of high school students advancement through learning situations from cultural appropriation to cultural creativity are as following: (1) how to use texts in organization of high school students research; (2) how to overcome the domination of the organization of high school students cognitive activity in the form of appropriation; (3) how high school students are capable to master research methods;(4) how to use digital technologies within the established goals.

Keywords: Research capability, teaching high school students, cultural genesis principle, cultural creativeness

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1. Introduction

Globalization processes, innovative economy development, information technologies implementation in all spheres of human life result in necessity of high professional mobility of personality. The identification and development of personal characteristics of high school students that ensure successful solution of research tasks consider relevant for the Russian school education. Besides regulatory documents presenting strategies for the development of education in Russia show that the importance of the development of personal research qualities of high school students in education is increasing.

The relevance of forming didactic foundations for the development of high school students research capability is closely connected with the restructuring of education, reflecting the processes of humanization and the advance in education to the anthropological paradigm, which confirming the self-value of man and his freedom, creative and spiritual existence, Musina et al. (2018) determine as the social conditioning of the process of changing the goals of education in the historical and pedagogical process. The transition to the new Federal State Educational Standards (FSES) provides opportunities for the spread of activity (e.g. project-based, research-based etc.) teaching methods and promotes the dominance of learning through research. Learning through appropriation means the progress of a high school student from perception and understanding of information to its active processing in his consciousness and to the transformation of knowledge into his/her personal asset. Learning through research assumes that the high school student singles out a personally significant subject of cognition in conditions of balancing on the edge of knowledge-unknowledge, and then uses it to find out the unknown realizing a new step in personal development.

High school student cognitive activity through research starts processes of creative self-development. According to Seliverstova's (2014) classification of cognitive experience of high school students and its characteristic the high school student acts as a subject of attitude in cognition and in this process he/she not only self-manages the discovery of new things, but also develops subjective-selective attitude to the received new things and to the very process of cognition.

Contemporary foreign research within the framework of humanistic social constructivism focus their attention on self-regulated learning, based on motivation of a high school student to obtain knowladgement (Matzat & Vrieling, 2016; Yu et al., 2020), cooperative learning (Darling-Hammond et al., 2019; Yarbro et al., 2016).

In accordance with the humanistic cognitive constructivism theories the high school students acquisition of new knowledge are closely connected with their motivation, conditions and ways of obtaining new knowledge, with metacognitive skills which allow consciously manage their own processes of knowledge acquisition.

2. Problem Statement

In the given study, personality's research capability through research is identified as a leading result of school education. Proceeding from the fact that research is a fundamental function of a living organism, Makotrova (2019) considers it as a dynamic personal resource conditioned by natural inclinations, abilities, experience of knowledge in learning and life activities, which represents the integrative unity of a high

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school student's orientation to knowledge of himself/herself, other people and the world; sensual and visual images and knowledge about the universe, wildlife, society and man; ways of environment cognition. When solving research tasks its implementation provides personal self-determination, restructuring the direction and content of cognitive activity and creative self-development. The highlighted structural and functional components, criteria and levels of development of high school student research capability indicate that research capability is a systemic personal formation. Structural and functional components of high school student research capability represent it in statics and dynamics. The structural components of a high school students research capability form a tonus block, in which cognitive-valuable and motivational-semantic components are defined, and a resource block, which includes cultural-activity and reflexive-activity components. Motivational and semantic component of a high school student research capability is represented by values-goals, and values-relations. Cognitive-values component is represented by values-means, values-knowledge and values-qualities. The cultural-activity component of high school student research capabilities manifests itself in the cognitive and communicative universal learning activities that are included in FSES. The reflexive-activity component is directed to students' reflexive skills formation, which consist of personal and regulative universal learning activities. High school students solving various research tasks allowed us to see connections between the content of their structural components of high school student research capability and a number of its functions such as moral, scientific and worldview, communicative, information, cognitive, creative and regulative, which are reveal the process side of high school student research capability.

