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**METHODOLOGICAL BASES OF NETWORK ANALYSIS
COVERING PROBLEMS OF INDIVIDUAL SOCIAL
ADAPTATION**

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Abstract

Current trends in modernization of present-day higher education determine the demand for the development of network processes and practices in ensuring the key tasks of training initiative and competent specialists. Herewith, it is necessary to develop scientifically based ways and means of social adaptation of an individual under the conditions of evolving network reality of education. The present paper covers social, theoretical and practical relevance of the problem. The authors describe the existing approaches to its solution in an interdisciplinary context. Special attention is paid to the peculiarities of the network approach and aspects of its development in line with creating conditions for the individual's social adaptation in education. The purpose of the article is to substantiate the theoretical and methodological foundations of the heuristic potential of the network approach to the problems of social adaptation and individual's viability in higher education. Current approaches to the analysis and improvement of individuals' social adaptation strategies under current conditions of network practices demonstrate an insufficient level of methodological problem understanding. The study of the methodological foundations of the network problems of individual social adaptation in education is based on the general methodological principle of the normative and interpretive analysis, which allows integrating the data of modern social and humanitarian knowledge in the construction of theoretical images of social phenomena. The article describes the novelty and the theoretical significance of the problem.

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Keywords: Education, social, network, approach, adaptation, methodology.



1. Introduction

Current trends in the modernization of present-day higher education determine the need for the development of network processes and practices in ensuring the key tasks for training initiative and competent specialists. At the same time, the current practice of analyzing and improving social adaptation strategies and the viability of an individual under network processes demonstrates an insufficient level of their methodological understanding, namely: the absence of interdisciplinary theorizations aimed at developing abstract, speculative concepts of effective social adaptation and increasing the level of individual viability in education network practices; weak theoretical elaboration of existing and emerging network practices in education aimed at enhancing the processes of improving the viability and adaptability of students and young professionals under the conditions of modern economy; the lack of conceptual and categorical means of cognizing the mechanisms of successful network functioning in the development of higher education, which leads to superficial conclusions and results that hamper their application by the higher education system.

2. Problem Statement

Changes in social and cultural processes that have occurred in recent years have led to significant transformations of the institutional, procedural and value aspects of individual's social adaptation. One of the consequences of these changes was the alteration of national education social order, which is aimed at:

- producing an innovative product in the form of advanced knowledge and/or new technologies of various directions (social, economic, educational, etc.), which turns to be impossible without a detailed study and development of modern network processes and practices in higher education;
- creating a set of conditions aimed at the formation and development of an ecosystem for start-ups, including acquisition of the qualities necessary for effective social adaptation and enhancing the vitality of an individual in a dynamic social and professional environment;
- implementing the modern competence model (creativity, communication, cooperation and critical thinking), aimed at the realization of intellectual and creative potential of an individual in conditions of uncertainty.

As a result, this requires redirecting higher professional education from being classical monocentric to the relevant networked and underlines the problem of a radical change in the psychological and pedagogical assistance and support of professionalization, which increase the adaptability of high school graduates in the context of the development and improvement of modern network practices and collaborations of domestic universities.

The analysis demonstrated that a serious shortage of actual theoretical and methodological developments of including the network resource of modern reality into educational context is one of the significant problems of the existing educational reality. Researchers note the increase in the role of network phenomena in people's lives (Pecherskaya, 2014; Gurkina & Maltseva, 2015). The mentioned phenomena include information and communication technologies, global networks, e-learning, etc. as well as educational infrastructure development. They become the main carriers of sociality in a post-industrial,

information-oriented society. The phenomenon of “network socialization” is gradually taking shape. The strategies of network social adaptation are developing within the framework of this socialization.

However, current approaches to the analysis and improvement of individuals’ social adaptation strategies under current conditions of network practices demonstrate an insufficient level of methodological problem understanding. This makes it essential to study its solution in an interdisciplinary context, paying particular attention to the features and possibilities of the network approach and aspects of its development in the course of creating conditions for the social adaptation of an individual in education.

