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**THE CRITERIA OF DEVELOPMENT OF RESEARCH  
METHODOLOGY OF PROBLEMS IN MANAGEMENT OF EDUCATION  
IN THE HISTORY OF PEDAGOGY**

The meanings of the notions „development”, „criteria” and „indexes” are defined in the article. The scientific works which deal with requirements for criteria of pedagogical research, define criteria for analysis and evaluation of educational advancement, pedagogical ideas and theories, quality of scientific activity have been analyzed. Based on this analysis, the criteria for analysis and evaluation of research methodology of problems in management of education in the history of pedagogy have been proposed: the directivity of research on topical issues from the perspective of modern science, the level of formation of methodological knowledge in the specifics of management science, availability of tools for proof of scientific knowledge, the level of disclosure of the concepts that characterize the methodological and theoretical bases of research, the conceptual system is developed in research.

**Key words:** methodology, criteria, indexes, management of education, development of methodology.

**Problem statement.** It is well known the fact of correlation between development of any branch of science and methodology of the science. Methodological principles are internal factors of science. The theory of educational management is a relatively young branch of science. Studies of educational management in Ukraine were mostly based on the methodology of scientific and pedagogical researches, not considering that the problems of these studies often go

beyond pedagogy and need new ways and methods of research problem solving. But despite of the fact, the scientists realize transformative role of methodology in modern educational space, its great theoretical and practical significance for the development of scientific theories, including the theory of educational management; the problem of research methodology development in management of education is not studied in domestic scientific literature, there are no criteria of its development.

However, the important condition of the efficiency of scientific research and receiving new knowledge is scientifically grounded criteria of methodology development. This is due to the fact that the criteria can not only assess the state of scientific methodology in a branch of science, identify the peculiarities of its development in different periods but they allow to define trends and ways of its further development.

**Analysis of research and publications.** Today there are lots of scientific papers on the methodology of research. Certain aspects of research methodology of management systems are examined in the works of Russian scientists (B. Lomonosov, Z. Makasheva, V. Mishin, V. Mukhin, V. Mylnyk, B. Titorenko and others). The works of Y. Babanskiy, S. Goncharenko, M. Danilov, V. Kraevskiy, V. Polonskiy, M. Skatkyn, Y. Surmin, T. Shamov, G. Shchukin and others are devoted to the criteria of evaluating the process and results of research. Among the publications of the recent years should be noted the works of V. Horovyi, M. Gubko, L. Dubrovina, D. Novikov, O. Orlov, in which international experience of research evaluation is analyzed. Requirements to the development of a criteria complex for evaluation of the development of education, educational ideas and theory are described in the works of O. Adamenko, A. Dymytriyev, V. Kurylo, Y. Hrykov and O. Shevchenko. Abroad, issues related to the assessment of the quality of educational research and methodology of scientific works, are considered by G. Byzhkov, Z. Zabrovski, D. Bershteher, V. Viyersma, G. Mialare and others. But the problem of grounding the criteria of

the assessment in development of methodology is not revealed completely in such works.

**The aim of the article:** to justify research methodology criteria of education management problems in the national history of pedagogy.

**Statement of the main material.** As a methodological approach to the analysis and evaluation of development of research methodology in management of education in national history of pedagogy we use criterion-complex approach, which include working out, justifying, and using the system of evaluation criteria for research process, provides detailed, quality and objective analysis.

In the scientific literature „criterion” (from Greek *criterion* – a test, a means of judging) is defined as the main component, feature, on which the assessment, determination or classification issues; measurement of opinions, evaluations [4, p. 654]. Criteria is a complex notion, because, firstly, they can be expressed in both quantitative and qualitative indicators, secondly, criteria can be objective and subjective. Objective criteria are expressed by specific index (quantitative or qualitative). The qualitative criteria are much less defined. These include, for example, a positive or negative experts’ assessment of scientific activities, level of methodology. Examples of quantitative indicators of the quality of scientific work may be a number of publications, citations and others. Subjective criteria, in practice, have a major impact on the degree of objective factors. Scientist’s personality, his outlook, the level of scientific culture and others are subjective criteria. The criteria used in educational research should correspond to several requirements: target predetermination; objectivity; materiality; relevance; the right balance between quantitative and qualitative aspects; rationality (accessibility) is the possibility of using by different actors. The link between all components of the system must be set with the help of criteria.

