

# Synergetic Approach to the Learning Process Organization for Future Education Managers' Training at Higher Education Institutions

## Enfoque sinérgico para la organización del proceso de aprendizaje para la formación de futuros administradores de la educación en instituciones de educación superior

Svetlana Viktorovna PANINA [1](#); Elizaveta Afanasyevna BARAHSANOVA [2](#); Alla Dmitrievna NIKOLAEVA [3](#); Olga Petrovna OSIPOVA [4](#); Lyubov Vladimirovna STEPANOVA [5](#); Kira Nikolaevna SIVSEVA [6](#)

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#### ABSTRACT:

The relevance of the studied issue is determined by the interest of the professional pedagogical community in the problem of teacher training, taking into account the contemporary challenges of society. The article is aimed at revealing the effectiveness of applying the synergetic approach to the organization of educational process while training future education managers at the university. The materials of the article are of practical value for teachers and researchers in the sphere of organizing the educational process while training education managers.

**Keywords** organization of educational process, synergetic approach, higher education, education manager

#### RESUMEN:

La relevancia del tema estudiado está determinada por el interés de la comunidad pedagógica profesional en el problema de la formación docente, teniendo en cuenta los retos contemporáneos de la sociedad. El artículo tiene como objetivo revelar la efectividad de aplicar el enfoque sinérgico a la organización del proceso educativo mientras se capacita a los futuros gestores de la educación en la Universidad. Los materiales del artículo son de valor práctico para los docentes y los investigadores en la esfera de la organización del proceso educativo, mientras que la formación de los administradores de la educación.

**Palabras clave:** organización del proceso educativo, enfoque sinérgico, educación superior, Director de educación

# 1. Introduction

Management of the educational process at higher education institutions includes functions like planning, design, coordination, monitoring, evaluation and organization. It is organization, as a constituent component of educational process management at higher education institutions that this material is devoted to. The synergetic approach is regarded by the authors as the transfer of integral blocks of information that give an overall picture of the world, rather than one phenomenon or problem, it allows us to focus on the multidimensionality, complexity, and polyphonic character of the cognizable processes.

The sociocultural changes in society expand the range of professions in which pedagogical education is in demand. The structure of education consumers and their requirements is changing: there is a growth in the sphere of additional vocational education, in the share of adult education, and the principle of the continuity of education is confirmed (Chistyakova et al., 2016). As with many other countries around the world, Russia has adopted excellence initiatives to raise the international profile of its research universities (Gounko et al., 2016). This is the case in the United States of America.

At the present stage of society development in the context of increasing complexity of production relations and its technical and social infrastructure, the change in the attitude of educational structures to training specialists in any field proves to be crucial (Vyugina, 2011). Higher educational institutions focused on innovations contribute to the formation of an effective national innovative system of education. The introduction of innovations to the educational process is due to many factors, including the constantly increasing requirements for the quality of education and training of specialists (Nikolaev, 2009).

Analyzing the practice of pedagogical education at higher education institutions of the Russian Federation makes it possible to identify the following tendencies:

- the development of interaction between schools and higher educational institutions and network partnership of educational organizations;
- the development of diversified educational paths for the training of teachers at higher education institutions, the expansion of the master's programs for the training of education managers;
- the implementation of innovative teaching technologies aimed at improving the quality and efficiency of educational process;
- the implementation of a score-rating system for monitoring students' knowledge;
- an increase in the requirements for students' research and social work;
- the development of academic mobility programs for future teachers;
- a growth in the requirements for the teaching staff as well as for scientific and pedagogical workers;
- a rise in the demand for graduates, which ensures a high level of their employment and a steady increase in the number of young professionals in educational organizations (Mikhailova, 2015).

The synergetic approach is an interdisciplinary scientific domain of evolving structurally organized systems, to which the system of professional training of specialists in the sphere of educational management can be referred. This approach makes it possible to re-discover the scientific and pedagogical knowledge that is oriented towards the multidimensionality, complexity and a polyphonic character (alternativeness and variability) of cognizable processes, to discover their undisclosed or insufficiently disclosed states and to recognize the significant role of randomness in their development. The system of education at higher education institutions will be capable of self-organization if it meets a number of requirements: it should be complex, open, non-linear, and stochastic, it should be able to reach a state of instability,

and it should possess both the sources and the sinks of energy and information (Vyugina, 2013).

