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Influence Of Synergetic Approach On The Development Of Science

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Abstract. In the article, the impact of the synergistic approach on the development of science, the reflection of synergistic ideas in scientific creative activity, its specific features, and its epistemological aspects are philosophically analyzed. It is based on the importance of synergetics as a method of scientific knowledge in revealing and explaining the multivariate aspect of the scientific research process. It is recommended to make wide use of its possibilities in the further development of the field of science and scientific research.

Key words: synergetics, science, creativity, creative thinking, scientific creativity, self-organization, knowledge, open system, chaos, attractor, bifurcation, fluctuation.

INTRODUCTION

Today, as a result of complex social and political changes, social and cultural development of the society, further expansion of people's life, knowledge and experience, and an increase in the level of scientific creativity are observed. Knowledge is the main intellectual resource, and education is considered as a source of national prosperity. Education enables the development of a person's creative abilities, the deepening of his participation in economic, social and cultural relations in the society, and an effective contribution to the development of society. From a synergistic point of view, in the development of scientific and creative environment in the educational system, it is necessary to provide an open environment in the continuous education system, that is, to regularly harmonize the national and international standards of the educational system, to retrain the teaching staff working in all educational institutions in accordance with the requirements of the time, to ensure that they are aware of the achievements of world science in a timely manner, and to create important conditions for the use of modern educational technologies.

LITERATURE REVIEW. At the present time, it is important to pay attention to new directions in educating purposeful, talented, independent and creative young people. Because the social and economic development of any society is determined by the thinking, level of knowledge and mental potential, spirituality and culture of the members of this society. Many decrees and decisions have been adopted by our government in this regard. Including: Law of the Republic of Uzbekistan No. ORQ-576 of October 29, 2019 "On Science and Scientific Activity", Law of the Republic of Uzbekistan No. ORQ-630 of July 24, 2020 "On Innovative Activity" and the President of the Republic of Uzbekistan of October 8, 2019 "Higher Education System of the Republic of Uzbekistan 2030 Decree No. PF-5847, October 29, 2020, "On Approving the Concept of Development until 2030" is Decree No. PF-6097, dated October 29, 2020.

RESEARCH METHODOLOGY

Creativity is primarily a product of creative thinking. Creative thinking refers to individual creative qualities. Creative thinking is not just an emotional perception of things and events. Creative thinking (thinking) requires a person to use his intellectual potential. In this sense, creative thinking (thinking) means a unique feeling of the world, seeing it with the eyes of the mind, understanding it with all its being.

Creative thinking is manifested in the ability to identify problems that need to be solved and find a

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new, original solution to solve them. On the basis of scientific creativity, a person lays the foundation for new scientific directions and non-traditional fields of new scientific knowledge. Scientific creativity is knowledge and creative activity related to the development of scientific knowledge, acquisition and use of new scientific knowledge, enrichment of scientific knowledge with new laws and regulations, new scientific principles and theories, and active implementation in various fields of human activity [5]. A person changes the world on the basis of his creative research and shows himself as a creator, creator, inventor. In this process, a person poses various problems, finds a unique solution to the problem, and of course uses a unique approach to such solutions. In the study of these changes, there is a need to form a new direction of scientific creativity with multifaceted and diverse features on nonlinear bases. Although synergetics is being formed as a general philosophical methodology, its impact on scientific and creative research is incomparable. Synergetics is important in revealing the multi-variant face of the scientific research process and in explaining its behavior as an open system. A researcher who is able to properly use the laws of synergetics, works on the basis of the most modern methodology, can achieve great creative achievements in his scientific field [6].

ANALYSIS AND RESULTS. Synergetics is a new way of looking at the world, and it is also a method of interdisciplinary scientific research that analyzes the global evolutionary process based on the generalization of scientific innovations, self-organization, and non-linear thinking. After all, I. Prigozhin and I. Stengers wrote: "Synergetic chaos is not only a destroyer of the world, but under certain conditions it can perform the function of structure for certain reasons"[7] and justified its structure mechanism. Although this way of thinking has not been formed for a long time, its influence on scientific and creative research is incomparable. Because its main concepts and principles differ from other traditional approaches with its new methodological character.