In turn, „an index” is a visual data on the results of any work or a process; a phenomenon or an event on which we can make conclusions about the progress of a process; ie data that show development and progress of something. In pedagogy it seems likely that the criterion is the most common indication for comparison,

assessment and measurement of the properties and qualities of the object. An index describes the individual properties and qualities; accumulation of indicators provides the basis for the evaluation of the object. Usually a criterion acts toward an index as general to a portion, and includes a group of indices (quantitative and qualitative) of the object.

The requirements for working out of a complex of criteria of the development of education and pedagogical ideas are substantiated in the work of V. Kurylo. So, the criteria should: reflect the essential characteristics of education and educational ideas; reflect the totality of the essential characteristics of the educational system, provide their multidimensional analysis and evaluation; be a theoretically logical and reasonable system of interconnected characteristics of the educational system; make it possible to assess the development of the education system, and its current and final results; consider the possibility of obtaining necessary information for the evaluation of a phenomenon; take into account the main existing approaches to the analysis of historical and educational events; the system of criteria must be examined in practice and suitable for use for the evaluation of such historical and educational events [3, p. 209.].

E. Hrykov imposes such requirements to determine the criteria in research problems of management in education: the foundation of criteria justification should be based on clear methodological basis; the formulation of criteria should reflect the characteristics of the assessed phenomena, and not the general structural components; criteria must be single-level, no criterion can be the part of the other; criteria cannot be distinguished without qualitative conceptual and terminological analysis and defining the essence of a concept that describes the phenomenon as well as concepts that describe specific criteria and even their indices; each criterion should be clearly differentiate from other criteria and indices of criterion - of its other indices; to assess the effects of management need criteria related to the management (this approach is the basis of international standards of quality management ISO, which focused on the assessment of the effectiveness of management in terms of development and implementation of three groups of

processes, not production quality. For example, indices of students' progress can be considered only as additional criteria in assessing of management effectiveness) [3]. The above logic of the criteria determining agrees with the structure of methodology of systematic approach and was used for determination of the criteria of development in methodology of educational management research.

The scientist also marks out such features of criteria: measuring the characteristics of the evaluated phenomenon, modeling (because they characterize the most important features of the phenomenon), methodological reference point in the analysis of the scientific literature on the research problem, conceptual definition of the problem (formulation of criteria which describe the phenomenon using scientifically grounded concepts). So, summarizing the above criteria features in the pedagogical study shows that the criteria for the study are major methodological reference point of the study because they let realize the function of analysis, measurement, conceptual description, modeling [3]. Developing the criteria, we based on the main stages of justification the criteria proposed by Y. Hrykov: theoretical interpretation, empirical stage of the criteria justification, optimization of criteria.

The first stage is theoretical interpretation, logical analysis of the theme (subject) of research. Theoretical interpretation begins with a structural interpretation, which allows to distinguish concepts that characterize the object of study, and define their connections. In fact, structural interpretation let determine the structure of criteria and correlation general and special in criteria. The next task of theoretical interpretation is conceptual interpretation, which provides determining the nature of the basic concepts that characterize the structure of the phenomenon. The tasks of conceptual interpretation can be considered as implemented ones if all the main concepts are clearly identified in the dissertation. The next step is the operationalization of key concepts. This procedure involves the apportionment of such descriptions which must be observed, registered, measured and analyzed.

According to this stage we made theoretical interpretation of the research topic and made operationalization of key concepts: „methodology”, „development”, „problems of management in education”. It was found out that the methodological basis of research often reveals through the following concepts: approaches, theories, principles, regulations, ideas, laws.

S. Goncharenko notes that "methodological level of scientific papers on pedagogy is determined by the degree of conformity of the works to a number of requirements that concern them and which provide the search of research strategy, organization of the search, the choice of tactical means and methods of methodological analysis, the presence of conceptual basis, the results of the research [1, p. 89 – 90].

