

MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN  
FEDERATION

FSBEI of Higher Education “M. Akmullah Bashkir State Pedagogical University”

Institute of Vocational Education and Information Technologies

**PROGRAM**

**M2.N.1. OF RESEARCH AND SCIENTIFIC WORK**

**is recommended for**

training program: 44.04.01 – Teacher education  
major Education science and psychology of tertiary education

graduate degree: master

## **1. Aims and tasks of the discipline:**

The discipline “Research and scientific work” is aimed at development of methodological culture in the field of scientific and research activities.

The educational process is based on the competence, activity and personality-oriented approaches, the dialectical method in order to form professional and scientific competencies and develop creative thinking.

While studying the discipline, modern educational technologies of active learning, contributing to the formation of an active life position of future researchers and practitioners are developed. The process of studying the discipline is aimed at the formation of the following competencies:

### **a) general cultural (GC):**

the willingness to act in unusual situations, bear social and ethical responsibility for the decisions made (GC-2);

the ability to self-mastering and using new research methods, to master new areas of professional activity (GC-3);

the ability to form resource and information bases for the implementation of practical activities in various fields (GC-4);

the ability to acquire (with the help of information technologies and other sources) independently and use, new knowledge and skills, which are not directly related to the field of professional activity (GC-5).

### **b) general professional competencies (GPC):**

the willingness to interact with the participants of the educational process and social partners, to lead the team, tolerantly perceiving social, ethnic, confessional and cultural differences (GPC-3)

### **c) professional competencies (PC):**

the ability to apply modern teaching methods and technologies for organizing educational activities, diagnosing and evaluating the quality of the educational process according to various educational programs (PC-1);

the ability to create an educational environment and use professional knowledge and skills meeting the objectives of innovative educational policies (PC-2);

the ability to superintend the research work of students (PC-3);

the ability to analyze the results of scientific research, apply them in solving specific research problems in the field of science and education, carry out independent scientific research (PC-5);

the willingness to use personal creative skills to solve research tasks independently (PC-6);

the willingness to implement strategies of development of educational programs and personal educational routes (PC-8);

the willingness to develop and implement methodological models, methods, technologies and training techniques, to analyze the results of the process of their implementation in educational institutions (PC-11);

the willingness to organize, categorize, generalize and propagate domestic and foreign professional methodological experience (PC-12);

the willingness to study, organize and evaluate the management process using innovative management technologies that meet the general and specific patterns of development of the managed system (PC-14);

the ability to study and develop cultural needs and improve the cultural and educational level of various population groups (PC-17).

**2. The labour-intensiveness of the discipline** is 15 credit points (540 hours), which are 540 hours of independent work.

**3. The place of the discipline within the structure of the main educational program:** This discipline is aimed at performing of scientific and research work of a master student and further preparation of a master's thesis. It is performed during the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> terms.

**4. The requirements to the results of the discipline mastering:**

After completing the study of the discipline a master student should:

***Know:***

- principles of scientific methodology;
- the history of development and current state of scientific research;
- specific features of research activities;
- the significance of research in the professional activity of a community worker;
- the process of research, its objectives and tasks; main forms of scientific papers and works and the submission requirements;

***Be able to:***

- develop a program and scholarly apparatus of the research;
- perform and draw up educational research;

***Master:***

- methods of research;
- specific techniques of scientific research.

**5. The scope of the discipline and types of training activities**

Type of training activity	Labour-intensiveness in hours	Terms			
		1	2	3	4
<b><i>Classroom activities:</i></b>					
Lectures (L-s)					
Training sessions (TS)					
Lab sessions (LS)					
Control of student's independent		*	*	*	

work (CIW)					
<b><i>Independent work:</i></b>	540	*	*	*	
Development of a research program (considering the chosen topic of thesis).		60			
Development of the plan of research.		60			
Development of the contents of empirical research in the field of applied information science.		60	36		
Setting of objectives, tasks and a hypothesis of the research.			144		
Development of methodical recommendations for performing experiments.			9	54	
Drawing up of the list of references.					
Drawing up of the master's thesis.					
A research paper (article) as the form of presenting the results of research.				61	
Preparation of the documents for presentation.				18	
				10	
			27		
<b><i>Midterm attestation</i></b>	<i>credit</i>				
<b><i>TOTAL:</i></b>	540	180	216	144	