It is appropriate to analyze the reflection of ideas such as self-organization, chaos, bifurcation, attractor, and fluctuation of synergetics in scientific creative activity as follows.

Self-organization is an important form of spontaneous movement without external influence, and at the same time it is the basis of self-management. As Haken noted, "Science is also an open self-organizing system. Some of its periods are similar to the process of the emergence of life described in biology. That is, organic molecules that initially appeared by chance combine into larger structures, and then they suddenly appear in such a new state of order that, as a result, a completely new qualitative function and a transition to a higher-level structure occur" [8]. In synergetics, the essence of scientific transformation processes in science is their transition from one system to another, creation of a new quality and structure, and the process of self-organization [9]. In this case, a phase transition, a change in the state of the system by a jump occurs [10] . This is a transitional period in science, a new, complex "metasystemic transition" or transition of scientific knowledge from low dimensionality to higher - trans dimensionality occurs.

Scientific creativity as a self-organizing intellectual system has certain standards. Self-organization is a set of organizational events or changes that occur in the creative system, which help to ensure their optimal implementation, in particular, in this system of scientific activity. Knowledge, as a self-organizing open system, has the opportunity to self-organize in scientific and creative activity. Self-organization is the optimization of knowledge in such a way that it is directly manifested in practical use. Normative self-

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organization of knowledge in scientific-creative activity shows its systematicity, but also the increase of the quality indicator of knowledge.

The issue of the attractor state of creativity, bifurcation change in creative activity, and fluctuating effects affecting the improvement of the process of scientific creativity is also of special importance. Attractor (Vis. Attract means to draw to itself) refers to the mode and order of motion to which a dynamic system tends over time [11]. Attractors are relatively stable probabilistic states that appear in the process of evolution in open nonlinear environments, it is possible to discuss the predetermination of the future based on the creative ability of people, that is, the future state of the system appears as a creative activity that attracts, organizes, forms, and changes its current state. According to Professor M.N.Abdullayeva, the creativity of humanity allows to choose a new attractor of intelligence and the integrity of high spirituality [12]. Attractors are also important in scientific creative activity. Because it serves to further increase the interest of subjects in relation to various complex realities and objects in the process of scientific and creative research.

Bifurcation is reflected in people's attention to alternative options and their diversity in the process of scientific creativity. It is also explained by the uncertainty of the level of development of promising changes in the scientific creative process and the tendency to division.

According to I. Prigozhin, bifurcation processes indicate the complexity of the system. This process also applies to scientific creativity and indicates its purposeful division as a result of conducting scientific research. As N. Moiseyev noted, "Each state of the social system is a state of bifurcation"[13].

Fluctuation - constant changes, fluctuations and deviations in the scientific creativity of people. It manifests itself as a cause of instability and unevenness. Fluctuations in scientific creative activity are more intuitive. There are two types of fluctuations in creative activity: the first is creative activity under the influence of fluctuations, and the second is fluctuations that arise in the creative process itself. In scientific and creative activity, fluctuations can sometimes be very strong and can completely take over the worldview of the creator and change the direction of his activity and the order of research with attention to the essence. Sometimes it can acquire a negative character. In this case, heuristic ideas represent its constructive side, while its negative side is manifested in the destructive nature of creativity. Therefore, synergetic thinking is a way of thinking that helps to determine the direction of fluctuations in scientific creativity.

CONCLUSION. The synergistic picture of the development of scientific and creative activity in our country in a new direction, based on the correct understanding of the purpose of the creative activity of young people, educating them as self-developing creative people, creative cooperation, cooperation, co-authorship, regulating mutual creative organizational relations, providing young people with creative abilities, knowledge and skills, creating conditions for mutual exchange of experience, forming their attitude to the world of scientific innovations, was born it is necessary to pay attention to the acquisition of creative meaning of ideas, self-expression of creative activity on a regular basis, acquisition of social significance of scientific creativity.