To determine the levels of advance of high school student research capability and design and then evaluate the measure of its implementation, we determined criteria and their indicators. As for research motivation it is characterized by the intensity of cognitive need, awareness of the value of research and enthusiasm for research. As for technological readiness for research it is defined by mastery of the conceptual apparatus of the issue under study, the ability to use methods of scientific knowledge and compliance with the rules of scientific organization of high school student’s activity. Research style of thinking is noticeable by comprehension of the structural elements of the elements of research actions also following the norms and requirements of scientific style of thinking, generalization of subject and operational research results. Creative activity of personality can be represented by independence in transformation of ideas and connections between them, awareness in history of science and its up-to-date problems and scientific communication. Indicators of research motivation (intensity of cognitive need, awareness of the value of research, enthusiasm for research), indicators of creative activity of personality (awareness of the history of science and its up-to-date problems, scientific communication), the indicator of technological readiness for research (mastery of the conceptual apparatus of the issue under study) characterize the tonus block of high school students research capability. The remaining indicators characterize the resource component of high school students’ research capability.

Such indicators of high school student research capabilities as intensity of cognitive need, awareness of the value of research, enthusiasm for research correspond to its motivational and semantic component. Mastery of the conceptual apparatus of the issue under study, the ability to use methods of scientific knowledge and compliance with the rules of scientific organization correlate with its cognitive-valuable component. The cultural-and-active component of the high school student research capability is manifested

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in such indicators as the use of methods of scientific cognition, following the rules of scientific organization of high school student's activity, independence in the transformation of ideas and connections between them. The reflexive-and-active component is revealed in the characteristics of scientific style of thinking namely: in comprehension of the structural elements of his/her own research actions, following the standards and requirements of scientific style of thinking, summarizing the subject and operational research results.

Measurement of the indicators of the high school student research capability according to 4-point scale with the help of expert assessment and self-assessment allowed us to determine the adaptive, reproductive, heuristic and creative levels of development. Using the results of observations, questionnaires for high school students (N = 2059), the data of correlation analysis gave us an opportunity to characterize the levels of development of their research capability. The establishing experiment resulted in the following: 6.3% of high school students have got adaptive level of research capability; 61.6% of high school students under test have got reproductive level, heuristic level is for 31.6%. As for creative level it is peculiar only for 0.5% of high school students under test.

Danilyuk (2008) approves that for better understanding the ways of organizing the advance of high school students in cognition, ensuring the effectiveness of the development of their research capability we paid attention to the cultural genesis principle laid down in the Russian education. Realization of this principle is in a high school student comprehension of native culture within the context of world culture, providing successive "living through" its stages, forming a system of integrated lessons-events, recreating in an educational dialogue by joint efforts of subject teachers working in each class, an integral cultural text, suitable for perception and understanding of a high school student Besides it is connected with revealing high school students' research creativity aimed at creating something new (e.g. new action, new activity, new knowledge, new values, new relationships, new himself/herself, new in other people. More than that it is directed to creating his/her own individual culture, the mechanism of which is a dialogue, which takes place in the mind of an individual researcher, reflecting the interlinking of processes occurring in different "spaces" such as scientific and social ones. Certainly, it is to introduce the different cultural values of society and civilization as a whole, to different kinds of culture (moral, physical, and social) to the values of the culture of the individual researcher, learning to read the values of culture, understanding their meaning, recreating them after the author.

It is known that the learning process in didactics is considered as a chain of learning situations. Each of them presents the content of education, special position of a subject, his/her corresponding experience and ways of cognitive activity. In other words, it includes a learning task, business communication, teacher's educational actions, high school students' actions which characterize the performance process of learning task and self-processes inside creative high school student self-advance such as self-determination, self-awareness, self-organization, self-control, self-regulation, self-education, self-realization.

We have put forward the idea of cultural creating process in education within the culture genesis principle laid down in the Russian education. The idea of cultural creating process is realized when high school students advance from cultural appropriation to cultural creating in accordance with the alternation law and periodicity of different types of activity. As a result of this activity all components of high school students research capability are being maximally actualized in succession. In accordance with the idea of

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cultural creating process from the previous learning situations high school students move to the next learning situation, so that the basis for solving new tasks is laid. All these provide increasing the level of research resource for solving more and more complex research tasks.

