



INFLUENCE OF THE SYSTEMIC APPROACH IN MODERN EDUCATION ON THE DEVELOPMENT OF STUDENTS' CREATIVE ACTIVITY AND PERSONAL QUALITIES

INFLUENCIA DEL ENFOQUE SISTÉMICO EN LA EDUCACIÓN MODERNA EN EL DESARROLLO DE LA ACTIVIDAD CREATIVA Y LAS CUALIDADES PERSONALES DE LOS ESTUDIANTES

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ABSTRACT

The study aims to analyze the application of the systemic approach in the development of creative activity in students. The study was conducted based on scientific articles. Using scientific literature analysis and an expert survey, the authors outline approaches to the concepts of system and creative activity as pedagogical categories, the main tools and procedures that constitute creative activity, and the components in the development of creative activity in compliance with the systemic principle. The study suggests that the systemic approach enables teachers to determine the methodological strategy and identify strategic provisions for the development of creative activity in university students.

Keywords:

Systemic approach, systemic principle, training system, creative activity, students.

RESUMEN

El estudio pretende analizar la aplicación del enfoque sistémico en el desarrollo de la actividad creativa de los alumnos. El estudio se realizó a partir de artículos científicos. Mediante el análisis de la literatura científica y una encuesta a expertos, los autores esbozan los enfoques de los conceptos de sistema y actividad creativa como categorías pedagógicas, las principales herramientas y procedimientos que constituyen la actividad creativa, y los componentes en el desarrollo de la actividad creativa en cumplimiento del principio sistémico. El estudio sugiere que el enfoque sistémico permite a los profesores determinar la estrategia metodológica e identificar disposiciones estratégicas para el desarrollo de la actividad creativa en los estudiantes universitarios.

Palabras clave:

Enfoque sistémico, principio sistémico, sistema de formación, actividad creativa, estudiantes.



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INTRODUCTION

The need for further improvement of the education system relates to the increasing pace of economic and social changes. Humanistic direction has recently become prevalent due to the recognition of the role of the human factor. While the existing education system follows the needs of the economy and trains personnel for all its industries (Akhmetshin et al., 2023), the transition to the post-industrial stage of its development fundamentally changes the requirements for the functions of the education system and the content and methods of education and teacher training. The product of the new education system should be not a narrow specialist but a creative person with systemic thinking.

The insufficient systemic effect of modern education is caused by shortcomings in the theoretical concepts of learning. Most often it is regarded as intellectual and cognitive activity. Hence, its goal is to provide students with scientific knowledge and skills. Learning is artificially separated from other students' activities.

The main reasons for problems in the education system have been the rapid growth of the total volume of scientific information that must be absorbed mechanically daily, the system of teacher training focused on the reproductive transfer of information rather than the development of creative thinking and communicative qualities, and the lack of educational technologies capable of providing mass training for specialists in creative professions, the range of which is growing rapidly. The education system also does not provide opportunities for the subject's active participation in social relations and the creation of their own life, their ability to realize themselves in the rapidly changing world.

Studies on education emphasize the need to develop an educated creative person. The improvement of the higher education system based on the systemic approach deserves special attention, as it provides great opportunities to model and predict the development of the educational environment and improve didactic aspects in the content of education and educational process management.

The effectiveness of the learning process as a pedagogical influence depends on the observance of the training principles. There is no common definition for the didactic category of training principles. The existing interpretations can be distinguished into those that regard the training principles as *“basic provisions, which determine the content, organizational forms, and methods of training in accordance with the general objectives and patterns of the educational process”* (Podlasyi, 2009, p. 287). We should also highlight the view of didactics based on the concept of requirement. Krysanova (2004), describes the training principles as “a system of initial, main didactic

requirements, settings to the learning process, the implementation of which ensures the effectiveness of practical activities”. (p. 62)

The implementation of each training principle is necessary for the comprehensive development of the human personality. However, the importance of the systemic principle for modern higher education should be emphasized. Only knowledge acquired in its logical relationship and continuity enables the formation of a knowledge system, the possibility of its further use, and a high quality of assimilation (Barreto & Mayya, 2023). The leading condition of purposeful personality development is an organized system of educational activities.

Among the factors influencing personality development, systemic thinking is one of the most important. Putivtseva (2008), stresses the need to form a knowledge system, showing that this need stems from the modern stage of scientific knowledge characterized by a complex structure. Zankov (1999), focuses on systematic and system learning, which is associated with the fact that teachers, returning to previous topics, unintentionally separate the elements of the knowledge system from each other. Zankov (1999), notes that often the sections of the material are studied separately and then assimilated without reference to previous knowledge, which leads to the “isolation of parts of the training course” (p. 278).