Summary. Based on the above, we can say that the impact of the synergetic approach on the development of science, the analysis of the methodological problems of its possibilities show that scientific research cannot be carried out without this tool.

Using the achievements of synergetics in the process of finding new scientific research

methods will help clarify many issues in this field. It is also noteworthy that synergetics is manifested as an interdisciplinary research method in the convergence and convergence of various scientific fields. Because synergetics is a new way of looking at the world, it is an interdisciplinary scientific research method that analyzes the global evolutionary process on the basis of generalization of scientific innovations, self-organization, and non-linear thinking.

REFERENCES

1.O‘zbekiston Respublikasining “Ilm-fan va ilmiy faoliyat to‘g‘risida” 2019 yil 29 oktabrdagi O‘RQ-576-son Qonuni.https://lex.uz/docs/4571490
2.O‘zbekiston Respublikasining 2020 yil 24 iyulda «Innovatsion faoliyat to‘g‘risida» gi O‘RQ-630-sonli Qonuni.https://lex.uz/docs/4910391
3.O‘zbekiston Respublikasi Prezidentining 2019 yil 8 oktabr “O‘zbekiston Respublikasi oliy ta’lim tizimini 2030 yilgacha rivojlantirish konseptsiyasini tasdiqlash to‘g‘risida”gi PF-5847-son Farmoni.https://lex.uz/docs/4545884
4.O‘zbekiston Respublikasi Prezidentining 2020 yil 29 oktabr “Ilm-fanni 2030 yilgacha rivojlantirish konseptsiyasini tasdiqlash to‘g‘risida” gi PF-6097-sonli Farmoni.https://lex.uz/docs/5073447
5.Saifnazarov I, Nikitchenko G, Qosimov B. Ilmiy ijod metodologiyasi. Toshkent. “Yangi asr avlodi”, 2004. 6- bet
6.Karimov B.R. Sinergetika va evristikaning ilmiy bilish jarayonmdagi o‘rni // Sinergetik paradigma: muammo va imkoniyatlar (ilmiy-nazariy seminar materiallari). Toshkent, 2013. – B.62-63
7.Пригожин И., Стенгерс И. Порядок из хаоса. Новый диалог человека с природой. – М.: 2008. –296 с.
8.Хакен Г. Тайны природы. Синергетика наука о взаимодействии. Перевод с нем. Логунова. - М., Ижевск, 1997. – С.278; Лесков Л.В. Футуро синергетика. Универсальная теория систем. - М.: Экономика. 2005. -С.128.
9.Философия науки. Синергетика человекомерной реальности. - М., 2002. №9, - С.3.
10.Добронравова И.С.Синергетика: становление нелинейного мышления. – М.,1990. - С.43.
11.Bozorov D. Sinergetik paradigma. –T.: “Tafakkur”, 2010. – B.47.
12.Abdullayeva M.N. Mustaqillikning ijtimoiy-g‘oyaviy asoslari // G‘oyalar va innovatsion taraqqiyot. II ilmiy nazariy seminar materiallari. – Urgench, 2013, - B. 8.
13.Моисеев Н.Н. Судьба цивилизации. Путь Рзума. Серия: Язык, семиотика, культура. –М.: Языки русской культуры 2000. –224 с.
14.Е.В.Ли.Э.М.Иззетова. СИНЕРГЕТИЧЕСКИЙ ПОДХОД В СИСТЕМЕ ОБРАЗОВАНИЯ.юhttps://scholar.google.ru/citations?view_op=view_citation&hl=ru&user=1beOVx4AAAAJ&citation_for_view=1beOVx4AAAAJ:9ZlFYXVOiuMC