Let us briefly present the characteristics of cultural forms of cognitive activity of high school students and corresponding features of learning situations of high school student's research capability, which are considered as cultural creative situations In the opinion of Makotrova (2019) they help students to accept values of cognition, identify and implement their own needs and opportunities and balance his/her own "Me", cognize reality and himself, others and the world from the position of cultural creativity.

Ushanova (2003) considered that getting the new in cognitive activity through cultural appropriation defined as a process of enculturation the initial awareness of an individual with new norms and styles of behavior peculiar to the culture of getting new knowledge as mastering culture and its samples in the form of problems rather than ready-made answers.

In a learning cultural appropriation situation a high school student realizes the limitations of his/her existing knowledge and ways of activity and in order to find the limits of their applicability, comprehends the gap between the goal of activity and the available means of achieving it, selects or composes a number of questions, tasks, problems that are of personal interest to him/her, studies available texts, develops new learning activities, ways and techniques of working with information, problem solving and new technologies. As a result, he/she develops ideas about the object under study, develops an appreciative attitude toward it and master the knowledge, methods of action and technology necessary for further research.

High school student cultural use in our vision is an active process of application of knowledge, skills and technologies when mastering the culture of research. In learning situations of cultural use, the high school student is able to master new methodological knowledge, new ways, technologies of research that require the skills to obtain new knowledge such as systematizing, codifying, classifying the accumulated facts, conducting an experiment, analyzing theories, concepts, etc. Such kind of learning situation is a stepping-stone to interpreting, reflecting on what has already been accumulated in the cognitive experience of a high school student.

High school student cultural interpretation in cognitive activity is a search process of methods and styles of interpretation of both known socio-cultural phenomena and originally created products of cognition for giving clear meaning to cognized culture on the base of texts, for comprehension of culture through texts, for detection of latent, earlier unconscious structures. In learning situations of cultural interpretation, a high school student works with texts as products of cognitive activity. He/she tries to master methods, styles and techniques of interpretation, formulates new questions, problems and new hypotheses. Because of interpretive activity through research, the student gives meaning to the cognized culture, obtains new interpretive knowledge and masters the ways, styles, and techniques of interpretation. The emergence of new meanings, questions, and hypotheses in such a learning situation causes the transition to the next learning situation, in which the process of searching for non-standard solutions is carried out.

High school student cultural creation is a cultural form of cognitive activity and the highest stage of personal culture genesis as Sterzinsky (2013) wrote. In our vision, we consider it as creation of a cognitive product based on transformation of existing ideas using new methodological approaches, techniques,

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theoretical and practical knowledge and mastered actions. The learning situation of cultural creation is the final and at the same time intermediate stage in the cultural creative cycle of learning situations for development of high school students research capability. In a cultural creating learning situation high school students take an active part in the process of creating a new cognitive product.

Thus, proceeding from the fact that culture acts as an open multidimensional system of problem-creative tasks, the solving of which involves various cognitive strategies, each of the learning situations can be referred to this or that cultural form of knowledge namely: cultural appropriation, cultural use, cultural interpretation, cultural creation.

When implementing cultural genesis in teaching high school students it was found out a number of contradictions, highlighting the problems of developing the high school student's research capability. According to Fomicheva's (2004) research for many teachers, the main thing is the logic of presenting the material rather than the problem way of presenting it. None of the teachers use an individual system of evaluation and 20% of teachers do not use problem-based learning.

There is one more opposition in the current educational process, figuratively presented at the beginning of the 20th century by Gessen (1995) as the prevalence of situations in which the centrifugal forces of the external cultural content prevail over the centripetal forces of the individual as the result of which a person loses himself, begins to think in other people's thoughts.

Our observations of the learning process have shown that irregularity of the sequence of stages for personal cultural genesis resulted in a number of negative things. There are: such as negative dynamics of value orientations of high school students, decrease in the ability to read and comprehend the text, disturbance of speech development, emergence of "clip" thinking, screen and Internet addiction, decrease in concentration on an activity, speech perception, distraction, etc. The above mentioned problems of the teaching practice as well as experimental results allowed us to substantiate a group of challenges connected with the organization of high school students development with the help of learning situations from cultural appropriation to cultural creation within the cultural genesis of contemporary education namely: using texts in organizing high school students research activity, overcoming the dominant organization of high school students cognitive activity in the form of appropriation, mastering research methods and using digital technologies. The existence of the problem of how to use texts in the organization of high school students research activity is in the typical formulation of the purpose of studying the texts offered which presents not the goal of obtaining personally significant new, but a positive assessment, acquaintance with cognitive information.

