Theoretical Image of Education: Network Reflection

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Abstract – **The author carries out a discourse about the potential application of the concept of network scientific approach, its conceptual and hardware tools in the context of the theorization of the social reality phenomenon - "education". Theoretical understanding of the phenomenon of education in view of its transdisciplinarity, and poly-contextuality has no single theoretical interpretation. This suggests that there is an urgent need to carry out the construction of theoretical ideas about social phenomena in a single concept of "theoretical image", giving it conceptual and logical characteristics and taking as one of the potentially possible representation format. The starting point of the discourse carried out in this work is the fact that heuristic possibilities of classical methodologies (normative, interpretative) are insufficient in the conditions of changing social reality. The author postulates that the 20th century marked the emergence of innovations in social reality and as a consequence of modifications in traditional social structures and social institutions. The author refers to the network theme by changing the intentions of education as an element of social reality. It is hypothesized that the epistemological potential of the network approach as a strategic optics of the study of social reality phenomena will allow identifying and understanding the remaining outside the research field essential characteristics, properties of social phenomenon, in particular its manifest and latent sides. The discourse contains a mention of the directions formed in the context of the network paradigm and found their application in the scientific research field of social and humanitarian studies.**

Keywords – image, theoretical model, construct, visual design

I. INTRODUCTION

The science of post-classical society has one of the most pronounced aspects – the theorization of the phenomena of social reality. Scientists and researchers, in particular P. Berger, T. Lukman [1], proved that society as an objective social reality is constructed in the process of its cognition and the elements included in it. Education is an integral part of social reality, and as a consequence it undergoes reconstruction as it changes. Social reality, namely its polivarietiveness and instability, forces researchers to look for solutions in its study of the design through its theorization.

The phenomenon of education, that seems clear enough to understand at first glance, having a centuries-old historical basis of the results of scientific reflections, in fact is not so. Because of its meta-theoretic context, scientific interpretive multi-disciplinary space of definitions of the studied phenomenon is very huge. Analysis of existing scientific works in which the authors turn to the theorization of knowledge of scientific objects, in particular with respect to our multi-level and multifunctional object – "education", showed the following.

In view of the transdisciplinary nature of the concept of "education", the problem of finding the methodological foundations of its knowledge and the formation of its theoretical understanding has a fairly deep history of its genesis and a significant coverage of approaches to its theoretical reflection. A considerable number of references to the phenomenon "education" demonstrates great interest among scientists including teachers, psychologists, cultural scientists, sociologists, economists, political scientists and of course philosophers. This in turn pushes us to the meta-disciplinary understanding of theoretical and methodological concepts of the theorization of education.

The development trajectories of the "meta-theoretic" context of education has its own incomparable form and is determined by the object of study as a phenomenon directly studied by us, and the conceptual and essential aspects which characterize it. The complexity of the problem of explicating the concept of "education" is also the fact that the 20th century, gave rise to various scientific schools, the focus of which was education as an object of study and, as a result, these scientific disciplines claimed their interpretation of this phenomenon.

Analysis of front image discourse in the Humanities showed that in the scientific community there is a general fragmentation of meta-knowledge about the educational phenomenon, which hinders the integration of methodological socio-philosophical approaches, practices in the representation of knowledge about the object of knowledge. A huge layer of works was written by representatives based on scientific approaches, which either opposed and denied the ideology of each other as normative and interpretative, or acquired a convergence of views on the phenomenon under study, in the case of normative-interpretative approach.

Philosophical problems of education in their anthropocentric discourse (interpretative paradigm) were reflected in the works of both representatives of classical foreign philosophy and outstanding Russian philosophers and teachers (S.I. Hessen, P.F. Kapterev, N.I. Pirogov, K.D. Ushinsky, B.G. Grigoryan, etc.) [2-6]. A significant contribution to pedagogical and philosophical anthropology was made by such scientists as (E.P. Belozertsev, B.S. Gershunsky, E.N. Gusinsky, O.V. Dolzhenko, A.C. Zapesotsky, N.P. Pishchulin V.V. Popov, V. Rozin, I. Savitsky, P.G. Schedrovitsky, T.D. Skudnova, etc. [7-16].

The study of the phenomenon of education through the combined optics of normative-interpretative approach brought about the discussion of the results of scientific knowledge in the development of educational technologies, forms of education (open, distance, continuous), the content of the educational

process as a new educational reality. These reflections are presented in the works of Russian researchers B. Bim-Bad, V.G. Domracheva et al. [17, 18].

A remarkable group of works consists of studies that are made in a special subject area - the philosophy of education, focusing on the analysis of the methodological foundations of the search for a new educational paradigm and the description of its qualitative characteristics (B.S. Gershunsky, E.N. Gusinsky, V.V. Davydov et al.). At the same time, their division into at least three directions is quite clearly traced. One of them is represented by works built on the principle of "improvement" of the existing system, the other is focused on a complete change of the foundations of education as a system (including by borrowing Western models).