The problem of developing the methodological foundations with the objective to create social and pedagogical conditions for a positive social adaptation of an individual in higher education by means of social practices is addressed in the work of a number of domestic and foreign specialists. However, this analysis is often fragmentary in nature and it does not take into account the trends characteristic of the modern stage of postnonclassical science development.

It is revealed in the study of M. V. Romm (Romm, 2002) that a general scientific analysis of the problems of individuals’ social adaptation provides a philosophical and sociological substantiation of adaptation processes in society, understanding of which is impossible outside the context of active, systemic and informational approaches. Philosophical, sociological, psychological and pedagogical research focuses on the ratio of the problems related to individuals’ social adaptation and socialization of a person. This relationship is clarified by the available research data of various bioorganism and neurophysiological manifestations of human and animal adaptation, which specify the theoretical neurophysiological model of functional systems as applied to biological objects of various complexity, the role and importance of genetic information in the bioadaptation process.

The issues relating to the creation of information mechanisms of social adaptation and socialization of *Homo sapiens* in anthropogenesis, as well as research, which reveal the concepts of cultural and historical origin, structure and development of higher mental functions, mental and neurophysiological aspects of the social personality adaptation are becoming more and more significant under the conditions of the information society. The further development of these subjects is connected with the research of particular aspects of adaptation and socialization at the individual, group and societal levels.

However, the developed approaches do not represent an integral methodological basis for clarifying the role and place of modern network processes in effective individual’s social adaptation. They are characterized by fragmentation in describing and evaluating the role and place of network educational practices, which requires clarification and justification of the heuristic potential of the network approach. The specificity of modernity leads to the wide dissemination of social networks and emerging most types of activities on their basis. Above all, these are the activities that aim to create, receive and transmit information, which plays a huge role not only for educational processes, but also for intellectual creativity (Romm, Romm, & Zaiakina, 2016). That is why there is a surge in interest of modern researchers in education (including the domestic ones) to network issues.

3. Research Questions

Comprehension of these plots in the context of modern socio-philosophical and humanitarian knowledge, focus on existing research and approaches in domestic and foreign science imply the expansion

and deepening of the theoretical and methodological base enabling to improve the practice of optimizing network processes in higher education. The development of theoretical and methodological foundations of the study of network practices in education, favouring the development of effective social adaptation and increasing the level of individual vitality in education involves the formulation of a set of research tasks related to the provision of a rationale for a set of socio-philosophical, socio-pedagogical and psychological issues that constitute an interdisciplinary basis for studying network practices in higher education.

4. Purpose of the Study

The purpose of the article is to substantiate the theoretical and methodological foundations of the heuristic potential of the network approach to the problems of social adaptation and individual's viability in higher education.

5. Research Methods

The proposed study assumes a multi-purpose setting in the analysis of network phenomena of higher education. The analysis is supported by the formulation of a set of research tasks and determines the coverage of multilateral relations inherent in the methodological aspect of the study.

The general scientific methodological basis of the study is made up of the general scientific principles of development, consistency, integrity, determinism in the study of the problems of individual's social adaptation in education. Private research methodology involves the use of the bifocal normative-interpretative principle, which goes back to the complementarity principle of N. Bor, aimed at studying the difficulties that arise in the implementation of the tasks in socio-philosophical, socio-pedagogical and socio-psychological reflection.

This theoretical and methodological principle enables to enrich the study with the elements being traditional for socio-humanitarian knowledge (systematic, socio-cultural congruence, etc.), data of socio-humanitarian branches of knowledge, having heuristic potential by overcoming the diversity of social practices objectively established around the modern high school, and the individual interpretation of these conditions by the main "participants" of network relations.

The concepts of the modern network theory related to the theory of "social networks analysis" (SNA), relational sociology (relational sociology) and actor-network theory (ANT) (Maltseva, 2018; Crossley, & Edwards 2016; Zeng, Sheng, & Yao, 2015) are of particular importance for the study. A complex of general scientific and objective methods of analysis comprising the theoretical analysis, design, and generalized analysis was used in accordance with the tasks nature.