## 1.1. Literature Review

Based on the analysis of the study, the following principal approaches to the educational process of training future education managers in Russian universities are defined: knowledge based (traditional), system and activity based, humanistic, personality-oriented, competence-based, acmeological and synergistic (Table 1).

**Table 1** - Approaches to training future education managers

Approach	Description
Knowledge-based	Education should be aimed at the acquisition of profound scientific knowledge by future education managers. The requirements for university graduates presuppose that they should master the knowledge and skills that allow them to methodologically process the content of education and transfer it.
System and activity based	Education should be aimed at building students' ability to design, forecast and program their professional activity.  Training represents a triad, which includes a system for the formation of personal and professional qualities, a system of professional and pedagogical culture, including the mandatory formation of regulatory components of professional activity, and an interdependent system of their interaction.
Humanistic	It is believed that the personality of an education manager is the one in which professional skills and individual psychological features are naturally intertwined. Therefore, the training of such a specialist should be based on humanistic values, realized by the person and accepted by them as the essence of managerial and pedagogical activity
Competence-based	Education is focused on the internal change of an individual's value-based, need-oriented and motivational structures, their interests, attitudes, views, personal meanings in mastering knowledge, skills and work methods.  Priority is ensured in learners' realization of their personal goals and meanings, simultaneously bringing social values and social meanings of mastering the system of competences to a higher level
Personality-oriented	The necessity of forming higher school graduates' value-based attitude to innovative practice as an individual and social mechanism of positive changes, the implementation of which implies creative and meaningful exceedance of the traditional goals and types of activity.
Acmeological	The system of training managers at higher education institutions should be oriented towards the development of an individual's qualities and abilities, which ensure the formation of a professional activity culture, and the formation and development of professionalism.
Synergetic	The opportunity to take a new approach to tackling the problems of the development of pedagogical systems, primarily considering them from the perspective of "openness", co-creation and orientation towards self-development.

The result of learning process organization is training a specialist with a wide range of professional qualities. The learning process is a system in a state of permanent movement and self-development; the cognizable reality is a system consisting of numerous developing elements. Any training system is a synergetic and self-organizing system.

*Source:* Anufriyeva, 2009; Bulaeva, 2009; Vikulenko, 2016; Darling-Hammond L. 2006; Foster, 2004; Zhidkikh, 2012; Miller, 2010; Mikhailova, 2015; Kotova, 2016; Nikolaeva et. al., 2016; Nazarova and Lvov, 2016; Serebrovskaya, 2011; Samsonova, 2009; Shasherina and Shumko, 2012; Zaragoza 2017, Zeichner 2005).

Analysis of the literature suggests that the synergetic approach is aimed at realizing one of the most complex tasks of the modern education system - its transition to creative, problematic methods of teaching and upbringing that ensure the formation of a creative personality and the development of its intellectual potential. Thus, V.I. Andreev believes that the synergetic approach provides an opportunity to approach the development of pedagogical systems in a new way, primarily considering them from the perspective of "openness", co-creation and orientation towards self-development (Andreev, 1996).

In the educational environment of M.K. Ammosov North-Eastern Federal University (hereinafter - NEFU), the pedagogical system continues to develop, relying on the synergetic approach, which has many ways of development for the development of students' intellectual potential.

It is believed that when training future managers in the field of education, it is necessary to take into account and implement certain principles for the formation of a creative personality of a future specialist: 1) the principle of recognizing a student's self-worth, which is understood as an open opportunity in the educational process; 2) the principle of fluctuation (deviation) of creative thinking, according to which no functional system is stable, deviations inevitably accumulate in it, which can lead to chaos and even cause its decay; 3) the principle of inconsistency of the process of intellectual ability development, suggesting that self-organization is possible when the system is heterogeneous, when nonequilibrium structures are present, and self-development here is understood as self-actualization of the available potential capabilities of the system (Vyugina, 2011).

