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# Content and Structure of Methodological Culture of Master's Degree Candidates

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**KEYWORDS** Master's Degree Candidates. Methodological Culture. Methodological Culture Characteristics. Methodological Culture Development Levels

**ABSTRACT** This paper is devoted to the disclosure of the issue on the methodological culture of master's degree candidates as a pedagogical concept. To this end, the authors analyzed various points of view to the concept of a "methodological culture," taking place in pedagogy from the middle of the last century to the present time. Concerning the activities of teachers, primarily, there can be talks about practical pedagogical activity and scientific and pedagogical activity. Three levels of formation of the methodological culture of candidates for a master's degree are thus identified and briefly characterized: primary, mid-level, and high. Particular attention is also paid to the formation of the methodological culture of candidates for a master's degree in educational and practical activities. It is proved that one of the most important means of improving the quality of professional training of master's degree candidates at university is research work.

## INTRODUCTION

The state educational policy in Russia is aimed at solving the main task of creating necessary conditions to achieve a new quality of education. Modern education should also correspond not only to the urgent and perspective needs of a person, society, and the state; but also, be focused on entering worldwide educational space (Lukashov 1999; Akimîvà et al. 2014; Levina et al. 2015; Shirin 2015; Noskova et al. 2016; Valeeva and Gafurov 2017; Tarman and Chigisheva 2017).

In conditions of modernization of education and multifunctional professional activity, methodological culture is becoming a universal quality being in demand. The formation of a high level of students' methodological culture, ensuring their professional growth and self-development also become important tasks of higher education institutions. In this regard, the question of what constitutes the methodological culture of master's degree candidates is becoming relevant (Warford 2011; Aikashev et al. 2014; Mironenko and Sorokin 2015; Dyganova and Yavgildina 2015; Zhelnina 2016).

The imperative in contemporary ages regarding developing student issues is also concerning increasing the variety of instruction workforce. In earlier ages, yet, selecting and retaining property coaches has shifted a provocation between some OECD people. In addition to the aging of the teaching workforce, some countries endure great movements of decline between new scholars and a deficiency of state educators in high-demand problem sections and disadvantaged schools. There is also much interest in drawing high-achieving and motivated competitors into master's programs and lowering skill requirements in certification and licensing of new teachers (Holmes et al. 1995; Boyd et al. 2006; Erzikova and Berger 2011; Barnes 2016).

### Objective

The present study aims to identify the main characteristics of the concept of the "methodological culture of a master's degree candidate" based on an analysis of scientific and pedagogical literature.

## METHODOLOGY

Research methods used in this study are theoretical (that is, analysis of scientific and pedagogical literature on the problem, comparison, and generalization) and empirical (that is, questioning and observation). Research also

highlights many features that characterize expert teachers, which include extensive pedagogical content knowledge, better problem-solving strategies, better adaptation for diverse learners, better decision-making, better perception of classroom events, higher sensitivity to context, and greater respect for students.

Which of the following is the current concern that must be resolved to meet the needs of today's humanity? One of the multidimensional aspects that are intertwined with present life is information technology (IT). There are some issues in this area, so multidimensional and interdisciplinary knowledge is needed to solve them. Ethical and cultural issues in IT are among the most challenging issues in various countries.

So, in this research, there were attempts to apply an analytical paradigm and technological solutions to evaluate information in terms of ethics and culture. There is also a moral and cultural breakdown in this norm. The area of prevention can be further managed to some extent. While addressing critical issues and concerns in the field of ethics, IT, and cultural acceptance in IT are seeking an analytical framework for evaluating projects. In general, programs and solutions in this area are presented in this study. This evaluation is also an ethically, feasible solution. It is a culture by which a humane solution can be provided and employed for IT implementation

## RESULTS AND DISCUSSION

In the present study, the authors adhered to the position of Novikov (2002), who showed that methodology was the doctrine of the organization of activities. The methodological culture in this context was a system of knowledge, abilities, and skills on the organization of activities (that is, research, pedagogical, educational, gaming, etc.). Concerning the activities of teachers, first of all, practical-pedagogical activity and scientific-pedagogical activity can be delineated.

The methodological culture can also be considered as a scientific field (methodology of pedagogy) and as the property of each researcher, or teacher. The methodological culture of a future teacher depends on what baggage of methodological knowledge has been accumulated in the methodology of pedagogy, as well as on pedagogical means and the conditions for its formation in the process of training the future teacher (Barnes 2016; Valeeva and Gafurov 2017).

For a teacher, to have a methodological culture means knowing the methodology of pedagogy and being able to apply this knowledge in the process of solving emerging pedagogical situations. Possession of the constituent parts of a methodological culture (that is, design and construction of the educational process; awareness, formulation and creative solution of pedagogical problems; and methodical reflection) characterize teachers as a creative person and ensure a high level of their professional activity.

As a pedagogical phenomenon, the methodological culture of a teacher-researcher is characterized by the level of development of research competence as a person's readiness and ability to carry out design and research activities based on the integrative use of value orientations, personally-meaningful knowledge in a certain field, and research skills to solve theoretical and practical problems. For candidates of a master's degree to be ready to design pedagogical activities based on research results, they must be able to conduct research and obtain objective results (Noskova et al. 2016).