The problem of overcoming the dominance of the organization of cognitive activity of high school students through appropriation is in the low level of orientation of high school students to use the obtained knowledge for studying the new things, explain the unusual facts encountered as well as the low level of readiness of high school students to connect the known things with unknown ones, to set hypotheses, develop ways of finding the new things, evaluate the obtained solution, their method of finding an answer to the question independently.

Solving the problem of high school students' mastering research methods requires overcoming the use of a narrow range of methods of cognition studied by them, ensuring a close relationship between the personally meaningful content for high school students and the methods they master for searching the new

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things. The problem of culturally creative use of digital technologies are characterized by the low level of their use by high school students in setting and solving research tasks, in learning new research methods and in discussing the results of research activities.

The identified problems of development of high school students' research capability within the cultural creation idea allowed us to formulate the following essential contradiction: between the need to prepare high school students for cultural and creative cognitive activity and the lack of didactic support for this process. The revealed objective contradiction made it possible to formulate the research problem namely: What are the didactic foundations for the development of high school students' research capability within the cultural genesis trend implemented in the Russian education?

3. Research Questions

The search in solving the problem are to answer the following questions namely. What is the development of high school students' research capability within the idea of cultural creativity? What components of research capability are primarily realized in learning situations corresponding to different cultural forms of cognition? How is the effectiveness of the development of high school research capability connected with the sequence of learning situations created at each level of complexity of high school student's cognitive activity?

4. Purpose of the Study

The research objective is theoretically and experimentally foundation of the organization of high school students' knowledge progress within the cultural genesis principle implemented in the Russian education.

5. Research Methods

The choice of methods was determined by the objectives, methodology and logic of research. The complex of complementary methods includes general theoretical methods such as logical and deductive analysis of philosophical, psychological and pedagogical sources, structural and functional analysis, generalization, systematization, classification, theoretical modeling; empirical methods such as experiment (establishing, modeling, forming), observation, expert evaluation, computer testing; methods of mathematical statistics such as correlation analysis (analysis of the total number of correlations, calculation of the average statistical weight of one relationship).

6. Findings

In the process of modeling and forming experiments it was revealed that the development of high school students research capability in the considered sequence of learning situations is characterized by a complex dialectics of continuity and discontinuity, increase of autonomy, development of high school students' abilities to manage their behavior, set and solve complex problems, find ways out of crisis situations and improve ways of self-regulation. According to the results of observations and measurements

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of manifestations of high school students research capability in the course of learning tasks we concluded that in the learning situation of cultural appropriation the tonus component of high school student research capability was manifested to the maximum level. As for the learning situation of cultural use it was noticeable technological readiness for research. In the learning situation of cultural interpreting, it was evident scientific style of thinking. In the learning situation of cultural creation, it was noted creative activity.

To characterize the dialectics of advancement to the highest result of development of high school students research capability we described the dynamics of their manifestations at each level of its development on the basis of the method of construction of correlation groups at different levels of statistical significance ($p = 0.001$; $p = 0.01$; $p = 0.02$; $p = 0.05$; $p = 0.1$). It allows to reveal significant correlation relations in the components of its structure. Determination of statistical weight coefficients of each of the indicators of the high school students research capabilities at the level of statistical significance $p = 0.05$ made it possible to identify for each level of its development the most sensitive to internal and external influences indicators-signs (Table 1). It is found out that at the adaptive level of development of high school students research capability the tonus component is realized to the maximum. At the reproductive level, the technological readiness for research grows to the maximum. At the heuristic level we observe scientific style of thinking. At the creative level, the creative activity is evident.

