

# Strategic models of networking cooperation in the National education system: history and perspectives

## Modelos estratégicos de cooperación de redes en el sistema educativo nacional: historia y perspectivas

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#### ABSTRACT:

Nowadays a cooperation between educational institutes has gained the status of a leading trend in modern society. Networking cooperation notably promotes opportunities for separate educational institutes and allows creating and carrying out innovative projects and curricular programs. The fundamental reason for innovative educational networks existence is the building-up principles of social structures with networking pattern of organization. The research relied on basic methods of scientific research: general-purpose method, empiric method, historical and pedagogical method, and the comparative method. The following methodological principles were used: research of phenomena in their dialectical and historical unity; objectivity in the selection, analysis and scientific assessment of facts and phenomena; historicism principle. It is established that the most important results of innovative educational networks' organization are a consolidation of civil society in its sociocultural segment, creation and distribution of the best teaching practices, as well as multiplication of members who participate in the innovative process. The leading achievements of practical use of innovative networking technologies are the acceleration of learning, a qualitative change of curriculum content, increasing the capabilities for continuing education, providing solid pedagogical results. It is found that innovative educational networks with vertical and horizontal structures foster the enlargement of education administration centres and, at the same time, the maintenance of educational system unity with receiving of orders for the educational product from different consumers in the context of the innovative economy. Implementation of scientific research results and productive management models for educational systems allow using the advantages of networking organization more effectively in order to improve quality, accessibility and competitiveness of the national education system.

**Keywords:** networking cooperation, educational institutes, innovations in education.

#### RESUMEN:

Hoy en día, la cooperación entre los institutos educativos se ha convertido en una tendencia líder en la sociedad moderna. La cooperación en redes promueve oportunidades para institutos educativos separados y permite crear y llevar a cabo proyectos innovadores y programas curriculares. La razón fundamental para la existencia de redes educativas innovadoras son los principios de construcción de las estructuras sociales con un patrón de organización de redes. La investigación se basó en métodos básicos de investigación científica: método de propósito general, método empírico, método histórico y pedagógico, y el método comparativo. Se utilizaron los siguientes principios metodológicos: investigación de fenómenos en su unidad dialéctica e histórica; objetividad en la selección, análisis y evaluación científica de hechos y fenómenos; principio de historicismo. Se establece que los resultados más importantes de la organización de redes educativas innovadoras son la consolidación de la sociedad civil en su segmento sociocultural, la creación y distribución de las mejores prácticas de enseñanza, así como la multiplicación de miembros que participan en el proceso innovador. Los principales logros del uso práctico de las tecnologías de redes innovadoras son la aceleración del aprendizaje, un cambio cualitativo del contenido del plan de estudios, el aumento de las capacidades para la educación continua, proporcionando sólidos resultados pedagógicos. Se encuentra que las redes educativas innovadoras con estructuras verticales y horizontales fomentan la ampliación de los centros de administración educativa y, al mismo tiempo, el mantenimiento de la unidad del sistema educativo con la recepción de pedidos para el producto educativo de diferentes consumidores en el contexto de la economía innovadora. La implementación de los resultados de la investigación científica y los modelos de gestión productiva de los sistemas educativos permiten aprovechar las ventajas de la organización de redes de manera más efectiva para mejorar la calidad, el acceso y la competitividad del sistema educativo nacional.

**Palabras clave:** cooperación en red, institutos educativos, innovaciones en educación.

## 1. Introduction

Educational institutes' cooperation in modern society has obviously become a necessity. Historically pedagogical cooperation considerably extends rather limited possibilities for separate educational institutes, allows creating and carrying out innovative projects and programs not only in content but also in forms of educational activities.

In order to make a historical potential actual, the strategic models should be presented for modern university development, they are formation of teaching modes, pedagogical ideas, pedagogical consciousness, thinking and culture; values elaboration and comprehension of educational and pedagogical ideals; evolution of scientific ideas devoted to the ways of forming, educating and developing the personality, who is able to overcome difficulties according to the best pedagogical traditions (Boguslavskij 2014); educational management; traditional management practice in the national education system.

From the beginning of the 21st century, the idea of the creation of innovative educational networks appeared and it continues to actualize at municipal, regional and federal level. At the same time, there was the process of sporadic cooperation between educational institutes, which created networking structures based on common interests and mutual aims on their own initiative. The expansion of development prospects for the education system and simplification of the transmission mechanism for new educational ideas and technologies, which are supported by cooperation, explain the government's attention to these processes (Aleksandrov 2006).

There are certain differences between these forms of cooperation in the education sector. Yet, these differences are remarkable only at the first sight. Inner mechanisms, which provide the effectiveness of cooperation between network participants, are very similar. However, innovative networks' management does not often give weight to this fact, and this leads to the loss of dynamism in cooperation processes and to the fragility of connections inside an intentionally created networking space. Among common problems which networks have, we can distinguish the following: great turnover of network members; passiveness of network members; fast disintegration of the network.

