Секция 4.
ПЕДАГОГИЧЕСКИЕ НАУКИ

Vasylyshyn Vitalii
Ph.D., Associate Professor of Engineering and Computer Graphics
Ivano-Frankivsk National Technical University oil and gas,
Ukraine, Ivano-Frankivsk

PRINCIPLES AND REQUIREMENTS QUALIMETRIK PEDAGOGICS

We live in a time when education is no longer a purely descriptive science, the recommendations of which were based mainly on the principles of common sense. Pedagogy is gradually becoming a science that produces its own technology research, improvement of which is a major factor and a prerequisite for further development of pedagogy. Currently actively developing qualimetry — branch of scientific knowledge, which studies issues of methodology and the development of complex, and in some cases systematic quantitative estimates as of any objects (objects, phenomena, processes). In other words, developing scientific field that focuses on the quantitative description of quality items.

As a separate specific direction, pedagogical Qualimetry evaluates psychological, pedagogical and didactic objects. First there was doubt about the correctness of the concept of "dimension" to the concept of "quality" and denied the idea of the possibility of complex quantitative quality indicators. But later, these doubts have been removed.

The basis of educational quality control — such sciences as pedagogy, psychology, sociology, mathematics, cybernetics. Pedagogy itself uses the method of mathematics as multidimensional statistical, factor and correlation analysis, the use of which requires the need to develop additional sections of applied mathematics, such as systems theory and others.

Associated with the formalization of pedagogical knowledge Qualimetry has significant opportunities in terms of efficiency and quality of educational research. However, despite numerous attempts, named above problems currently developed fairly accurately.

Attempts quantitative analysis teacher phenomena were made in the early XX century. In applied research test didactic and mathematical-statistical methods. But this experience was not fixed, and this problem only came back in the early 60-ies. At this time, the situation has changed, new branches of

mathematics (statistical multivariate analysis, nonparametric statistics, information theory, cyber branches of mathematics, etc.), Which allowed to use them in teaching science.

The next step to problem assessment qualimetric pedagogical phenomena arose in the late 80's — early 90-ies of XX century. Basically, the work of scientists at that time were prysv'yacheni describe the methods and procedures qualimetric study, but hardly touched the theoretical foundations of quality control.

But you can highlight a reasonable number of attempts to promote a system of principles and requirements that constitute the conceptual basis qualimetric approach.

At this time, distinguish the following principles that underlie qualimetric approach:

1) review the study as a hierarchical set of properties on tiered basis;

2) the selection of simple properties and their correlation with specific measurement scales;

3) assigning each property two parameters (characteristics) — weight and significance;

4) the weight of all the properties of one level is considered constant;

5) weight properties determined as the average weight estimates obtained by separate experiments;

6) eventually determined by a comprehensive assessment of the quality in general.

But these principles can not be considered as such in the strict sense of the word. This sequence of actions that reflect the measurement procedure. In addition, they cover only the theory of measurement.

A logical system principles underlying qualimetric approach, it is advisable to build, firstly, based on the analysis of research methods Humanities, secondly, with heuristic capabilities mathematics, logic, cybernetics, and third, with theoretical and methodological provisions teaching quality control, fourthly, given the idea of information technology. As a result, the system stands principles, including:

1) information content — versatility representations (qualitative and quantitative determination) of the object (phenomenon, process);

2) integrative, requiring: a) scientific relations between pedagogy with other sciences; b) the basics of pedagogy with didactics, methodology, management, etc.; c) connections within subjects; d) interconnection and interaction research methods that combine quantitative and qualitative methods;

3) optimal, resulting in minimizing the time, effort and resources in planning, organizing and conducting educational research, the optimal selection of research methodologies that combine quantitative and qualitative methods;

4) accuracy — the degree of compliance obtained actual knowledge test object (phenomenon, process). Precision scientific knowledge consists of

some components: metric accuracy, logical-mathematical and semantic. Live metric, logical-mathematical and semantic accuracy recorded in the integral result — scientific truth;

5) evidence that shows: a grounded not only educational, but also from a mathematical point of view of logic evaluation of pedagogical research; a comprehensive research methodology, based on the harmonization of qualitative and quantitative research methods; the reliability and validity of used meters;

6) adaptability — means the separation process under study for a number of consecutive related procedures and operations that run more or less clearly and are aimed at achieving high efficiency;

7) Distribution — involves extensive use of computer technology and methods of providing processing and storage research services;

8) uniformity — provides efficient reduction of assets and bring them to a common structure;

9) Availability — means the use of methodologies teacher-experimenter who has no special mathematical training. However, the greatest effect is achieved when the creative community of teacher-researcher and mathematics consultant.

You should also formulate a number of requirements to be met qualimetric approach in the study of educational processes:

Establishing criteria for assessing the possible methods of measurement, based on the goal of pedagogical experiment;

— The choice of research methods and transforming them into concrete research methods that adequate research objectives;

— A preliminary assessment of the accuracy, probability and reliability of measurement based on the goals, objectives and forms of pedagogical experiment;

— A combination of research methods, which is aimed at getting diverse data object and study the dynamics of changes in the facility;

— Selection of research methods that allow to analyze the logic of the research process and its results, as well as to forecast;

— The need to measure in numerical form or in conventional terms.

Qualimetric vision described above will approach on a new approach to understanding the methodological problems of pedagogy, to solve a number of pressing problems related to rational and correct use of this approach in educational research.