## 6. The contents of the discipline

### 6.1. The contents of the components of the discipline

Item №	The name of the component of the discipline	The contents of the component
1.	The planning of scientific and research work	Acquaintance with the subject of the research in this field. The essence of the research program. Methodological, methodical and organizational functions of the research program. The structure of the research program. The contents of the methodological and methodological parts of the program. The purpose of the research work plan. Problematic situation as a starting point of the research. The concept of contradiction. The concept

		<p>of "problem". Social problem from the point of view of the researcher. The specifics of solving problems at the research level. The contents of the theoretical work on the formulation of research problems. The problems of epistemological (cognitive) and substantive nature. Comprehensive research.</p> <p>The aim of the research as a model for solving problems. Tasks as a means of achieving the goal of the research.</p> <p>The object and subject of research.</p> <p>Conceptual research apparatus. Interpretation as a procedure for interpreting the meaning of the basic concepts of the research. Hypothesis and its role in the research.</p>
2.	<p>Analysis of information resources on the chosen topic and writing an essay</p> <p>Conducting a research</p>	<p><b>Experience</b> as an object of study. Plan for learning from experience. Plan description of the experience. Forms of experience description: analytical report, design development, methodical recommendations, etc.</p> <p><b>Experiment</b> as an object of study. Experimental projects and innovative experience. Description of the experiment and its results in an educational research.</p> <p><b>Tables and illustrations</b> as a means of presenting primary information obtained in the course of educational research. Analytical tables. Rules for the construction and design of statistical tables. Graphic representation of the data obtained during the study. Rules for the design of graphic material.</p>
3	Preparation of the contents and work schedule	<p><b>The scientific apparatus of educational research</b> as the design of its strategy and tactics. Development of the scientific apparatus of educational research. The composition of the scientific apparatus of an abstract work. The scientific apparatus of a course work. Scientific apparatus of a master's thesis. Guidelines for the planning of educational research. Self-examination of the study.</p>
4	Preparation of a research report	<p>Drawing up of the thesis. The main criteria of thesis quality.</p> <p>Obtaining of recalls and reviews of the thesis.</p> <p>The procedure of the thesis presentation.</p>
5	Public presentation of the research	Public presentation of the research according to the requirements and schedule.

## 6.2. Components of the discipline and types of lessons

№	The name of the component of the discipline	Lec.	TS	LS	CIW	Total
1.	Planning of research work				135	135
2.	Analysis of the information resources on the topic chosen and preparation of an abstract paper. Performance of research work				180	180
3.	Preparation of the contents and work schedule				105	105
4	Preparation of a report on research work.				105	105
5	Public presentation of the research				105	105
					540	540

## 6.3. Laboratory course

Not applicable

## 6.4. Interdisciplinary links of the discipline

Item №	The name of the next (further) disciplines	№ № of the discipline sections, which are necessary to study further disciplines				
		1	2	3	4	5
1.						

## 6.5. The requirements to independent work

The independent work is performed under the guidance of a research advisor within the limits of the field of research.

The structure is given below, personal tasks are in compliance with the logic of scientific research.

Personal tasks:

- The essence and significance of scientific research.
- Research as a tool for understanding problems and contradictions.
- The role of the practitioner in the development of theory and practice. Research activities in the work of a teacher.
- Problem research program (taking into account the chosen topic of a course paper or a thesis).
- Work plan of the research (taking into account the topic of the course paper / thesis).
- Research of the problems of vocational education in domestic practice (analysis of research papers on the problem).
- Contents of empirical research in the field of vocational education.