The need to use the synergetic approach in the organization of the learning process is predetermined by the fact that the subject-based professional training system developed in higher education is oriented towards independent, severely restricted academic subjects, which leads to deterring the process of formation and development of interdisciplinary links that are the most important imperative (factor) for training a modern specialist. Thus, the integrated courses that form the integral type of cognition are the implementation of interdisciplinary links.

One of the main objectives of pedagogical universities is to provide the education sector with personnel who are ready to make managerial decisions in the context of uncertainty and modernization of the education system. According to the synergetic approach, M.A. Fedorova singles out the basis for the fact that synergy in the organization of educational process is the creation of curricula as an image of development, the change of relations between subjects of educational process as a certain path of a gradual change of opportunities along which the subject will move through the educational environment (Fedorova, 2004).

Using the synergetic approach made it possible to develop the master's program "Project Management in Education" as an integral system interconnected with the quality of education in a higher educational institution, ensuring a comprehensive approach to the training of specialists in education project management, as well as administrative and managerial personnel of education management bodies of various types.

The synergetic approach implies the transfer of integral blocks of information, giving a general picture of the world, rather than one phenomenon or problem. According to this principle, the

following educational modules have been developed in NEFU: "Philosophical and methodological foundations of pedagogical research"; "A foreign language in the professional sphere"; "Project management in the context of education modernization"; "Project development in education"; "Practice", including "Research work".

Inside, the modular links between subjects represent an interdisciplinary synthesis of knowledge, illustrating the profound changes in the methodological foundations of modern science, in the philosophical view of the world, in the very style of scientific thinking. Thus, the module "Philosophical and methodological foundations of pedagogical research" consists in studying the philosophy of science and education, modern problems of science and education, as well as the methodology of pedagogical research. The content of each subject of this module is simultaneously supported by that of others, and stands as a support for other modules.

S.D. Yakusheva clarifies the concept of "synergetic education", interpreting that synergy is inherent in the very process of education, the formation of a personality and knowledge, and that pedagogical mastery and authorial methods are the best examples of applying holistic synergetic approaches (Yakusheva, 2012). The synergy of the proposed program is seen, first of all, in the approach to choosing the developed authorial subjects of elective courses (blocks).

Considering the professional skills of academic teaching staff of higher educational institutions on the basis of a synergetic approach, we focused on the methodological culture and creative potential. So authorial courses have been developed for the following subjects: "Expert project management in education", "Strategic development of educational systems on the basis of project management", "Designing scientific and methodological work in an educational organization", "Psychological and pedagogical foundations of inclusive education", "Legal foundations of project management in education", "Modern educational technologies", "Modeling career guidance work in a regional educational environment".

Thus, training is organized on the basis of designing authorial projects that could improve the work, for example, of a rural school or a city adult education center.

The authors consider that the place for the realization of masters' professional skills is not limited. A graduate can be in demand in the organizations of state and municipal management, in particular, in state and regional departments and education boards, as well as scientific boards.

In the course of analyzing the literature, the authors determined the following contradictions between: the objective need of modern educational organizations for specialists with developed managerial and pedagogical skills, and the real practice of training future education managers at universities; between the need to ensure the competitiveness of a specialist in the field of educational management and the insufficient mechanism for training future education managers.

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## 2. Methodology

The leading approach to the study of this problem is the analysis of the theoretical views of foreign and Russian scholars on the issues of education management at higher education institutions and organizing the training of future managers in the sphere of education. The authors study the experience of management and organization of the educational process in M.K. Ammosov North-Eastern Federal University (NEFU), focused on the preparation of competitive managers with a high level of professional thinking as well as managerial and pedagogical culture.

In order to study the students' knowledge of managerial activities, the level of their professional, personal and special competencies of future education managers at organizations, the authors conducted a survey of 137 students doing the following master's programs of the Pedagogical Institute: "Management in a pre-school organization", "Project management in education", "Innovative processes in education", "Corporate e-learning", "Technology and management of e-learning". The objective of this survey was to study the level of formation of

professional, personal and special competences of future education managers.

