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METHODOLOGICAL APPROACHES TO THE FORMATION OF PROFESSIONAL SELF-DEVELOPMENT OF FUTURE IT-SPECIALISTS

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Abstract: The article analyzes the theoretical foundations of methodological approaches to professional self-development of future IT-specialists. The aspects of each approach to the formation of personal potential of future IT-professionals are characterized considering the specifics of self-development in Computer Sciences. Epistemological approach as well as personal, active, creative, systematic, competence, synergetic and acmeological approaches to the formation of professional self-development of future IT-specialists are considered in the article. Some aspects of methodological approaches to professional self-development were defined at the stage of organizational activity.

Keywords: informatization of education, professional training, professional competence, professional development, personal potential, personal approach, professional self-development, methodological approach

INTRODUCTION

Due to the informatization of higher education teachers obtain new facilities to manage cognitive activity of future specialists. There are growing demands to the intellectual, scientific and cultural level of teachers as well as to their professional skills and creativity. Thus, among the important criteria of expertise in modern professional training are Computer Science and Information Technologies, which are becoming an integral part of everyday modern life [9].

MATERIALS AND METHODS

Many Ukrainian and foreign scientists have drawn attention to the methodology of scientific research. The problem of the methodology of teaching techniques has been investigated by V. Andrushchenko, V. Zhuravlyov, V. Zahvyazynskyi, G. Shchedrovytskyi, I. Zyazyun, V. Kraiewskyi, W. Kremen, E. Yudin, M. Skatkina et al. A new approach to the methodology of modern scientific and pedagogical research is presented in the works of O. Adamenko, L. Vakhovskyi, V. Kurylo, E. Khrykova et al.

Aspects to be solved: Methodology of each specific science is revealed through relatively independent approaches. According to E. Yudin, methodology constitutes a necessary component of any activity since it has become the subject of awareness, education and rationalization. The scientist defines methodological approach as fundamentally methodological orientation of research, a point of view to consider an object of study (a method to define an object), a concept or a principle managing the overall strategy of studies [10, p. 160]. The problem of methodological approaches in formation of professional self-development of future IT specialists is up to date in modern scientific and educational literature.

The primary goal of this study is to examine the approaches in formation of professional self-development of future IT-specialists.

RESULTS

Epistemological approach, as well as personal, active, creative, systematic, competence, synergetic, and acmeological approaches are among the methodological base aimed at formation of professional self-development of future IT-specialists.

Epistemological Approach: Epistemological approach is based on the theory of knowledge and studies the problem of the nature of knowledge and its boundaries, knowledge in relation to reality, explores common prerequisites of knowledge, finds out conditions of its reliability and validity [20, p. 241]. Modern scientific epistemology is based on the following fundamental principles: objectivity, awareness, active creative reflection, dialectics, practice, historicism, definite truth and operates with such concepts as knowledge, consciousness, feeling, reason, and truth [19].

Epistemological approach to professional self-development of future IT specialists is focused on a cognitive outcome and is characterized by personal achievements as a result of knowledge mastering by conveying the real, actual situation in teaching and learning. Applying of epistemological approach is

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aimed to achieve a progressive positive change and is based on the combination of logical forms of practical solutions with professional self-development and intellectual potential, contributing to the accumulation and development of a personal experience with the use of modern information and communication systems, software, networks, resources and technologies. Such achievements of the future IT-specialists are formed and developed to the professional level in the information society.

Epistemological approach focuses on achieving personal prospective changes of future computer professionals and is a powerful instrument to obtain individual knowledge, abilities and skills in education. That is why the personal approach is also important as it reflects the integration of a person in social structure and relationships and treats a personality as a socio-cultural reality [4, p. 625].

The Personal Approach: The current goal in training of future professionals is continuous and integral self-improvement of the performance, professional orientation, and continuous education based on personal approach to self-development of competencies, knowledge and skills [7, pp. 152-156].