Mastering the methodology of scientific knowledge at the level of possession of relevant knowledge and skills is today an objectively necessary condition for master's degree candidates to get ready to solve problems and non-standard situations that permanently arise in the course of professional activity. This conclusion is because knowledge of the scientific cognition methods is expressed in the orderliness of scientific inquiry, which ensures conscious assimilation and systematization of knowledge; and develops students' productive thinking and their stable willingness to act in conditions of uncertainty.

There are different levels of development of the methodological culture of students. From the convenient practice using knowledge about levels of development of a methodological culture, it is advisable to talk about three levels: primary, mid-level, and high. What are the characteristics of these levels?

The primary level of development of the methodological culture is characterized by the fact that a master's degree candidate possesses skills to apply separate research methods (as a rule,

empirical methods - observation, conversation, questioning, etc.), and also has skills of practical application of these methods for solving particular research problems; in addition, at this level, students (with the help of their teacher) can see contradictions in the educational process and formulate a research problem. Still, they have difficulties in substantiating relevance, harmonizing elements of the methodological research apparatus among themselves, as well as putting forward and substantiating a hypothesis and research objectives, etc. (Valeeva and Gafurov 2017).

The mid-level of development of a methodological culture is different in that students can apply various theoretical and empirical research methods. They can reasonably put forward a hypothesis and develop experimental methods for its proof. However, their activities cannot holistically look at the design of the entire study in the unity of the phases of design, implementation, and reflection.

The high level of methodological culture development by master's degree candidates also speaks about the quality of the formation of methodological knowledge and skills that allow them to design, implement, and evaluate the effectiveness of the scientific and pedagogical research. At this level, students are fluent in the skills of logical and heuristic thinking as well as ways to systematically study pedagogical phenomena and processes. At this level, candidates of a master's degree from a stable orientation (that is, a set of sustainability goals, motives, and needs) to search for research, some experience in design, and implementation and reflection of the results of their own educational research as well as participation in research projects (that is, competitions, scientific and practical conferences, seminars, symposia, etc.) (Dyganova and Yavgildina 2015).

In the formation of the methodological culture of master's degree candidates, an important role is played by both theoretical and practical classes in the relevant disciplines (methodology and methods of pedagogical research, etc.), and research practice. It is also important that these forms of development of methodological culture are interconnected by candidates of a master's degree. This applies not only to the content side but also to the organizational and procedural ones. For this, it is necessary to include research activity or its elements in the work of master's degree candidates in classroom studies within classrooms and extracurricular forms of independent work.

The research work of students as part of the educational process includes:

- Study of theoretical foundations of methodology for organizing and carrying out scientific research, planning and organizing a scientific experiment, scientific processing data, etc.
- Fulfillment of tasks with elements of scientific research, laboratory work, abstracts, course and diploma projects, organization of research laboratory workshops, and control tests in disciplines;
- Presentations on results of their research (that is, micro-research) at seminars and scientific and practical conferences.

Analysis of the state of theory and practice concerning the modern higher pedagogical education system shows that high quality of preparation for a future teacher, especially at the level of a master's education program, cannot be achieved without deeply solving the problem of integrating educational and research activities of students. The educational activity of a master's degree candidate as a future teacher should be not only professionally-oriented (which is reasonable), but also research-oriented. The objective relevance of research-oriented pedagogical education correspondingly highlights the task of forming a methodological culture of master's degree candidates (Kraevsky 2001; Fatkullina et al. 2015).

The disclosure of the essence and the content of the concept of "methodological culture" also requires an appeal to another basic concept; the methodology of pedagogy. Questions of its formation and development in domestic pedagogy were also considered in the study by Ibragimov (2019). He showed that, up to the mid-60s of the last century, the concept of "methodology of pedagogy" had not been mentioned in textbooks on pedagogy, but only one part had been dedicated to the disclosure of research methods used in pedagogy. It should be noted that the composition of the research methods used was quite extensive and included oral and written surveys, the study of school documen-

tation, including results of creative activities of students, observations, essays, pedagogical experiments, mathematical and statistical methods for processing research results, and some others. It is also important to pay attention to the requirements of an integrated approach to the study of pedagogical phenomena and processes. This approach means the use of other sciences in conjunction with the pedagogical methods, i.e., psychological, sociological, etc.

As for the methodological foundations of pedagogy, they boiled down to the basic principles of Marxist-Leninist philosophy as a science of the universal laws of nature, society, and thinking development. The general scientific method, whose requirements were orientations for researchers of any branch of science, was dialectical-materialistic. The main requirements of this method were to investigate any phenomenon in its interconnections and interactions with other phenomena; to consider phenomena in their dialectical development as a process characterized by unity and struggle of opposites, transition of quantitative changes to qualitative ones, and transition of development into self-development, occurring due to its inherent internal contradictions (Ibragimov 2019).