6. Findings

The objective nature of the challenges posed by the life of modern society, which include the change in sociality associated with the transformation of traditional institutions of socialization (family, school) and the emergence of new ones (media, subcultural communities, networks); an increase in the consumer character of a modern person's life accompanied by the growing shortage of humanistic values; the proliferation of the Internet and digital technologies leading to the change in the conservation patterns and transmission of social experience, radically alters the way of man's social functioning, including their

natural need and ability to adapt to changing conditions. The problem of social adaptation is becoming one of the key issues. The way of its theorization is connected with the tradition of scientific rationality, which changes in a post-industrial society, its principled orientation to the equality of all points of view, all approaches and all concepts. The change in the nature of the cognitive situation in science is reflected in the fact that non-classical interdisciplinary and problem-oriented research methods and approaches are put forward in science in general and in pedagogy in particular along with classical monodisciplinary studies. As a result, the integration and intersection of the natural and human sciences is intensified, which leads to objective and very effective changes in traditional ideas and the emergence of diverse non-classical scientific views on the nature and character of the social reality around us. Sociality acts as an attribute of humanitarian phenomena, a source of development and, concurrently, an integrative quality, reflecting the result of interactions of a person and society, determines the development of the individual in the communal. Objectively, this is a system characteristic underlying the development and functioning of a society of any type; reflection of the social relations that develop in a society between people and structures. At the subjective level, sociality acts as a personality trait, which reflects the ability or inability of an individual to be a subject of social relations, to realize their individuality in real social conditions. Distinguishing a macro level (typical behavioral acts that comply with laws, socially-approved norms) and a micro level (reflexive acts, emotional-semantic values, value preferences) of social in upbringing constitutes the content characteristic of modern social adaptation.

In normative terms, social adaptation of an individual includes a number of substantive aspects. First, it is the process of continuous social control over the conformity or non-conformity of human behavior to certain norms and values which prevail in society and which are forcibly “imposed” on a person in a specific socialization process. Secondly, it is a system of social activities associated with overcoming a variety of adaptive barriers that functionally hinder adaptation in a particular situation.

With regards to an interpretive paradigm, social adaptation is considered as an information-communicative, ideological construction of the meanings of being and personal life strategies, implemented in the process of continuous interpretation of a person’s own identity and symbolic social contexts in terms of their compliance with consistent understanding of social reality, which is purposefully shaped (set) or spontaneously assimilated (opened) in the process of socialization. The informational adaptive-interpretive process results in the subject’s ability, firstly, to fix, clarify or restore his identity and, secondly, to construct ideologically consistent images for himself and / or those around him (reflection) of social reality using interpretive social adaptation strategies. The adaptive correction procedure can be carried out both within the framework of socialization and relevant social institutions and with the help of individual goal-setting. The process of social adaptation is utilized through the implementation of individual, group and societal adaptation strategies.

Concerning the normative paradigm of the strategy of individual’s social adaptation, on the one hand, these are the methods, techniques and strategies that allow society to provide the most effective, optimal and painless aggregation (attachment) of a person to an objectively established system of socially acceptable structures, roles and interactions in which a person could bring the maximum benefit to himself and society. On the other hand, it is a method, scheme, algorithm for overcoming numerous adaptive barriers that impede or paralyze the adaptive processes in society.

In the context of interpretive understanding social adaptation means the use of such adaptive strategies that allow a person to preserve or clarify his identity. Social adaptation strategies are always adjusted by external assessments of the social environment and internal understanding of the personality's own identity, which acts as an individual and social "compass" in interpreting the diversity of social situations in the process of an individual's adaptation. Identity acts as a kind of "filter" mediated by society, thanks to which the subject of adaptation combines the need for individual interpretation of social situations with appropriate adaptive responses with the objective to provide assessments of social environment in a situation of permanently clarifying individual's own I-identity.