According to the authors Mesutoglu et al. (2024), notes that the possibility of forming a knowledge system is seen as a logical result of meeting the requirement of absorbing knowledge in accordance with scientific logic. Mesutoglu et al. (2024), emphasizes that the concepts of system and systematicity are not identical. While the training principles are closely interrelated and complementary, their meaning and content differ significantly. Pirozhko et al. (2015), define system as “the quality of a body of knowledge that characterizes the presence of structural connections in the student's consciousness <...> that correspond to the links between knowledge within scientific theory” (p. 2). Systematicity implies *“that the learner's mind has meaningful and logical links between the individual components of knowledge”* (Pirozhkov et al., 2015, p. 3). Ismoil (2024), notes that systematicity and system are closely related because they imply integrity and consistency. However, a linear and sequential arrangement of knowledge elements is not key to understanding their hierarchical status and integrity. To be comprehensive, knowledge must be internalized in a system with an understanding of the interdependence of its elements. Without implementing the systematicity principle it is impossible to achieve the systemic principle. A deep understanding of the subsequent elements is unattainable without observing the order of their presentation and focusing on the causal

links between the studied phenomena and the previously examined ones.

System is regarded not only as a didactic principle but also as a quality of knowledge. According to Ahmod & Zhang (2021), systemic knowledge is structured in the student's mind in a scheme: basic scientific concepts – basic provisions – consequences – applications. Kudryashov (2009), calls systemic knowledge that forms a representation of the scientific picture of the world generalized knowledge, noting that it shows patterns of general processes, helping to create new knowledge about phenomena. Kudryashov notes that systemic knowledge is marked by a high level of abstraction and that its emergence requires a transition from specific objects and phenomena to their abstract models.

Many researchers focus on the best methods to develop creative activity in university students. The authors (Teltevskaja, 2013; Le, 2023), theoretically substantiate the development paths of a student's socially active personality.

Studying the nature of activity, (Belorussova & Mikhailova, 2015; Habib et al., 2025), consider its participants' actions an important characteristic. The researchers argue that action is a form of activity whose structure consists of a purpose, behavior, and result. Behavior as a component of action has a personal nature to it. Behavior and action are two sides of human activity. The development of a student's activity is determined by their understanding of the goals of professional activity, the desire to realize their capabilities in the professional sphere, and their willingness to approach professional tasks unconventionally. Creative activity is seen as a condition and result of the educational process in higher education.

Pedagogical practice shows that creative activity does not occur or form spontaneously. Its development is impossible without targeted, systematic work and the modernization of the content, methods, and technology of the educational process in higher education (Tolmachev et al., 2022). Researchers explore the issues of developing an active and creative personality in students, theoretically substantiating and practically testing the methods of forging a creative style of activity and an active professional position.

According to the authors, Guo et al. (2025), believes that the laws of spiritual development and the processes and changes in a person's inner world should become the main guidelines in professional training. Guo et al. (2025), sees activity as the main means of developing personal value orientations. In the researcher's opinion, personality-oriented education should be the foundation of learning in higher education.

The development of students' creative activity presupposes significant adjustments in their professional training. Khairullina et al. (2016), rightfully sees the solution in changing students' educational positions, making them more active, and reinforcing their creative orientation.

Considering creative activity as an indicator of professionalism, many modern researchers speak of the need to change outdated educational and disciplinary models of education to a personality-oriented paradigm, that is, to deploy the informational, shaping, developing, and catalyzing aspects of modern education. The old principle of working according to the logic of the academic subject and learning a certain amount of knowledge and skills does not meet the changed conditions. Faced with high competitiveness and demand, students need high-quality training, at the heart of which lies personality-oriented education (Dorofeev et al., 2021). The article aims to analyze the features of the systemic approach in developing the creative activity of students.

MATERIALS AND METHODS

In accordance with the systemic approach to the development of creative activity in students, the study employed a mixed qualitative and quantitative approach. We collected the data through an analysis of scientific literature and an expert survey via email and processed and analyzed the survey results.

In the first stage of the study, the sources of information needed to realize the objectives were selected. We obtained data for the study from monographs, as well as articles and reviews published in journals indexed by Scopus and Web of Science. Based on the analysis of the source base, we established the approaches to the concepts of system and creative activity as pedagogical categories, determined the main tools and procedures constituting students' creative activity, and identified components in the development of students' creative activity in compliance with the systemic principle.

In the second stage, the expert survey was carried out to determine the significance of the identified tools, procedures, and components of the development of creative activity. A sample of 45 experts was deemed sufficient, and the experts were emailed invitations to participate in the survey. The criterion for the selection of experts was the expert having at least three publications on the research problem in peer-reviewed journals. Agreement to participate in the study was expressed by 41 respondents, after which they were sent emails with questionnaire items. Based on the received answers, the ranks and weights of the tools and procedures of creative activity

and components of its formation were determined, the final values describing their importance from the experts' point of view.

For a more objective analysis of the expert survey data, the consistency of expert opinions was evaluated using mathematical processing based on Kendall's coefficient of concordance.