In the 1990s, Likhachev published his educational book, in which a separate paragraph was devoted to the question of the principles and methods of organizing scientific and pedagogical research. Likhachev (1990), also proposed and justified the following methodological principles for the organization of pedagogical research; a concrete historical approach to the study of pedagogical phenomena, a dialectical unity of the general and the special in pedagogical phenomena and processes, a relationship between pedagogical theory and practice, a unity of education and life, as well as irreducibility of laws of one science to those of another. These principles could play a role in the development of the methodological culture of future teachers.

Considering the methods of pedagogical research, a step was also taken towards their expansion and degree of validity. In particular, it was already a question of pedagogical research method system which consisted of actual pedagogical methods and those from other sciences (Ibragimov 2019). It is similarly important to note that Likhachev (1990), gave definitions to a number of methodological characteristics of pedagogical research (that is, scientific knowledge method, research technique, scientific problem, and scientific hypothesis), identified its types (that is, empirical and theoretical), and revealed methods of pedagogical research that corresponded to each type. So, within the framework of an empirical study, the main (that is, observation and follow-up of documentation on life and activities of children, analysis of independent characteristics, development work, experimental work, questionnaires, interviews, expert assessments, and statistical processing of obtained data) and auxiliary methods (that is, psychophysiological methods) and techniques were identified. Also, it was focused on self-observation and self-analysis as a method of pedagogical research. Among the methods of theoretical research, he highlighted generalization of the best practice experience, abstracting, system-structural analysis, and modeling.

The textbook on pedagogy edited by Pidkasisty- (1999) has already introduced several definitions of the concept “methodology”; moreover, its justification was given. Note that a separate chapter was devoted to this issue, whose authors were Kraevsky (2001). In particular, they offered the following definitions of the term “methodology”:

1) A methodology is a system of principles and methods for constructing theoretical and practical activities, as well as a doctrine of this system;
2) A methodology refers to the doctrine of the method of scientific knowledge and the transformation of the world. Here, a narrower interpretation of the methodology can be seen (since the focus is only on the method (and not on the system of principles and methods) of scientific knowledge (theoretical activity) and transformation (practical activity) of the world);
3) A methodology is the doctrine of the principles of construction, forms, and methods of scientific research. This definition refers to a broader understanding of the method (that is, principles, types, and methods of construction). But, on the other hand, this definition refers only to research activity.

In addition to methodology as a concept, Kraevsky also formulated the definition of "methodology of pedagogy" as "a system of knowledge" about foundations and structures of pedagogical theory, about principles of the approach and methods of acquiring knowledge that reflect pedagogical reality, as well as a system of activities for obtaining such knowledge and substantiating programs, logic, and methods for assessing the quality of research work (Ibragimov 2019). From this definition, it is clear that its essence is reduced, firstly, to the answer to the question about the foundations of a pedagogical theory building and its structure and about the principles and methods of studying pedagogical reality. Secondly, an interpretation of the methodology of pedagogy is given as a system of activities, with two types of activity in mind.

The first activity is its methodological study as an activity to obtain knowledge about foundations and structure of pedagogical theory and principles and methods of obtaining this knowledge. The task of methodological research is to identify patterns and trends in the development of pedagogical science and practice and disclosure of principles and methods to improve quality and effectiveness of pedagogical research; the second activity refers to a methodological justification - the activity of substantiating programs, logic, and methods for assessing the quality of research work. The methodological support of the work means that a researcher competently substantiates and evaluates the quality of the research program relying on methodological knowledge.

The merit of Kraevsky is that he first introduced the concept of "methodological culture" into scientific circulation. He noted that the methodological culture assumes that a researcher or a teacher has developed skills to analyze their scientific activity (methodological reflection) and the ability to critically understand and to creatively and reasonably apply certain concepts, forms, and methods of cognition, management, and design (Kraevsky 2001; Fedorov and Tretyakova 2016). He emphasized that a methodological culture was necessary not only for a scientist, as it was traditionally believed, but also for a teacher since the pedagogical process could be performed without reflection, that is, without thinking about one's activities.

This is because during the real pedagogical process in a lesson, seminar, and extracurricular activities, etc., situations always arise that require resolution, that is, analysis, identification of the problem, as well as finding means to solve it. In modern conditions of development of education, there is also a tendency for the penetration of methodological knowledge in pedagogy from the field of scientific research into the field of practice, that is, the methodology of pedagogical science is oriented towards practice.

According to Valeev, the methodological culture of a researcher is a manifestation of the ability to think and independently to compare different points of view, to identify one's position, and to scientifically substantiate and professionally uphold it (Valeev 2001; Mac an Ghaill 2002; Orekhova et al. 2019). Others have also highlighted such signs of this concept as skills to design the educational process and the ability to realize, formulate, and creatively solve problems, etc.

## CONCLUSION

In this way, methodological culture as a concept is characterized by a combination of features that reflect the main stages of design, implementation, and impact of research. Methodological culture can be thus formed at different levels, among which three levels (primary, mid-level, and high) can be distinguished, which differ in terms of completeness and awareness of master's knowledge in key features of this concept.

## RECOMMENDATIONS

It is suggested that the content of this research paper be studied in the light of other aspects of this subject and for other academic studies such as doctoral candidates to provide a general overview.

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