The third one is based on the preservation of Russian educational traditions in balance with the innovative component that allows the paradigm transformation of Russian education on its own basis.

This leads us to the idea to stand on the "meta-position" of the researcher" of the phenomenon of education and to comprehend it in the first approximation with "large strokes". The starting point of our discourse is the thesis proclaiming that in the current situation of the presence of an array of heterogeneous interpretations of scientific knowledge, it is necessary to seek to generalize the concept of construction of social phenomena and the construction of theoretical generalizations instead of studying specific local problems. Let us fix the vector of our research direction in the context of integration of heuristic possibilities of scientific approaches and the procedure of constructing a social phenomenon in the following form: all arising in the research field theoretical assumptions, and concepts regarding the studied phenomenon are reduced to its reflexive interpretation under a single format "theoretical image".

The concept of "theoretical image"[1] in the context of this work is mentioned by us as one of the possible variants of the representation formats of the social phenomenon.

As part of our research, the concept of "theoretical image" becomes the main topic. We resort to it in order to set ourselves the task of forming a unified "representative" of theoretical knowledge and using it to reflect on the theoretical knowledge of the phenomenon of education. Unified "representative", which in our case is the concept of the "theoretical image of education" in our opinion, is a format that can be applied to the studied phenomenon of education to display its entire essence in a holistic projection.

Without going into the framework of this discourse into its conceptual essence, let us confine ourselves to the thesis that the construction of a social phenomenon in the form of a "theoretical image" [19] is correlated with research optics in the prism of which it is carried out. Based on this, we will bring to the forefront of our scientific research the search and

understanding of the possibilities of new scientific paradigms suitable for the cognition of social phenomena.

One relevant aspect of the theorization is the search for a relevant, productive, promising theoretical and methodological approach to understanding the true nature of the phenomenon of education, due to the "opening" of its latent sides, new characteristics and properties. The state of social philosophy in the field of education cognition can be characterized by lacunar insufficiency of conventional meta-theory, the presence of opposing socio-philosophical paradigmatic approaches, schools and trends. In order to clarify the essence of the education phenomenon in this paper, we put forward the hypothesis that the appeal to the network approach will provide insights and concepts about other interpretations of the studied social phenomenon, expressed in the identification of its new properties and relationships.

II. METHODS AND MATERIALS

This work is aimed at finding out 'large strokes': what properties, connections of network approach as new research strategy allow to reveal the sides of the phenomenon "education" which remained not covered by classical scientific approaches for the purpose of its theorization in the context of modern social network reality. The understanding of the network paradigm and the application of its epistemological potential to research in the field of social sciences and humanities is currently gaining momentum. The appeal to a relatively new methodological approach, which is becoming increasingly active in the field of scientific knowledge, in our opinion is correlated with the new social reality and its changes.

Network paradigm (network approach) is one of the self-sufficient and is applied in the field of humanities, for example, sociology, political science. Network research strategy is based on three methodological directions: analysis of social networks, actor-network theory and relational sociology. In the scientific works known to us, there are mainly the results of scientists who use the optics of the network approach in the study of such social phenomena as: political networks, research of psychological and medical diseases (epidemics), management of economic systems. The main focus of the application of the network paradigm in these studies is related to the interpretation of social society as a network structure, the analysis of interaction in social networks of different levels, the essence of Internet technologies, etc.

However, despite the wide range of existing scientific works carried out in the field of knowledge of the concept of "education", its essential characteristics, technologies, concepts, outside the scope of theoretical reflection there is a number of important aspects relating to the key problem of clarifying the heuristic potential of the network approach in the problems of theorizing social phenomena, in our case, education. In other words, there is no integrating metatheory of socio-philosophical foundations of the study of this phenomenon, which correlates with social reality, with the

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[1] Interested researchers will have the opportunity to refer to a number of works operating and mentioning this concept (Romm M.V., Romm T.A., "Construction of theoretical images of social phenomena," Novosibirsk State University Bulletin. Series: Philosophy, vol. 8, iss. 2, pp. 32-36, 2010; Ilyin S.E., "The role of universities in student socialization: experience in constructing a theoretical image," Prospects of Science, No. 9 (72), pp. 34-39, 2015; etc.)

essential characteristics of the modern world, which allows to identify those sides of the cognizable object hidden from other previously used classical methodological theories, to provide a holistic account of socio-cultural, economic, political and psychological factors and influences on the statics and dynamics of education.