The results of the survey show that 41% of the students in the first and second years of study have no work experience, which means that the students have almost no idea about the features of their future professional activity. 22% of the students have up to 1 year of work experience, 16% of the students have from one to five years of experience, which is the smallest percentage of respondents, 13% of the survey participants have five to ten years of experience, and 8% of the undergraduates have ten or more years of experience (Table 2).

**Table 2** Work experience

<b>Work experience</b>	<b>Share (%)</b>
no	41
up to 1 year	22
from 1 to 5 years	16
from 5 to 10 years	13
10 years and more	8

The questionnaire contained questions assessing the competences of students in terms of their importance for effective work of a modern manager. The students also answered questions about the strengths and weaknesses of graduate managers and made proposals for improving their professional competences.

So, while assessing managerial competences, 87% of the students indicated that the top priority is the ability to plan and organize their activities, as well as the presence of decision-making skills, 53% of the respondents believe that leadership skills are necessary for a manager's effective work, and 18% of the students noted the skills of delegation as mandatory competences. The authors believe that this is due to the students' lack of managerial experience, where it is necessary to distribute functions and have the skills of delegation, as well as the ability to determine their own leadership potential.

While assessing communicative competences, the students singled out the skills of persuasion (87% of the respondents), the ability to establish contact (74% of the respondents), the presence of flexibility (71%), and only 51% of the students noted the ability to work in a team and the ability to listen as necessary competences for successful activity of an education manager. The authors believe that this is due to the lack of experience of working in real teams and a low level of communication skills. While assessing personal competences, the students pointed out responsibility (93%), aspiration for self-development (68%), stress resistance (52%) as highly necessary competences for education managers and only 35% of the students consider creativity as a mandatory managerial competence. Only the ability to apply knowledge in practice was referred to special competences as a necessary managerial competence by 59 % of students. The remaining competences were assessed by students as optional. Perhaps this is due to the lack of knowledge of the specific place of future professional activity and the lack of practical experience.

Describing their strengths, the students noted communication skills, a creative approach to solving problems, strong professional motivation and ability to plan and monitor work. Among the weak points, the students pointed out the lack of practical professional experience and the inability to apply the theory in practice.

As proposals for the development of professional competences and changes in the educational

process, the students noted the need to increase the number of hours for on-the-job training, to organize internships with further employment, to increase the number of practical classes and at the same time to reduce the number of lectures, and to organize practical training sessions with the development of specific competences. In addition, among other things, the students also proposed to organize meetings with successful representatives of administration of educational organizations for exchanging experience.

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### **3. Results and Discussion**

Based on treating the formation of a specialist in the field of project management in education as a complex process, the comprehension of which should be covered from various perspectives, the authors developed the educational module "Project management in the context of education modernization" which includes subjects such as "Strategic development of educational systems on the basis of project management", "Expert project management in education", "Legal foundations of project management", "New educational technologies", "Management of the quality of education".

The content and objectives of these subjects make it possible to create a modular integrated course which is aimed at forming the general subject skills used in cognitive, evaluative, communicative and creative activity, taking into account the competence approach and applying the knowledge obtained in the process of studying pedagogy, psychology, etc.

The choice of the proposed subjects is agreed with an employer's order, which was reflected in the specific features of masters' professional activity in the sphere of educational project management.

The authors believe that this is expressed in the ability to design an educational environment that ensures the quality of the educational process; in studying the state and potential of the controlled system and its macro- and microenvironment by using a set of methods for strategic and operational analysis; in research, organization and evaluation of implementing the results of management process using management tools that correspond to the general and specific patterns of the managed system development; in using the available opportunities of the managed system environment and in designing ways to enrich and develop it in order to ensure quality management.

The studies carried out by N.V.Kurikova and E.Yu. Nadezhdina about the specific features of the synergetic approach in the process of organizing foreign language training gave us grounds to include two subjects in the master's program for future education managers: "Foreign language in the scientific sphere" and "Foreign language for business" in the module "Foreign Language in the professional domain". The key concepts of the approach proposed by them are self-education and self-management, as well as the importance of learning by independently searching for the necessary information and its interpretation in the students' own foreign language context (Kurikova and Nadezhdina, 2013).