There is no strict hierarchy in a spontaneously appeared network. All its members have equal rights and any cooperation is built upon their common interest. The fundamental reason for their existence is the building-up principles of social structures with networking pattern of organization, its characteristic feature represents the supremacy of social morphology over social action. The basic content of members' cooperation in such networks consists in information exchange of any technologies, methodologies, ideas, or programs. Transformation of social reality is not the aim of this type of cooperation.

The situation is different with administration networks. The main reason for their existence is creating conditions for transformation of social reality through the change of educational practice. However, such network is not necessarily a formal institution. Network structure, in this case, obtains a hierarchic pattern. It consists of "the core", which includes educational institutes that work at certain directions of innovative activity and represent a resource centre of such direction. These institutes either may have an official status of a resource centre, a testing site, a methodological centre, a school-lab, or may not have it. They offer educational programs, methodologies and technologies to other pedagogical groups in the structure of an innovative network.

Other participants surround "the core" and represent "the body" of an innovative network. Theoretically, "the body" of the innovative network consists of pedagogical groups, who are interested in mastering new forms of pedagogical activity, as well as new programs, manuals, and methodologies

offered by “the core”. Yet, “the body” members must not be passive consumers of the innovative product, which is offered by the developers. They have to test a suggested model, adapt it to their educational conditions, and examine it for transmission, realizability and effectiveness, thus creating their own product, their version of the conceptual model and prepare it for implementation into pedagogical practice.

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## 2. Methods

The research was done according to the basic methodological principles: research of phenomena in their dialectical and historical unity; objectivity in the selection, analysis and scientific assessment of facts and phenomena; specifically, historical approach to the study of pedagogical phenomena; historicism principle.

The following scientific methods were used: general-purpose methods (analysis, systemization, composition); empiric and experimental methods; special methods of historical research: historical-genetic method (identification of patterns and cause-and-effect relationship in the development process of education system), historical-typological (definition of essential properties for educational institutes and networking structures), historical-structural (identification of systematic components in educational process and historical characteristic of its evolution); and comparative method (contrastive-comparative research of educational institutes’ evolution).

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## 3. Findings

The most important results of the innovative educational networks’ organization are the following: consolidation of social force, who is interested in education development; creation and distribution of the best teaching practices; as well as multiplication of members who participate in the innovative process. It is necessary to analyze innovative mechanisms, which help to eliminate most common problems and form a stable and active networking cooperation.

Specific innovative networks are aimed at providing a stable development of the most important directions of educational practice. Each innovative network works according to its program and ensures the perfection of a certain sector in the education system.

Networking structures can be formed by the following principles: substantive and meaningful principle; according to the types of cooperating institutes; and according to the types of methodological approaches and pedagogical technologies.

The same institute can participate in several networks and gradually implement different directions of innovative educational activity into its organization – school, museum, or library (Milovanov 2016).

A very important stage of forming a new innovative network is the process of defining the innovative content. In fact, it is necessary to decide what exactly will be tested and implemented in education institutes of the innovative network. This can be an educational project, program, methodology and technology.

From the other side, many issues arise about organization and methodology. Either transmitted educational technology may be used independently from the other methodological products, or the implementation of cooperated educational technologies is needed. What are the conditions for retraining of teachers, who learn new educational technology, or rather the form and methodology of retraining, as well as content and cost of a course? Will there be a control from developers for the process of testing and implementation of innovative content in a networking school? What are forms and mechanisms of such control? Which methodologies can help with diagnosing the educational effect (pedagogical, educational, developmental, and socializing) of the implemented product? Moreover, what does it consist of?

The results of the acquisition of this educational technology are the following: the acceleration of acquisition of school program; a qualitative change of curriculum content; increasing the capabilities of continuing education; providing solid pedagogical results.

It is important to take into account the presentation procedures of the innovative product because these procedures inform professional teachers, potential partners and members of an innovative network aiming to distribute innovations and broaden networks (Santo et al. 2016).

A network’s functionality includes mechanisms of institute selection for the innovative network and different technologies of transmission the content of innovative modules to executives and teachers (Tyunnikov 2014). The experience in innovative networks has shown that it needs network members, who have a certain functional leadership, in order to gain effectiveness. The function of scientific advice, as well as organizational and methodological functions, are important in the networking cooperation.

The scientific advice in an innovative network can be provided by separate specialists in a certain topical or all humanities area, or by scientific groups – academic departments, laboratories, offices, centres and groups (either on a temporary or on a constant basis).

“The core” members of innovative network or methodologists do organizational and methodological networking cooperation, as a rule. Their responsibilities are planning, preparation and running networking events; preparation of methodological materials for transmission to networking institutes, description of methodologies and technologies, presentation of research results; development of mechanisms for transmission of innovative products and monitoring the implementation results; providing cooperation between teachers (Lambrechts and Hindson 2016). In such a way, the cooperation between the developers and the representatives from innovative networking institutes is not limited by the creation of certain materials, applied models and methodologies.