Table 1. Statistical characteristics of the indicators of high school students research capabilities in the experimental classes at the levels of its development for statistical significance $p = 0.05$ ($N = 15$)

Statistical characteristics of levels of HSSRC	Motivation to research activity			Scientific style of thinking			Technological readiness to research activity			Creativeness		
Indicator number	1	2	3	4	5	6	7	8	9	10	11	12
Adaptive level of development of high school students research capabilities												
Number of correlations	2	2	3	2	2	1	0	0	0	2	1	3
Indicator weight	5	9	9	4	6	3	0	0	0	8	5	11
Criterium weight		23			13			0			24	
Reproductive level of development of high school students research capabilities												
Number of correlations	7	7	1	6	5	3	7	3	3	4	0	2
Indicator weight	22	19	5	20	20	7	20	6	7	5	0	5
Criterium weight		46			47			33			10	
Heuristic level of development of high school students research capabilities												
Number of correlations	9	8	2	8	7	8	6	9	5	6	4	4
Indicator weight	32	15	6	32	23	27	21	25	9	17	5	10
Criterium weight		53			82			55			32	
Creative level of development of high school students research capabilities												
Number of correlations	10	10	6	9	9	8	6	9	8	9	10	4
Indicator weight	33	30	15	37	31	24	15	19	22	32	34	14
Criterium weight		78			92			56			80	

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Values of the indicators:

- 1 - level of intensity of research need;
- 2 - level of awareness of research value;
- 3 - level of passion for research;
- 4 - level of comprehension of structural elements of research actions;
- 5 - level of following the norms and requirements of scientific style of thinking;
- 6 - level of generalization of subject and operational research results;
- 7 - level of possession of conceptual system of the investigated question;
- 8 - level of skills in use of methods of scientific knowledge;
- 9 - level of observance of rules of scientific organization of high school students work;
- 10 - level of independence in transformation of ideas and connections between them;
- 11 - level of awareness with history of science and its up-to-date problems;
- 12 - level of scientific communication.

As can be seen each of the considered levels of development of high school student's research capability not only reflects dialectics of their advancement in cognition from cultural appropriation to cultural creating, but also represents the formed cognitive experience in which certain cognitive strategies are dominants. The sequence of maximal manifestations of high school students' research capability components in learning situations at each level of complexity of their cultural creative cognitive activity correlates with the same sequence in the dynamics of its development levels. The obtained results made it possible to establish a connection between the efficiency of high school students' research capability development and high school student's advancement from cultural appropriation to cultural creation at each level of cognitive activity complexity and identified its indicators which are most clearly manifested in each of the cognitive strategies. The most significant connections between the indicators of development of high school students' research capability at each level reflect the didactic grounds for ensuring successful process of high school students' research capability development in certain learning situations, transition to a higher level of its development. Activation of the few involved in learning situations and strengthening the role of its more developed indicators resulted in the emergence of new connections, including those that disappeared at the previous stage of advancement in cognition.

To sum up we can conclude that the development of high school students research capability should be considered as a culture creation process, as a process of continuous emergence and dialectical self-renewal of its component personal characteristics, implemented in a sequence of learning situations and ensuring the advancement in knowledge at different levels of complexity from cultural appropriation to cultural creation. The organization of advancement of high school student's research capability in cognition from cultural appropriation to cultural creation allows teachers to consistently and maximally actualize all components of their research capability. As a result, it is noticeable the increasing of the high school students research resource for solving more and more complicated research tasks. Disturbances in teaching practice of the sequence of learning situations demonstrating the growth of high school students' level of cultural creativity explain the registration of facts testifying to the fact that high school students with rather high level of knowledge and skills cannot creatively analyze the problem and solve it. Vice versa, high

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school students with low level of knowledge on a certain topic are able to put forward non-standard ideas and demonstrate creative research techniques.

7. Conclusion

The establishing experiment resulted in the following: 6.3% of high school students have adaptive level of research capability; 61.6% of high school students under test have reproductive level, heuristic level is for 31.6%. As for creative level it is peculiar only for 0.5% of high school students under test. The problems connected with the organization of high school students' advancement through learning situations from cultural appropriation to cultural creativity are as following: (1) how to use texts in organization of high school students research; (2) how to overcome the domination of the organization of high school students cognitive activity in the form of appropriation; (3) how high school students are capable to master research methods;(4) how to use digital technologies within the established goals.