For a future manager in the sphere of education, it is important to develop personal and professional qualities that contribute to the formation of their readiness for staff consolidation, communicative and leadership qualities, expressed in the ability to establish business contacts, to make people feel positive towards them and be ready for dialogue, discussions, orientation towards mutual consent; to be able to stimulate the employees' activity in the realization of their professional qualities; to be able to organize appropriate interaction between team members.

These are a future professional manager's personal and professional qualities, which will help them in the future to build conflict-free relationships with staff, to build team spirit among members of their team and, in general, to effectively manage the personnel. For the formation of these professional competences, master's degree students develop their individual educational paths for on-the-job training under the guidance of a mentor-tutor.

This approach is based on the prevalence of self-education, self-organization, self-management

in the students' activities and consists in the stimulating or encouraging influence on a person with the aim of their self-realization (self-development) (Knyazeva and Kurdyumov, 2002).

The synergetic approach studied by V.V. Vasilkova (1999) consists in the effects of joint action, cooperation, interaction of various objects of reality; it formed the basis for the development of evaluation tools by including them in interactive forms of education (trainings, business games, case studies, discussions, etc.).

Therefore, in NEFU while training future managers in the sphere of education as a result of covering the master's educational programs "Project management in education" and "Management in professional education" it is planned that graduates will acquire the following competences: general cultural, general professional, professional and special.

Professional competences are projected according to the types of activity in accordance with the Federal State Education Standards for Higher Pedagogical Education 44.04.01, in terms of which management, research, design and teaching activities are of higher priority.

Interdisciplinary integration is carried out on the basis of cyclic, interdisciplinary and intradisciplinary links and is a logically completed structure of multidisciplinary knowledge. Such integration not only complements the content of one subject with the knowledge from another one, but combines them and provides active preparation developing professionally important skills and personal qualities rather than narrow subject training (Vishnyakova, 2007).

The formation of scientific concepts on an interdisciplinary basis is facilitated by pedagogical, common didactic and psychological conditions:

- 1) time-coordinated study of individual academic subjects, where each of them relies on the previous conceptual basis and prepares students for successful acquisition of the concepts of the subsequent subject;
- 2) the need to ensure continuity and consistency in the development of concepts; concepts that are common for a number of subjects, must continually develop from subject to subject, be filled with new content and enriched with new connections;
- 3) unity in the interpretation of general scientific concepts;
- 4) excluding repetition of the same concepts in the study of various subjects;
- 5) implementation of a unified approach to the definition of the same classes of concepts (Chebyshev, 1998).

The implementation of these functions makes it possible to provide all-round education for students, which is why the educating function is an integrating one.

Integrated courses can become the most acceptable way of forming an integral type of cognition with the existing subject-block education system. The methods of their development and construction are different and depend on setting goals, the degree of integration of the integrated subjects in the general problem field, the nature of the interdisciplinary connections (direct, indirect) and, finally, the authorial individuality of the developers.

Creating a module requires:

- agreement in terms of time of studying individual academic subjects, where each of them relies on the previous conceptual basis and creates the basis for the successful acquisition of concepts on an interdisciplinary basis;
- continuity and consistency in the development of concepts, providing for their continuous development, filling with new content, enrichment with new connections;
- unity of interpretation of common scientific concepts;
- implementation of a unified approach to the organization of the learning process in all module components.

Interdisciplinary integration at the present stage is impossible without computerization of education. One of its directions is the creation of interdisciplinary network of educational and



methodological complexes consisting of:

- a subject syllabus;
- methodological recommendations for the implementation of practical and laboratory-based work;
- tasks for self-study;
- a bank of assessment tools;
- sample questions for exam or test preparation;
- methodological recommendations for a thesis (if it is included in the curriculum);
- a list of references and Internet;
- an electronic course of lectures;
- materials for further in-depth study of the subject;
- criteria for evaluating learning outcomes.