Research methodology has certain characteristics depending on the level of research (dissertation for the degree of Doctor of Pedagogy, thesis for the degree of Candidate of Pedagogical Sciences, complex, collective research, individual, local research), the type of research (theoretical, practical or applied). We found out that the level of development of the methodology can be understood by analyzing the conceptual apparatus of scientific research. Methodological categories as main components of pedagogical research include a scientific problem, a topic, relevance, an object and a subject of study, purpose, objectives, hypothesis, research methods, scientific novelty, theoretical and practical significance, theses for defence. According to the structure of methodological knowledge by Y. Yudin, we consider research methodology as a complex of four-level system. The level of methodology in specific research problems of management of education depends on the general methodology of scientific research, the development of methodological principles related sciences, methodology of teaching science and features of the theory and practice of management of education during the research. As noted by Y. Hrykov, the first three levels of methodology provide compliance of pedagogical research and value system of modern society (first level); the most effective way of solving social problems (second level); trends in development of pedagogy (third level). The fourth level of methodology provides technological

implementation of the conceptual principles of the research, formed by using the first three levels of methodology [3, p. 112].

Y. Yudin, describing methodological research in general, said that regulatory element dominates in it. Normative methodological knowledge takes the form of regulations and standards, which fix content and sequence of certain activities. It is, in his opinion, has three main functions: providing the correct formulation of the problem as from a content and from a formal point of view; gives some basis for solving the tasks are and the problems – that could be called intellectual technology of scientific research; improves the organization of studies [2, p. 264]. To our mind, methodology can carry out the above functions, the level of implementation of these functions indicates a certain level of research methodology in the field of science. In our opinion, these theses should be considered when determining the criteria for evaluating its development.

The analysis of the essence of the concept of „education management problem” allowed us to outline the research that need consideration to implement the conclusions of the level of development of methodology according to the research problem.

Also, the logic of our research involves the disclosure of the concept of „development”, understood in this study as irreversible, directed, regular change of material and ideal objects. Only the simultaneous presence of all three of these properties provides the development among other changes: changes reversibility characterize the process of functioning (cyclicity, reproduction of a permanent system of functions); absence of regularity is typical for random processes of catastrophical type; in the absence of direction changes cannot accumulate, so the process loses a single, internally coherent line. As a result, a new quality state of an object appears, that acts as a change in its composition or structure (ie, the emergence, transformation or disappearance of its elements and links). The capacity for development is one of the general properties of matter and consciousness. Essential characteristic of the process of development is time:

firstly, any development is carried out in real time and, secondly, only time reveals the direction of development [6].

Most scholars consider „development” as a process and result of changes. Such scholars as A. Averyanov, B. Grushin, B. Kedrov, V. Stolyarov, F. Schmidt noted that the study of change processes is one of the most important components of modern scientific knowledge. At the same time, in the work of V. Stolyarov it was proved that the research of the change process necessarily involves the analysis of objects which the change. The nature of the change process sets the object, which changes, and what happens to it in the change process. It is necessary to distinguish the nature of changes, their reasons and mechanism of changes [5, p. 132].

According to these statements, the development of the methodology should be viewed as a process that takes place in a period of time and determines the phasing of development; research methodology components that reflect the essence of the phenomenon and is a subject to change should be identified. Reasons of changes, in our point of view, are important to take into account in determining the periods, so according to our research problem such reasons may be: scientific revolutions and changes in scientific, educational and management paradigms; economic, political, philosophical and ideological changes in society and others. Scientists include such components of the methodology as a special system of elements which should be changed and compose the scientific knowledge: a scientific problem, a hypothesis, the choice of a research subject, educational objectives, methods of study and requirements to them [2, p. 263 ]. In our view, this list should be added with the scientific approaches used as methodological principles of scientific research.

As noted, development of methodology and development of science are mutually determined. So, in determining the evaluation criteria of research methodology in management of education in the national history of pedagogy it would be useful to consider different views on criteria and indices of science. Y. Hrykov determines that the level of science is defined by: the level of

conceptually elaborated term apparatus; the presence of laws, rules, principles and conditions; elaborated scientific concepts; accumulation of empirical facts; availability of scientific theories, which include all previous components of scientific knowledge [3, p. 99 – 100].