Analysis of literary sources and experimental data confirm the existence of essential contradiction in the development of the high school students namely: between the need to prepare high school students for cultural creative cognitive activity and the lack of didactic support of this process. Realization of the idea of cultural creation in the development of high school students' research capability means presentation of a sequence of educational tasks namely: cultural appropriation, cultural use, cultural interpreting, cultural creation in accordance with the hierarchy of cultural forms of cognition. The sequence of learning situations is built in accordance with the idea of cultural creation. The essence of this process is generation rather than appropriation of culture. That make sense for the process of development of high school students' research capability reflecting the process of their personal cultural genesis.

It has been established that in the learning situation of cultural appropriation the tonus component of the high school students' research capability is manifested to the maximum extent. As for the learning situation of cultural use, the technological readiness for research is evident. In the learning situation of cultural interpreting scientific style of thinking is specific. In the learning situation of cultural creation, creative activity of the personality is noticeable.

It is found out the didactic regularity in the process of experimental work namely: the effectiveness of the

development of high school student's research capability are provided by the maximum realization of its components when they advance to cultural creation in the sequence of learning situations created at each level of cognitive activity complexity.

Using the cultural genesis principle in education allowed us to comprehend the development of high school student's research capability as an advancement in knowledge from cultural appropriation to cultural creation and expand didactic knowledge about personality-centered learning. It is a chance to outline new ways of development of high school students' research capability in learning and implement them in the conditions of didactic experiment. More than that consideration of the development of high school students research capability based on cultural genesis principle in education will increase the level of methodological culture of teachers and students.

The prospect of further scientific searches could be an interdisciplinary study of the specifics of development of high school students' research capability in the dialectical cycle of cultural creation and determination of the factors hindering the advancement of high school students' research capability.

Understanding the logic of the development of high school students' research capability makes it possible to comprehend the state of available opportunities and the dynamics of a high school student's self-expression as a subject of research. This makes it possible to build interconnections between the lessons and extracurricular activities by means of learning situations and assess the level of realization of his/her research capabilities in the learning process being carried out.

References

Danilyuk, A. Y. (2008). The principle of cultural genesis in education. *Pedagogy*, 10, 3-8.

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2019). Implications for Educational Practice of the Science of Learning and Development. *Applied Developmental Science*, 1-44.

Fomicheva, I. G. (2004). *Philosophy of education: some approaches to the problem.* Publishing house of Siberian Branch of Russian Academy of Sciences.

Gessen, S. I. (1995). Fundamentals of Pedagogy. Introduction to Applied Philosophy. *School-Press*, 448.

Makotrova, G. V. (2019). *Didactic basis for the development of Student' Research capability: anthropological context: monograph.* Publishing house "Belgorod".

Matzat, U., & Vrieling, E. M. (2016). Self-Regulated Learning and Social Media-A "Natural Alliance"? Evidence on Students' Self-Regulation of Learning, Social Media Use, and Student-Teacher Relationship. *Learning*, *Media and Technology*, *41*(1), 73-99.

Musina, V. E., Peresypkin, A. P., Makotrova, G. V., Shumakova, I. A., & Shekhovskaya, N. L. (2018). The problem of setting educational goals: from Socrates to B. Bloom. *Amazonia Investiga*, *7*(14), 119-127.

Seliverstova, E. N. (2014). Cognitive activity of students within the FSES implementation: from Appropriation to research: materiales of the Eighth International extramural scientific and practical conference devoted to the memory of I.Y. Lerner "Development of pedagogical representations about the essence and effectiveness of learning in the context of standardization processes of education". *VIT-print*, 122-136.

Sterzinsky, V. P. (2013). Education as cultural creativity. *Pedagogical science and education, 1*(2), 19-23.

Ushanova, I. A. (2003). Prospects of Acculturation Theory Development in the Globalized World. *Bulletin of Novgorod University*, *24*, 65-70.

Yarbro, J., McKnight, K., Elliott, S., Kurz, A., & Wardlow, L. (2016). Digital Instructional Strategies and Their Role in Classroom Learning. *Journal of Research on Technology in Education, 48*, 274-289.

Yu, X., Wang, C. X., & Spector, J. M. (2020). Factors that impact social networking in online self-regulated learning activities. *Education Technology Research Devevelopment*, *68*, 3077-3095.