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## 4. Discussion

The modern management theory for educational systems distinguishes horizontal and vertical structures (organizations) of innovative networks.

Horizontal structure intends to join the one-direction activity of several educational institutes, which are at the same level, into a common system, yet with different functions – a testing site, school-lab, innovative school. The horizontal network allows cooperation with partners, such as with institutes of continuing education, psychological centres, medical centres, sports centres, civic organizations, social and cultural centres.

The vertical organization provides cooperation between educational institutes of different levels – preschool centres, middle and high school, technical schools, centres for professional advancement. Vertical networking organization needs education sector to have active cooperation with other segments of professional activity. Basically, with governmental authorities (as key consumers) and collaborating cultural and social institutes: museums (Scharon 2016), libraries, creativity centres (Driga 2012).

Innovative networks of mixed type can also exist. Such mixed types of networking structures, which can appear in education system, can be university circuits, resource centers for high-quality developing education (psychological centers, information centers), personnel centers, communities for children and adults, corporate universities which retrain and top up qualification, structures for integration between national and international educational experience.

Innovative educational networks with horizontal and vertical structure foster the enlargement of education administration centres and, at the same time, the maintenance of educational system unity with receiving of orders for the educational product from different consumers in the context of the innovative economy. If such networks are formed, the education system becomes able to keep the resources and use them for building new promising education systems.

The innovative network has the following functions: distribution of educational technologies; integration between cultural and educational experience; creation of developmental educational space; creation of new educational ways for students; development of pedagogical proficiency.

If we try to determine functional capabilities of different types of innovative networks, it is more obvious that we choose a vertical organization of network. The idea of vertical networks is, in the first place, a technology of bringing up new forms of higher education out of general one, basing on a flexible consideration of consumers’ requests, including parents and their children (Swanger 2016). Basing on innovative networks of general secondary education, in particular, we can form requests for new types and forms of secondary and higher education, continuing education, postgraduate education.

The functional capabilities of horizontal networks can face some troubles. However, we can distinguish several examples here. For example, properly constructed networks by continuing education and socio-psychological centres may change and develop the social policy in the region. With the help of networking structures, an international cooperation can arise in educational, scientific, cultural and youth policy, as well as mechanisms’ perfection in target financing of the educational area.

It is possible to distinguish ten framework conditions, which provide the effective and stable functionality of innovative educational networks.

1. Informational transparency, which allows the distribution of information about the activity content and results of the innovative network. To realize this condition it is necessary to use actively all forms and methods of public outreach, from events to mass media. The fulfilment of this condition will allow not only to extend the number of participants into a networking cooperation at this direction but also to escape network formalization, forced

incorporation of new members into an innovative network.

2. The existence of an organ of public government for an innovative network, including scientific, cultural, governmental, finance organizations, which are interested in the effective activity of the innovative network. The structure and functional responsibilities of such organ may be different from analogous educational institutes. This may be not only governing (supervisory) board, but also academic or science and engineering board, for example.

3. The enlargement of the innovative network by means of foreign partners capture may considerably enrich the activity content of innovative network, also may allow capturing additional financial resources from budgetary and non-budgetary sources.

4. Basic innovations' content should match certain criteria, such as finality, integrity, transmission, resulting character, stability, modernity. The presence of an author (individual or collective) is necessary, the author has to be ready to transfer his models to other educational institutes.

5. Ideologic and practical unity between members of an innovative network, which they understand as the unity of values and meanings, common pedagogical aims, interest in cooperation and its productivity, proximity to the meaningful orientation of educational activity.

6. Participation of innovative network's members, including "the body" members, in the process of creation, description and arrangement of the innovative product. Participation of the innovative network itself in the external sociocultural space.

7. Distribution of functions of institutes and associated members of an innovative network according to kinds of activity, organizational status, and differentiation of innovative content.

8. Accumulation of all sociocultural resources. Involvement of workers from higher education institutes, research institutes, national educational and cultural centres, associations of people of art, museums and libraries workers, as well as representatives from mass media (Milovanov et al. 2017).

9. Creation of specifically organized information educational environment, which would help not only to be up-to-date, get the information and access to the basic documents, conceptual and methodological materials, but also to have guides and examples of the activity itself from different platforms and innovative networks, to know about the peculiarities of their forming and further developmental aims.

10. Active use of IT as a part of networking cooperation for consulting network members in a distant mode, discussions of innovative activity processes and results, running virtual events: project competitions, conferences, meetings, seminars (Lytras et al. 2018).

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## 5. Conclusion

Summing up, the innovative networks in the national education system represent a modern implementation mechanism for intellectual products, advanced and science-based products, and perspective management models of educational system development. The process of forming and distribution of innovative networks already represents a leading educational innovation.

Professional approach to the building and right organization of innovative activity with an account of its peculiarities, conditions and standards of networking structures' functionality, will allow more effective using of this resource in order to improve quality, accessibility and competitiveness of the national education system.

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