RESULTS AND DISCUSSION

The analysis of scientific literature and the results of the expert survey allowed us to identify the main tools and procedures that constitute students' creative activity and present them in order of importance (Table 1).

Table 1. Basic tools and procedures that constitute student creative activity.

Tools and procedures	Rank	Weight
independent application of the previously learned knowledge and skills to a new situation	1	0.42
identifying a problem in a familiar situation	2	0.33
identifying a new function of an object	3	0.25
determining the structure of the object (problem)	4	0.42
seeing alternative solutions or their method	5	0.33
combining the previously learned modes of activity in accordance with the problem at hand	6	0.25

Source note: compiled based on the expert survey; the coefficient of concordance $W = 0.73$ ($p < 0.01$), indicating a strong consistency of expert opinions

Observance of the systemic principle implies the realization of the following components in the development of creative activity (Table 2).

Table 2. Components in the development of students' creative activity based on the systemic principle.

Components in the development of creative activity	Rank	Weight
personal-humanitarian orientation of the entire educational system	1	0.42
a systemic understanding of professional activities	2	0.33
timely diagnostics of the level of development of students' creative activity and its influence on their professionalism	3	0.25
directing all didactic means to the development of the creative style of activity and the student's active position in academic work	1	0.42
learning the methodology of creative work and understanding the basics of professional work	2	0.33
development of professional abilities and the introduction of pedagogical monitoring into the educational process	3	0.25

Source: Prepared by authors

Developing the idea of reorienting the nature of learning from subject-oriented to personality-oriented, we believe that the quality of specialist training is tied to the reorientation of higher education towards the development of student personality. Regrettably, this process still lacks focus and scientific and methodological support. Thus, the personal transformation of the educational process is spontaneous, slow, and ineffective.

Creative activity as a complex formation can be not only the goal, but also the result of the educational process if teaching practice introduces personality-affirming situations, transfers communication to the dialogical plane, develops positive self-images (including professional), and changes the position of participants in the pedagogical process from a passive-executive to an active-creative one (Guo et al., 2025).

The goals of higher education should ensure the rejection of universal models of education and focus the educational process on shaping an individual way of life and thinking and the socio-cultural and attitudinal self-determination of students (Dorofeev et al., 2021).

The key mechanism of management is the person's activity, incorporated into the educational process as its active subject and co-author. The outcome of this management is the development of the person's subjective properties: independence, autonomy, self-discipline, self-control, self-management, self-regulation, ability to reflect, etc. Creative activity is the goal, condition, and result of modern learning so that each student can independently formulate and



set goals, make decisions, act, and take responsibility for their actions and results.

Noting the need to rely on students' creativity in solving educational tasks, we adhere to the position of Habib et al. (2025), that no matter how much one encourages a student to be creative, all is in vain until the student masters the mental tools, creative procedures, and heuristic methods, i.e., the structures that constitute creative activity.

Shaping creative activity in the learning process implies that this process is organized so that it constantly collects activities from students' actions into a system subordinated to certain goals and principles. This is a complex way of solving learning problems through overcoming difficulties and searching for optimal solutions relying on personal experience, professional perceptions, and aspirations. The positive dynamics of creative activity should be combined with the need for personal and professional growth, non-standard performance of educational functions, and sustained interest in self-development, self-improvement, and professional self-assertion.

All components of professional training should help the student to find their place in life, reach self-fulfillment, and know themselves and their capabilities. Students need to realize themselves as individuals. Educational activity is a means of self-realization for students. The knowledge and skills acquired by students in professional training are not so much learning objectives as the means for self-realization. The content of professional training in higher education and the acquisition of knowledge and skills cease to be the ultimate goal of higher education and begin to serve as a systemic means of self-change and self-development. The process of reflection and orientation on the methods of action cannot be achieved without a certain level of activity and a creative attitude to learning.

Creative activity development is a constantly changing dynamic system based on the systemic approach to the organization of higher education. Each element of this system is an independently active unit that bears a source of active action of students who do not take anything for granted but constantly process and develop their activities. The aim is to ensure that training creates a need for cognitive activity, self-education, and self-assertion (Shafazhinskaya et al., 2023).

The developmental aspect of professional training in higher education is possible if the teacher cultivates new qualities in students, rather than promoting their own goals, objectives, and programs.

CONCLUSIONS

Our results show that the systemic principle in teaching implies the structured nature of educational material in accordance with scientific logic, its consistent delivery within the system-invariant interrelation of its parts, and the disclosure of the hierarchical structure of the parts of knowledge. As a quality of knowledge, system means that students are aware of the structural links between the elements of educational material and the holistic nature of knowledge and develop an understanding of the scientific picture of the world.

The systemic approach enables teachers to determine the methodological strategy and identify strategic provisions for the development of creative activity in university students. It is essential to abandon the conviction, formed within the framework of traditional pedagogy, of the gradual and linear nature of a person's development and professional self-establishment. In traditional teaching based on the gradualism and linearity of the development process, there is no place for the student's personality.

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