

## THE INFORMATION SYNERGETICS, IN THE CONTEXT OF HIGHER EDUCATION

Kudryashova E.E., Ph.D., Associate Professor, the RANH Professor

### The Abstract:

When considering the globalization, from the system perspective, it has been appeared, that the information is the primary one in this process. In such phenomena analysis, as the globalization and «the knowledge-based economy», the generalizing view has its great heuristic value, which is characteristic for the synergetics. «The knowledge-based economy» – this is the interaction economy between the science, the education, and the business. So, the integrated synergetic concept application is practically needed to be considered the particular challenges and the specific issues, in terms of the synergetics in the learning. The synergetic methods are practically allowed to be compressed the information, having overloaded by the particular parts and the specific details, to be turned it into the small number of the laws and the concepts, which are reflected the macroscopic systems' properties. It may be recommended the cognitive configurator use, to be increased the abstraction level in the discipline teaching. The aggregate model of the content presentation, in the form of the generalizing concepts, for the basic models of the information systems structural design, is summarized those models' properties, which are being developed for the design, in the first place.

**The Key words:** synergetics; knowledge-based economy; information; cognitive configurator; aggregate model; content; structural design.

At present, the globalization and the crisis situation processes studies are the relevant and the urgent ones in the world – wide scale. When considering the globalization, from the system perspective, it has been appeared, that not the goods, the finances, the people, but the information is the primary one in this process [4]. The generalizing view has its great heuristic value, which is characteristic for the synergetics in the phenomena analysis, such as the globalization, «the knowledge-based economy» [F. Machlup, 1962], the catastrophes and the disasters in the different nature systems, and a number of the others. «The knowledge-based economy» [1] is defined the economy type, in which the knowledge is played the crucial role, and the knowledge production has already been become the economic growth source, as this is the interaction economy between the science, the education, and the business, as well as the innovations formation promotion. The practical recognition of the high – value knowledge principle is the new model difference of the education, as the economic factor [3], and also the orientation on the system openness of the education, as well as on the holistic understanding formation of the surrounding world. So, G. Haken [6] has pointed out, that the synergetic methods are practically allowed to be compressed the information, having overloaded by the huge number of the particular parts and the specific details,

and then, to be turned it into the small number of the laws and the concepts, which are reflected the macroscopic systems' properties. So, the systematic inter-disciplinary approach to the higher education development is practically fit into the mainstream of the synergetic concept [5]. The methods analysis, having used currently in the European education, has been shown, that the content formation, with the system positions, on the basis of the generalized concepts is the most recommended methodological approach. The abstraction level raising has the great significance in the discipline teaching; it may be recommended for the application of the cognitive configurator concept. The configurator concept has been first proposed by V.A. Lefebvre, and the cognitive configurator [2] is understood the minimal complete set of the basic cognitive operations, that are sufficient to be presented the various cognition processes. So, the aggregate model of the content presentation, in the form of the generalizing concepts for the structural design of the information systems basic models has been suggested by the author. Thus, the aggregate model has been generalized those models' properties, which are being developed at the information systems' design, in the first place: the IDEF0 – is the function chart, the IDEF3 – is the activity diagram, the DFD – is the data flow diagram. The function (f), the work (r), the process (p) – are the internal terms of the corresponding diagrams; the aggregation has been carried out, on the basis of these given concepts. So, in the aggregate model, these indicated concepts have already been combined by the generalized notion of «action»  $D = (f, r, p)$ , and the identifier of the chart type is correlated to the internal term of the chart, having entered into the generalized concept.

### **The Conclusions:**

The aggregate model of the content formation, on the basis of the generalized concept, in terms of the synergetics, is practically allowed to be given for the considered models the general guidelines for the structural design models of the information systems. The abstraction level rising, at the content formation, is allowed us to be considered the design process non – fragmentarily, and with the system approach, the ability to be developed the analytical thinking at the students, which is the necessary condition for the further creative activity.

### **The References:**

1. Vikhoreva O.M., Karlovskaya S.B., "The Knowledge Economy: Global Trends in Russia", /The «Bulletin of the Moscow University» Journal. Ser. No.6. «The Economy». 2005. № 3;
2. Kolesnikov A.A., "The Synergetic Theory of Management". / Taganrog: TRTU, M.: «Energoatomizdat», 1994. – p. 344;
3. Kudryashova E.E., "The Methods and Models for Information Systems Designing". / The Monograph. – M.: «The Academy of Natural History», 2009. – p. 128;
4. Laslo E., "The Bases of Trans-Disciplinary Integrated Theory". // «The Challenges of

- Philosophy». – 1977. – № 3. – p.p. 80 – 84;
5. Malinetzky G.G., Kurdyumov S.P., “The New in Synergetics. Looking into the Third Millennium. Synergetics and Systemic Synthesis”. [«The Electronic Resource», 2005]. – <http://www.keldysh.ru/book/sinpr.html>;
  6. Haken G., «The Synergetics (Instabilities Hierarchy in Self – Organizing Systems and Devices)». / The translation from English. Edited by Klimantovich Yu.L. – M.: The Mir (The Academic Press), 1985. – p. 423.