The acquisition of a full-fledged identity in the process of social interaction is considered to be the evidence of successful social adaptation. The strategy of social adaptation of an individual is an information-logical algorithm, copied or constructed by an individual, a way to realize individual adaptive potential by optimal usage of all available economic, political, and intellectual resources of adaptation with the objective to achieve the desired adaptive effect, which an individual subjectively evaluates (interpreted) as being necessary and sufficient. The process of interpretation favors a person's getting the opportunity to achieve the following adaptive effects: 1) a fundamental change in the system of basic values and worldview based on an alternative interpretation of already known or fundamentally new social information; 2) reconstructing image of social environment on the basis of changed ideological ideas and / or adaptive attitudes in their own minds; 3) interpreting and / or redefining the situation in the direction you need for yourself with the help of socio-psychological means and strategies; 4) conscious or not modifying, gradually changing understanding, perception of the relevant adaptive situation.

Thus, we can assume that an individual's adaptation is a process or result of the transformation and / or interpretation of the objective social world, individual themselves in this world and the subjective image of this world in itself and the formation of an individual adaptive space and personal identity on this basis. These two notions define the meanings of an individual life and orientation of individual adaptation in society (polyparadigm, normative and interpretative understanding).

The processes of social adaptation of a modern human are characterized by extreme instability, variability and uncertainty.

The system theory in the style of Tolkott Parsons and Nicholas Luhmann starts to "slide" and "slip" in the fluid reality of the modern world, in the era of domination of "post-truth" and social relativism, when differences and boundaries between politics and economics, morality and ethics, education and indoctrination and private and public life, either become thinner or become unsteady and / or practically intangible. This enables R. Häusling to assert the inability of the classical systems theory to "adequately comprise such phenomena which are increasingly coming to the fore in social processes and express the abolition of boundaries and the multidimensionality of the world by its terminology." It is possible that the network approach here serves as the "savior", and the network theory claims to be the "metatheory". According to R. Hoysling, the metatheoretical nature of the network approach is determined by a number of circumstances (Hoysling, 2003):

- a) the network theory does not initially carry any ideological setting, so it perfectly "gets on", coexists and is determined through conjugation with other theories (a similar ideological

pluralism of network theory is its strength because it allows one to combine fundamentally incompatible theoretical constructs, achieving unexpected conclusions and breakthroughs, where they were not expected by anyone);

- b) it conceptually resolves everything it describes, allowing an original interpretation from the point of view of its own theorization;
- c) the network theory allows researchers to handle highly abstract theoretical constructs, allowing them to avoid strict definitions and rigid conclusions where they are impossible and / or irrelevant.

Such a methodological setting can open up new horizons for the theory of social adaptation with the aim to shape the agenda of innovation plots related to the problems of realizing the macro- and microsociality of the modern world, form social capital, network modeling, define the boundaries and horizons of educational efforts as a resource for personal adaptation, etc.

Traditionally, social networks are commonly regarded as structural entities, stable social connections and relationships that unite social actors involved in communication (Mohr, White, 2008). In essence, “the network is a set of relationships” (Kadushin, 2012). Connections and relationships along with communication interactions are also understood as any exchange of resources. The symbolic analogy proposed by R. Hoysling (Hoysling, 2003) is well known. This analogy represents network relations and interactions in the form of channels through which various types of social activity of the actors are involved. Thus, it is possible to consider a social network as a set of formal-informal connections between network actors, and these connections (relationships) make it possible to achieve an increase in network capital in the process of network interaction.

What happens in network practices that cannot happen in other formats? Network practice is more free and open, because it is not a hierarchical, predetermined structure, but is created and maintained by common problems, which are interesting to all members of the network. The network operates normally and self-adjusts if it is sufficiently enriched with personal knowledge and interactions. And, first of all, the interactions management of the network type is connected with the support and “enrichment” of the space where something new can arise, that is, self-organization space. Thus, network interaction in the education system brings us closer to understanding of what can be called an individual educational trajectory and will allow us to approach the solution of the tasks of individual’s social adaptation.

Any social network is relatively useful and meaningful for its members in terms of increasing their adaptive capacity and communication competence, social sustainability and functional performance. However, taking into account the fact that the underlying practices of network communities may be based on different principles (Zayakin, 2017) we can conclude that: a) network cooperation, b) network competition, c) network simulation for social adaptation of an individual become the most relevant with regards to the realization of social cooperation, which forms the practice of network partnership. Social partnership is characterized by awareness, activity, openness, consistency of values, orientation to the mutually beneficial nature of joint activities, and trusting relationships. Network capital is born due to the establishment of sustainable network partnerships (Wellman, & Frank 2001). It has value in the eyes of

partners and is available only through partnerships. It can cover information blocks that are relevant for achieving goals, jointly born adaptive strategies, social access codes resources, etc.