We analyzed the evaluation criteria of educational ideas in the region, offered by V. Kurylo, which consist of 12 criteria and appropriate indices [3, p. 219 – 224]. This evaluation system is enough extentional, reflects the phenomenon entirely. It should be noted that most of the criteria reflect research methodology, such as methodological principles of pedagogical search, formation of research problems, characteristic of procedures in pedagogical research, compliance of educational thought to the internal logic of the development, nature and effectiveness of the link between educational thought and practice, and others.

On the second, empirical stage of criteria justification specification, refinement, expansion of the list of criteria, providing their completeness using empirical methods were carried out. Based on the information received from theoretical and empirical criteria justification the list of criteria was formed. The third stage is optimization of the criteria. At this stage the most important characteristics of the phenomenon, correlations, integrity of criteria, their optimal amount were systematic covered. It is important that the criteria were the same level, and none of them was a part of the other. The objectives of this stage were realized via expert survey. To find the amount of criteria we based on  $7 \pm 2$  rule for the number of indicators –  $5 \pm 2$ . Such number of criteria and indices complies with international standards ISO 9000 in determination of the number of processes which are developed and their effectiveness is evaluated. Consequently, the evaluation system can be cumbersome, it should consider the potential opportunity to gain necessary information for a comprehensive analysis.

Thus, to justify the criteria for assessment of the phenomenon we observe the following requirements for defining of criteria: compliance the criteria structure and structure (model) and essential features of the phenomenon; clear differentiation of the criteria and indices; the effectiveness of a theoretical

interpretation, logical analysis of the research theme (subject); the effectiveness of the implementation phase of the empirical substantiation of the criteria; integrity and optimality of the criteria system; providing the criteria with methods of their indices measuring. On the basis of the analysis we have proposed the following criteria for assessing the level of research methodology in management of education in the national history of pedagogy:

1. The directivity of research on topical issues from the perspective of modern science (research reliance on previously accumulated knowledge, setting scientific problems that are caused by previous development of science, certain preliminary development of scientific ideas, matching the objective of pedagogy to social needs, education development strategy).

2. The level of formation of methodological knowledge in the specifics of management science (intuitive and non-formalized, borrowed, conscious).

3. The availability of tools for proving the scientific knowledge (description of the experience, experimental evidence, theoretical foundation, claimed and actually used range of methods of obtaining, processing and presentation of results).

4. The level of disclosure of the concepts that characterize the methodological and theoretical bases of research (the validity of the application of general scientific, psychological, pedagogical, educational, managerial approaches to scientific research, the presence of certain interpretations of these concepts that characterize declared scientific research approaches; adequacy logic research and these approaches).

5. The conceptual system developed in research (expediency of the study proved through scientific relevance and formulating of contradictions, the purpose is formulated according to the problem, particularly as the end result of the study, clear correlation between the aim, object and subject of the study; the presence of correlation between the aim, objectives and scientific novelty; clear separation methodological and theoretical principles of research).

**Conclusions and recommendations for further research.** In developing the criteria we should take into account the main requirements for their development and formulation; strive for limiting of their number and development of criteria system, which combines using of quantitative and qualitative indicators. Therefore, on the basis of the analysis we have grounded the criteria for assessing the level of research methodology in management of education in the national history of pedagogy.

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### **Критерії розвитку методології дослідження проблем управління освітою в історії педагогічної науки**

У статті розкрито зміст понять „розвиток”, „критерії” й „показники”. Проаналізовано праці науковців, в яких розглядаються вимоги до критеріїв у педагогічних дослідженнях, виокремлено критерії з аналізу та оцінки розвитку освіти, педагогічної думки та теорії, якості наукової діяльності. На основі цього аналізу запропоновано критерії для аналізу та оцінки розвитку методології дослідження проблем управління освітою в історії педагогічної науки.

**Ключові слова:** методологія, критерії, показники, управління освітою, розвиток методології.

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**Критерии развития методологии исследования проблем управления образованием в истории педагогической науки**

В статье раскрыто содержание понятий „развитие”, „критерии” и „показатели”. Проанализированы труды ученых, в которых рассматриваются требования к критериям в педагогических исследованиях, выделены критерии анализа и оценки развития образования, педагогической мысли и теории, качества научной деятельности. На основе этого анализа предложены критерии для анализа и оценки развития методологии исследования проблем управления образованием в истории педагогической науки.

**Ключевые слова:** методология, критерии, показатели, управление образованием, развитие методологии.