The complex of the above subjects corresponds to the principle of the initial modularity of the course, as it presupposes a clear structure and dynamic presentation of the material, the relevance of the knowledge obtained, the opportunity to apply a variety of didactic tools, for example, integrated lectures, projects, etc.

The problem is that a future specialist should have the skills and professional mobility to react quickly to the constantly emerging changes in practical and scientific activity.

Thus, interdisciplinary integration is one of the most important areas for improving the preparation of students in a modern higher educational institution.

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## **4. Conclusions**

The process of professional training of specialists is considered as an integral and synergetic educational system, in the center of which is a student's personality, which in turn is also a complex self-organizing system.

It is necessary to emphasize that systems including several complex system components that make up an integral synergetic system are actually realized in the conditions of diversity, fragmentation, randomness, spontaneity and unpredictability.

At present, the use of the synergetic approach plays a considerable role in the formation of a specialist in education management, and the result of the educational process organization is training a specialist with a wide range of professional qualities.

Some of these qualities are specific for a manager, while others are more general and are considered compulsory for graduates of any pedagogical educational institution. When training specialists in the field of educational management, multivariance means creating the conditions of choice in the educational environment of a university and giving each person a chance of individual movement towards success, encouraging the independence of choice and making a responsible decision, ensuring the development of an alternative and independent path. More specifically, this choice consists in the ability to determine the individual path and pace of education, to reach a different level of education, to choose the type of institutions, educational subjects and teachers, the forms and methods of instruction, individual means and methods, relying on the synergistic principles of pedagogy.

The results of the study made it possible to identify the main features and trends in the organization of educational process such as the introduction of new subjects like "Expert Project Management in Education", "Strategic Development of Educational Systems Based on Project Management", "Designing Scientific and Methodological Work in an Educational Organization", "Psychological and Pedagogical Foundations of Inclusive Education", "Legal Foundations of Project Management in Education", "Modeling of Career Guidance Work in Regional Educational

Environment” and others, as well as the introduction of new educational technologies, professionally-oriented forms and methods of training at higher education institutions.

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1. Candidate of Pedagogics, Associate Professor of the Pedagogy Department, Pedagogical Institute, M.K. Ammosov North-Eastern Federal University, Yakutsk, Russian Federation, the Republic of Sakha (Yakutia). Contact e-mail: [psv1148@mail.ru](mailto:psv1148@mail.ru)

2. Doctor of Pedagogics, Professor, Head of the Department of Informatics and computer Science, Pedagogical Institute, M.K. Ammosov North-Eastern Federal University, Yakutsk, Russian Federation, the Republic of Sakha (Yakutia). Contact e-mail: [elizafan@rambler.ru](mailto:elizafan@rambler.ru)

3. Doctor of Pedagogics, Professor, Head of Pedagogy Department, Pedagogical Institute, M.K. Ammosov North-Eastern Federal University, Yakutsk, Russian Federation, the Republic of Sakha (Yakutia). Contact e-mail: [allanikol@list.ru](mailto:allanikol@list.ru)

4. Candidate of Pedagogics, Associate Professor of the Pedagogy Department, Pedagogical Institute, M.K. Ammosov North-Eastern Federal University, Yakutsk, Russian Federation, the Republic of Sakha (Yakutia). Contact e-mail:

[osipova\\_op@mail.ru](mailto:osipova_op@mail.ru)

5. Candidate of Pedagogics, Associate Professor of the Department of Professional Pedagogy, Psychology and Education Management, Pedagogical Institute, M.K. Ammosov North-Eastern Federal University, Yakutsk, Russian Federation, the Republic of Sakha (Yakutia). Contact e-mail: [kaland211@mail.ru](mailto:kaland211@mail.ru)

6. Candidate of Pedagogics, Associate Professor of the Social Pedagogy Department, Pedagogical Institute, M.K. Ammosov North-Eastern Federal University, Yakutsk, Russian Federation, the Republic of Sakha (Yakutia). Contact e-mail: [kira-allekseeva.7@mail.ru](mailto:kira-allekseeva.7@mail.ru)

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