The personal approach to professional self-development of future IT-specialists is characterized by growth, formation, and integration of important personality traits, professional knowledge and skills. This is a potential way to self-actualization, self-expression, self-knowledge, self-control and self-identity as active and qualitative transformation of one's inner world which synthesizes creative and valuable characteristics for the career [7, pp. 152-156]. This approach provides personal assistance in recognizing ourselves as individuals, in identifying and discovering one's capabilities and unique self, in the personally meaningful and socially accepted actions to self-determination, self-realization and self-affirmation.

We consider the personal approach to professional self-development of future IT-specialists as a complex self-regulating system based on self-transformation according to the need for self-actualization, self-expression, self-knowledge and personal development undertaken during behavioral self-regulation and self-realization aimed at achieving significant professional goals.

Activity Approach: The notion of activity approach is based on motivation, performance and actions to achieve the planned results and provides a basis for the transition of social action in the realm of independent professional self-development and successful mastering of new knowledge, skills, competencies, types and methods of work. The emphasis on activity is a major factor, essential for future professional career based on integrity, interactions of participants and components of the educational process through the development and improvement of ideas and cognitive process as a personal enrichment of knowledge to form professional skills. Activity approach motivates the future IT-specialists to master different types of information technologies and software systems by acquiring personal experience in continuous professional development and improvement, self-development, acquisition of knowledge, abilities and skills necessary to work in modern IT. Its main advantage is the ability to transform their activities in developing of personality-oriented education, adapting and carrying out of the actions and the formation of professional self-development that is targeted to direct and activate the professionally significant system of actions on qualifying result. Activity approach to professional self-development of future IT-specialists includes: training aimed at achieving of socially desired results and objectives of personal, social and cognitive development; personal development to meet the requirements of the information society; enhancing of educational techniques and ways to expand the scope of individual development in order to increase creativity, cognitive motives and actions; providing the succession of activity types for progressive forms of cooperation and achievement; increase of creativity, cognitive motives and actions aimed at primary outcome of education.

Creative Approach: Formation of independent creativity of future IT-professionals requires focusing on fundamental and applied knowledge and development of creative, cognitive abilities for professional performance and self-development. Creativity serves as an important component of modern professional training systems and is a process resulting in new creative achievements. The development of creativity is possible in certain environment that stimulates creative thinking, promotes the independent development of one's creative potential.

The creative potential of professional self-development of future specialists is based on professional and social experience, in-depth analysis of the problem, integrated original solutions to boost creative imagination and implementation of experimental ideas. The use of a creative approach to professional self-development provides a heuristic search to implement a conception, analysis of ideas and assumption check to achieve a desired result, the formulation of new objectives and their original decision. Thus, creative approach is manifested through new ways of self-development, elements of creativity, innovation, originality leading to innovation in professional performance.

System Approach: The use of IT in education creates a promising future for professional orientation in terms of the information society, it gives a wide arsenal of modern methodological approaches and technologies to master knowledge in the process of creating a coherent picture of the world, including a system approach, computer simulation and experiment, educational and scientific research, etc [13].

System approach appears to be an effective methodological tool of scientific knowledge; it allows us to provide a comprehensive study of the professional self-development of future specialists and to analyze the process as an educational system considering the complexity of it. It helps to clarify the interaction and connections of many systems and allows components division of complex phenomena into their constituents determining their combination and methods of their subordination and interaction. This approach is used to determine the integrity of the system where the main components are purpose, content, methods, forms, tools and performance [6, pp. 26-30].

The scientific value of the system approach is in the fact that it reflects the ideological level of study as a universal method of knowledge and technology, opposed to spontaneity and subjectivity, and creates conditions for stability and consistency of scientific research [17].

The system approach to information when applied in higher education can serve as a model for future teachers whose further professional performance will considerably facilitate effective informatization of the entire education system [6, pp. 26-30]. The system approach is aimed at professional self-development of future IT-specialists and reveals the integrity of educational facilities, detects interaction of all components, reveals the diversity of connections and relationships between them, determines their structure, organization and management principles in professional performance. It provides a comprehensive study of the professional self-development of future specialists and analyzes this process as the educational system [6, pp. 26-30].