III. RESULTS

The network approach, in our opinion, allows to achieve a research and methodological balance on the basis of formation of a metaparadigmatic integral approach, overcoming the disciplinary focus of the existing methodological optics on the knowledge of the object under study, as well as the shortcomings of general scientific, special approaches and synthesizing the advantages of these optics. We do not know about the application of the concept of network approach and its epistemological potential in the field of theorization of knowledge of the phenomenon of 'education' as an object of research, and we do not mention it in the studied scientific sources and databases of scientific certification. This fact suggests that the research optics of the network paradigm was not considered as the leading one in the study of the phenomenon of 'education' and attempts to theorize it, and remained outside the scientific vision of scientists. From this point of view, it is necessary to study and analyze the possibility of using the potential of the network approach in the construction of a conceptual theoretical representation of the phenomenon under study.

The analysis showed that the 20th century gave rise to social phenomena, the essence of which became difficult to comprehend from the standpoint of the classical traditions of scientific approaches. The time has come to search for a new strategic cognitive optics, the potential of which could fit into a new format of society, "society of network structures". The body of academic reflections which operates the "network theme" began to grow and grow interdisciplinary research. On the one hand, the growing interest in the so-called network approach has generated an array of scientific papers in sociology, economics and other socio-humanitarian fields. The network approach is understood as a scientific approach based on the use of the "network" construct, with all its ideological concepts.

The network approach traditionally includes three areas (analysis of social networks (social network analysis), relational sociology (relational sociology), actor-network theory (actor-network theory)) application and research, which are found in the works of leading foreign and domestic researchers of the network topics: J. Lo, B. Latura [20], M. Granovetter, V.S. Vakhstein, G.V. Gradoselskaya [21], D.V. Maltseva [22].

By integrating the conceptual and hardware tools of the network approach, its productive ideology of describing and studying social relations (both at the micro-and micro-level), we construct a research algorithm for constructing a social phenomenon.

The theoretical reflection of the "education" phenomenon in the network concept is carried out as follows. At the first stage, we define the main categories of construction of the studied phenomenon as a network structure. Education in the network context will be formally identified as a social network. In our study, the social network is understood as a complex of social nodes (actors) that are connected by mono - or polyvariant relations.

The concept of actor, as shown by the analysis of open sources, is far from established. In this regard, we concretize in the framework of our work, the actor is a social object of living or inanimate nature (individuals, groups, organizations, cities, countries, etc.), characterized by a set of attributes.

The next step is to determine the relationship that is present (or may be terminated, absent) between the actors. The concept of relationship is defined as - contacts, communication, exchange of various resources, activities.

Evaluation of relations can be as quantitative (including binary: present, absent) and qualitative (for example, the force of communication: strong, weak, latent). We cannot but mention that there is still a problem of determining the boundaries of the network, when it is built. The fact that the network is not limited by its ideology, and by this logic, all living on earth can be linked. Then the question arises, how to analyze and explore the "limitless" network? In this regard, the main ways to solve the problem of "limitations" are used:

- based on positions (position-based approach): the network includes members of some organization or those who occupy formally defined positions;

- event-based (event-based approach): the network includes those who participated in certain key events or events for the studied phenomenon (for example, conferences);

- based on relationships (relation-based approach): the search begins by identifying several nodes that appear to be included in the network, and the remaining nodes are added based on the links to the original and added nodes in the previous steps (this approach is often used in the study of egocentric networks).

Expanding our research scenario of constructing the phenomenon of education, we highlight the main elements (actors and connections) involved in the scheme of our social network (Table I).

As the next stage of constructing the theoretical representation, we propose to build a network landscape of the social network of the phenomenon of education, based on the "graph" construct. Generally, a graph is understood as a set of nodes that are connected by edges (in the format of a social graph: nodes – "actors", edges - "connections").

The network landscape of a social network is understood as a set of network elements (actors, connections) united by a certain formalization and clarity, but not having completeness of construction.

TABLE I.   ACTORS AND CONTACTS

No.	Basic elements	Name
1	*Actors*	Student (personality)
		Tutors (Dean's office)
		Teacher
		Training group
		Teaching materials
		Educational organization
		Hardware and software systems
		Regulatory and legislative acts
		Partner organizations
2	*Contacts*	Communication
		Material resources
		Teaching materials
		Regulatory resources
		Human resources
		Technical data

For the purpose of productive analysis in the further study of the social network, the scheme of the network landscape can be divided into segments (fragments). Previously, we have focused on the aspect that the concept of the network has no boundaries; it can only be limited to the researcher, in order to analyze its essential characteristics, relationships.
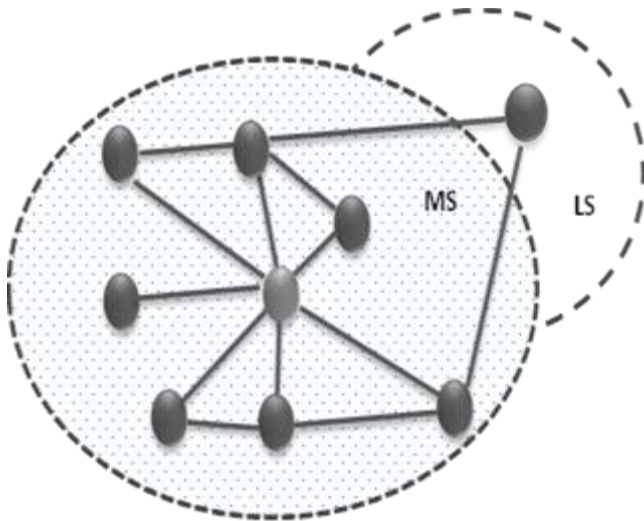

