RESEARCH ARTICLE

THE BASIC PRINCIPLES OF THE SYNERGETIC APPROACH TO THE TRAINING

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INTRODUCTION

Synergetic education is aimed at improving the role of the fundamental base of education, which should be understood in the following context: education should be based on the idea of paradigmatic changes, the integrity of the surrounding lively and lifeless world, taking into account its transition to the interdisciplinary stage. However the synergetic education cannot be separated as an independent part of incessant education. It can be accomplished by updating teaching materials with synergetic content and integrating subjects of natural sciences. In this regard, the synergetic education shows itself as an organic part of modern education (Tahira Allahyarova, 2007). The aim of the synergetic education is to form a comprehensive personality by forming his/her synergetic culture. But it includes the followings:

- To form a modern outlook that adequately reflects today’s spiritual world and social-nature system of human;
- Forming a modern thinking style aimed at the organization of the scientifically motivated system of coordinated actions to harmonize the system of mutual relations in the “human-society-nature-culture area”;
- Acquaintance with the main laws, concepts and principles of the self-forming theory; the essence nature of nature and social events, the interdependence and mutual influence of society, nature and human and to master the general and special knowledge about them;
- Education of youth the responsible attitude to themselves, the society and the environment;

The tasks of synthetic education are the followings:

- The unity of nature, society and human, the objective laws of noosphere; the interaction of society, nature and human;
- The universal problems and their solution ways and methods;
- To develop the intellectual and practical skills to explore the evolution of the environment and ensuring to master the knowledge about the improvement of nature, society and people (Kalimullina, 2014).
- Education of values orientation of the personality in the field of active practical attempt directed to the agreed development of humanity, society and nature, spiritual and material world, motives, demands, ecological and cultural conscious behavior habits;
- Probabilistic and non-linear analysis in non-standard situations, development of the alternative thinking skills in the selection of methods for solving universal problems;
- The formation of non-linear thinking styles, the personal attitude to the environment, the ability of choosing the direction in the technologically changing world;
• The integration of natural sciences and humanitarian culture aimed at the understanding and resolution of universal problems;
• Teaching the synergistic analysis, prediction and modeling ways of the evolution of specific events in which social and natural factors are interconnected (Haken, 1980).

The main didactic principles of the implementation of synergetic education are:

• The principle of humanism – it means the formation of the favorable environment for humanity to understand the nature and culture activity, the protection of life on the earth, to take care of spiritual, ecological and energetically disaster, to form a new conceptual identity capable of salvation of humanity;
• The principle of humanization - the existing content of the education is reconstructed through the inclusion of ideas of nature and society and cultural universal values;
• The principle of making ecology – it creates conditions for understanding that survival of humanity is possible only in the harmonious interaction of society and nature; any unintentional step of the humanity in the adoption of the objects of nature can cost more for the future generations;
• The principle of integration - it involves the use of interdisciplinary approaches in design of synergetic education. It reflects the universality of synergetics as an interdisciplinary theory and its ability to integrate various aspects of human theoretical knowledge and practical activity, as well as the ability to express unity of human, society and nature (Zamanov et al., 2018).
• The principle of coordination of educational subjects – it sets the basis for agreed educational activities and eliminates duplication of training topics and issues;
• The principle of the relationship between the synergetic education with the requirements of practical activities of human and society - the rejection of the concept of the evaluation surrounding socio-natural world and the formation of the training-education process in which the world is analyzed from the evolution to the problems and challenges of the real life;
• Evolution means the transition from the abstract concept of the surrounding socio-natural world and the formation of the training-education process in which the world is evolved from evolution to the problems and challenges of real life;
• the principle of variability – it discovers the diversity of educational programs that provide the individual’s needs in teaching the synergetic components of education;
• The principle of problem – it is an important condition for the development of synergetic thinking and perception of motivation in the learning and educational process;
• The principle of being systematic – it considers that the knowledge gained from reflecting the self-organizing characteristics and mechanisms of various socio-natural objects should have a systematic structure;
• The principle of inheritance of educational programs and pedagogical technologies ensures the continuous development of synergetic culture, the optimal transition of human to the next stage of the synergetic education. The inheritance is based on the fundamental content of the synergetic education;
• the principle of unity of common and synergetic education - self-forming in existing educational programs;

In order to apply the principles of synergies to the analysis of processes in education it is necessary to define how much synergetics can be viewed in the education system. That is why it must be studied from the position of the synergetics methodology as an open, self-organizing, non-linear system. The main concepts of synergetics are clarity, non-linearity, non-regularity. The theory of self-forming uses concepts such as bifurcation, fluctuation points, dissipative structures, attractor and friction (Grof, 1993). The education system can be considered open, because, firstly, there is always a process of information exchange (feedback) and purposeful information among teachers and students. The new goals, methods and means appear during this process. Second, the content of education changes, as it does not currently correspond to the student’s knowledge and skills. Non-linear appears both in the process and the conclusion. The results of the educational process are always different from the participants’ opinions. Third, the ever-growing educational information space pulls out the system from the stable balance. As it is known, according to the non-linear laws synergetics is based on the principle of evolution of the surrounding environment. In the broad sense, this idea can be expressed by the multivariate or alternative of choice. Multivariate in the education system is the creation of an environment of choice and the opportunity for each subject to succeed in individual action, to encourage independent selection and decision, and to ensure the development of alternative and independent paths. More specifically, such choice consists of the trajectory of education, the definition of training speed, the achievement of different levels of literacy, types of educational institutions, teaching subjects and teachers, form and methods of training, individual means and methodology, creative tasks and so on (Yakusheva, 2012). The self-forming process is a spontaneous creation, it is a more sustainable existence of new structures in open non-balanced systems. The self-forming means the definite mutual influence in the pedagogical system among the teachers and students. And it corresponds to the requirements of the development of the pedagogical system and derives from the objective conditions of its self-motivation. It allows understanding the development mechanism of the pedagogical process. Other concepts of synergetics are also harmonic with concepts of traditional pedagogy.

Thus, synergetics can act as “a methodological basis for prognostic and management activity in the modern world”. “Synergetics is directed to the search of some universal laws of the evolution of open non-balanced systems of any nature” (Budanov, 2009). Using the ideas of synergetics ideas, firstly, it is clear that complex systems cannot be forced to adopt their development paths; Second, the synergetics testifies that any complex structure system, as a rule, has not a single one, but many personal development paths that response its nature; third, synergetics shows that chaos can act as a self-regulating and self-sustaining structure, a mechanism for extinction. According to the synergetics there is no absolute unbalance in training and absolute disorder; even the chaos becomes the subject of such science. Chaos, coincidence and discipline are not only destructive, but they can also be creative and
constructive in certain circumstances. The conceptual-methodological innovation of self-education ideas is related to the adoption of self-development skills through the use of different systems not only due to the external energy, information flow, but also through its internal capabilities. The new synergistic concept can help the deeper understanding of society, its various subsystems, including complex, non-linear, evolving, open systems such as the education system.

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