Competence Approach: Nowadays the development of professional competence of future specialists is realized through the introduction of computer technologies and dynamic use of information and communication technologies that contributes to the upgrading of professional knowledge and skills, enhances teaching and learning of professionals, encourages scientific and cognitive motivation, enhances performance, promotes educational innovation and improvement of professional skills, personal development and growth of professional qualifications. Competency-based approach reveals the problem of professional competence of future IT-specialists according to the current requirements of the information society [8, p. 120]. Competence approach can replace the traditional system of knowledge and skills with set of competencies that will be formed in the future leading to the updated content in the training process [3]. It serves as a progressive reorientation of the educational paradigm with the vast transfer of knowledge and skills to create the preconditions for mastering a set of competencies necessary for sustainable life and competitiveness in the modern multivariate socio-political, economic informational and communication environment [15, pp. 138-144].

Competence approach to professional self-development of future specialists promotes the formation of an integrated system of professional knowledge and skills that are included in the subjective experience and acquired personal value important for self-development of future IT-professionals; shapes the direct result of professional activity, namely, acquiring of key competencies allowing to adapt successfully to the changing educational paradigms and the needs of global trends in economic integration and globalization of the market; creates a combination of personal self-development of future professionals and self-experience of social adaptation to address the philosophical, scientific, educational, professional, communication, organizational, cognitive, moral issues of education and determines its purpose and reflects a set of common principles of educational process with the assessment of its outcomes. Competence approach as one of the key methodological approaches in professional activity performs a formative role and extends complements and enhances other approaches.

Synergetic Approach: Synergistic approach promotes the formation and evolution of the education system as a complex open system, with a new view and understanding of the phenomenon of self-organization, self-development, nonlinearity, probability and of many faceted reality of the world, multivariate ways of development and inability to describe it within the classical theories and models that give a linear representation and form linear thinking [5, p. 9]. Synergetic interpretation tries to understand and explain the nature of complex systems, their organization, the source of self-development, based on the fact that such an extremely complex systems as the natural world, human being and society are subjected to general universal laws of evolution and self-organization [18, pp. 41-42]. Synergetic approach to education is aimed at universal mechanisms and evolution of complex systems of any type,

both natural and human-related, including cognitive systems [11, p. 175]. Synergetic approach to the formation of professional self-development of future IT-specialists contributes important methodological impetus to understanding of complex phenomena of the world of an individual, freedom, development, education, nonlinear scientific thinking and global personal view. Being based on the requirements of the market utilitarianism, synergistic understanding of scientific problems contributes to the structuring at the current system of interdisciplinary knowledge and training of pragmatically minded professional capable of efficient operating of information, IT, software systems and highly specialized software with novelty effect and performance structure including transformation of group interaction between engaged professionals.

Acmeological Approach: Acmeological approach is also an important component in the formation of professional self-development of future IT-specialists. It is aimed at the development of internal resources and mechanisms of self-education: motivation achievement, self-development, creativity, priority of spiritual and moral values and personality development goals, primarily focused on high level of professionalism and professional achievements [2, p. 15]. The approach involves specifying the conditions and factors that allow future professionals to reach their own acme; techniques, being developed to achieve a personal acmeological level of expertise, defining the criteria and standards of professionalism; working out of the acmeological model of professionalism and professional identity [16, p. 53].

According to B. Ananiev, acmeological approach is a holistic approach to the study of man as an individual, a person or a subject of activity throughout the life course. The whole range of issues researched by the scientist was ultimately subordinate to theoretical and methodical substantiation and facilitation of acmeological services, aimed to help people in solving their professional and existential problems [1, p. 231]. Integration of acmeological approach into formation of professional self-development of future IT-specialists is manifested through their professionalism and is based on acmeological laws of fundamental education [12, pp. 5-25].

CONCLUSIONS
Methodological approaches to the formation of professional self-development of future IT-specialists are defined by interaction, interrelation and interdependence of pedagogical phenomena and processes based on methodological principles of science, objectivity and consistency grounded on the implementation of innovative approaches to the professional training.

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