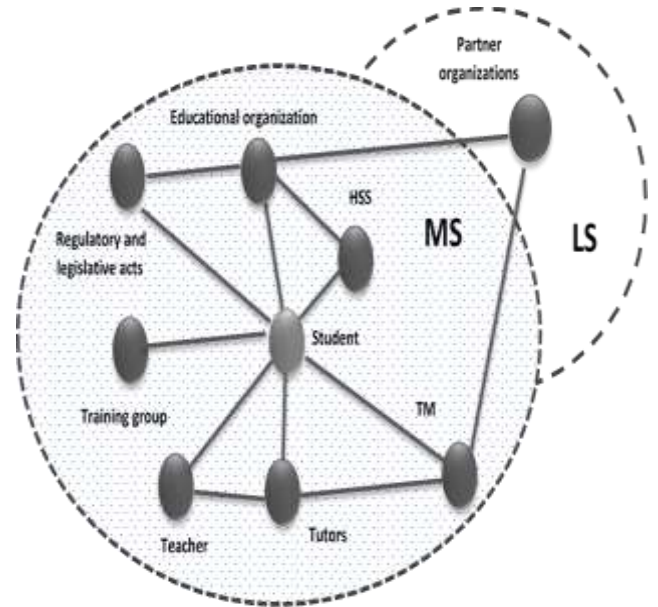Fig. 1. Segments of the Social Network Landscape

Fig. 2. Segments of the Network Landscape of the Social Network "Education"

In this regard, it can be assumed that the network logic of constructing schemes of social phenomena allows you to display not only explicit (manifest interactions), but also hidden (latent interactions), which are either there, but are not reflected in this segment of the network landscape, or potentially may occur.

The presented network diagram shows an example of an explicit (manifest) segment (MS) and a hidden (latent) (LS) segment of a social network (Fig. 1).

In order to further analyze the phenomenon we are studying, and based on the above logic, we will build a network landscape of the social network phenomenon "Education" (Fig. 2).

IV. CONCLUSION

Based on the formation of modern society as a society of "network structures", an appeal to a relatively new methodological approach, which is becoming increasingly active in the field of scientific knowledge, in our opinion, is correlated with the new social reality and changes in it. The network paradigm (network approach) is one of the self-sufficient and applied in the field of sociology and political science. Network research strategy is based on three methodological "whales": analysis of social networks, actor-network theory and relational sociology.

In turn, the methodological outline of the network paradigm will reveal and comprehend, in our opinion, research gaps in the knowledge of the phenomenon of post-non-classical education. It allows to achieve research and methodological balance on the basis of the formation of metaparadigmal integral approach, overcoming the disciplinary orientation of the existing methodological optics on the knowledge of the object under study, as well as the shortcomings of General scientific, special approaches and synthesizing the advantages of these optics.

We do not know about the application of the concept of the network approach and its potential for the theorization of knowledge of post-non-classical education as an object of study, in the studied scientific sources and databases of scientific certification are not mentioned.

This fact suggests that the research optics of the network paradigm was not considered as popular in the study of post-non-classical education and attempts to theorize, and remained outside the scientific vision of scientists. From this point of view, a more in-depth study and analysis of the possibility of using the potential of the network approach in the construction of a conceptual image of modern education focused on meeting the interests of society is required.

In turn, the methodological outline of the network paradigm will reveal and comprehend, in our opinion, research gaps in the knowledge of the phenomenon of post-non-classical education. It allows to achieve research and methodological balance on the basis of the formation of metaparadigmal integral approach, overcoming the disciplinary orientation of the existing methodological optics on the knowledge of the object under study, as well as the shortcomings of General scientific, special approaches and synthesizing the advantages of these optics.

In the first approximation, the study in this paper showed that the network approach, in the context of its heuristic potential, allows identifying latent interactions of the parties involved in the format of the network landscape, to discover new formats of interaction, which may be subject to further research analysis: forms, effects produced by them, goals of understanding communicative interactions.

Based on this postulate, we believe that the hypothesis we have put forward earlier has a place to be confirmed and reserves the right to continue further study of the network approach and its potential, in order to dive into its research concept as one of the strategic research optics of the study of social phenomena.

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