The development of partnerships in an educational organization contributes to a number of conditions. The first condition is openness of the organization. Openness is interpreted as an integral characteristic of the post-industrial, information society, in which it becomes an element of the “norm”, an objective regularity, bearing both productive (positive) and negative (threatening) consequences. As applied to the problems of social adaptation of an individual, openness implies a shift of focus from normative (policy) behavioral strategies to partner (cooperative) strategies, which makes understanding of “soft methods” of regulating the adaptive process, spread of exchange processes, transparency, flexibility and variability of educational systems relevant.

Secondly, an educational organization participating in network formats should be interesting and valuable for its partners, and each partner should have the desire and resource potential to change its own network position in order to strengthen it, additionally, all partners should feel the relative equality of opportunity, which enhances adaptive capacity of each network participant. An important condition for the success of social adaptation in a partner network is the boundaries of an educational organization’s involvement in the network: the number of network partners that directly interact with it increases its “rating”. The higher the level of trust in an educational organization, the more attractive it is to potential partners. The network approach reinforces the importance of the idea of the organization’s connections, emphasizing the tasks of purposeful shaping a positive image of an educational organization, its multiplication, promotion and replication.

Thirdly, the network partnership is associated with updating the “strength of weak ties” (Granovetter, 2009) being a combination of emotional intensity, duration, similarity, confiding, and reciprocal relations. Any information becomes available to a significant number of people due to the existence of “weak ties”. Thus, “weak ties” become a source of prospective mobility and social adaptation of the individual. This provision contributes to the recognition of the importance of supporting and spreading “weak connections” which are present in the educational organization’s network (such as implicit resources, remote access, informal contacts, groups in global networks, etc.) and which provide conditions for individuals to develop self-realization. It also contributes to manifestations of talent as well as increasing their social adaptability. The development of “weak connections” in the educational organization of higher education causes network practices to contribute to students adaptation to constantly changing living conditions and training; compensation for the disadvantages of primary socialization (including the disadvantages of the sociality of the young person); development of professionalism (formation of skills of social interaction within the profession, familiarity with the norms and rules of professional behavior); enculturation, allowing to master the cultural potential of the environment of the university and society.

The use of the network approach makes it possible to uncover the modern content of the concepts of “social adaptation of the individual in network processes” and “network practices in education”, to substantiate the interdisciplinary basis of network practices that contribute to individual’s social adaptation; to identify the specificity and characteristics of real and potential network practices aimed at optimizing social adaptation processes in higher education; reveal their invariant and variable characteristics; develop criteria for social adaptation of the individual in the network practices of higher education.

7. Conclusion

The obtained results will contribute to the deepening of modern theoretical and methodological knowledge about the problems of the effective development and functioning of higher education in the context of its modernization. The obtained theoretical results having a principled novelty will increase the practical significance of theoretical and methodological research that will help identify the means and methods of social adaptation of a person in the context of the development of higher education network practices.

The scientific novelty and significance of the task set in the project consists in substantiating and developing the solution of the fundamental scientific problem related to the lack of modern pedagogy of the theoretical and methodological basis for analyzing and constructing models of social practices in higher education adequate to the current state of the socio-humanitarian knowledge of an individual.

The potential practical significance of research results for practice is determined by the possibility of widespread use of its results in the higher education system: the developed innovative practices of network development of higher education will allow researchers to expand the methodological tools for scientific and practical solutions to the problems of modern higher education; application of the results of the analysis of network practices in higher education with the objective to increase the viability and social adaptation of the individual will expand the opportunities for professional training of students and graduates of universities. The results of the study can serve as a basis for creating practice-oriented programs in the field of improving the viability and social adaptation of the individual in higher education with regards to network processes.

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