- Basic scientific approaches in educational science research.
- The main areas of research in professional educational science.
- The object and subject of study in vocational education.
- Objectives and tasks of research (for example, course studies).
- Hypothesis and its role in the research.
- Scientific apparatus of research work.
- Research studies on the use of foreign experience in domestic practice.
- Studies in educational science as a professional field.
- Features of research work.
- Experimental pilot projects as a type of research and transformational activity
- Innovative practice as an object of study.
- Advanced domestic and foreign experience as an object of study.
- Scientific activity of a specialist.
- The concept of scientific novelty and practical significance of the research.
- Methods of generalization and description of experience.
- Methods of studying and describing of the experiment in educational research.
- Detailed plan for the description of a specific pilot project.
- Methodical recommendations as a form of the description of the experience.
- Thesis as a supreme form of research activity.
- Composition and structure of the thesis.
- Contents of the thesis.
- Drawing up of the thesis.
- Theoretical and methodological base of the thesis.
- Empirical base of the thesis.
- The scientific apparatus of the thesis.
- The thesis: theoretical novelty and practical significance
- Research paper (article) as a form of presentation of the results (of the thesis) study.
- Topical problems of social work in research.
- The role of pilot social projects in updating social work practices.

*Tasks for independent work:*

1. Why should a practitioner have the knowledge, skills and abilities of research?
2. Explain the meaning of the concept of "research".
3. Develop requirements for research.
4. Indicate the main fields of research.
5. What scientific papers on the problems of theory and practice in educational science do you know? Name the author(s) of these works.

6. Start making a list of the scientific texts you have studied (theoretical and empirical), observing the requirements for drawing up of the list of references.
7. What is the essence of the research program?
8. What are the functions of the research program? What is the essence of each of the functions?
9. Indicate the structure of the research program.
10. Determine the contents of each part of the research program.
11. Define the concepts of “problem situation”, “contradiction”, “problem”.
12. Give your understanding of the problem solving at the research level.
13. What is the meaning of theoretical work in defining of the research problem?
14. Specify the types of research problems.
15. What is the essence of the aim of research? What is the correlation between the aim and tasks of the study?
16. Indicate what can be the object of study.
17. Explain your understanding of the subject of study.
18. Why is the procedure for interpreting the basic research concepts necessary?
19. Analyze your abstract papers, course papers in terms of the knowledge gained on the research program.
20. Explain the meaning of the concept "research topic".
21. Specify the requirements for the topic of educational research.
22. Make up general rules for choosing a research topic.
23. What is the structure of self-examination of research opportunities.
24. What are the requirements creating a research topic.
25. Conduct self-examination of the study, that is, determine the compliance of the selected topic (abstract or course paper) with your research capabilities.
26. Explain the meaning of the concept "scientific research apparatus."
27. What is the essence of the development of scientific research apparatus?
28. Specify the composition of the scientific apparatus: 1) abstract paper; 2) course paper; 3) thesis.
29. What research operations are related to research strategy?
30. What research operations constitute research tactics?
31. Evaluate your research capabilities by answering the question: What research operations are already available to you? What operations as a researcher you have not mastered yet?
32. Specify the term used to refer to the assessment of the study by its performer from the point of view of scientific and practical value.
33. How one can determine the scientific novelty of the study?
34. How is the practical significance of the study determined?
55. Explain the meaning of the concept of "work experience".
56. What is the sequence of studying social work experience?
57. What is the difference between a work experience description plan and a learning experience plan?
58. Specify the form of the description of the experience.
59. When is an analytical report used to describe work experience?



60. Indicate the main points of the plan for writing an analytical report on the results of studying work experience.
61. What is the essence of project development as a form of experience description?
62. Under what conditions can project design be used as a form for describing work experience in educational research? Indicate the main types of design developments. What is the sequence of the description of the design development?
63. What is the role of social experiment in improving the practice of social work and the accumulation of innovative experience?
64. What is the technology of describing an educational experiment in educational research?
65. What experimental social projects are implemented in the domestic practice of social work? What are their general and specific results?
66. Make a detailed plan describing the implementation of a specific social project in the practice of social work.
67. Make up general guidelines for the graphic design of the scientific text.
68. What rules should be observed in the preparation and drawing up of statistical tables?
69. Make up additional, compared to course papers, requirements for the thesis.
70. Name the basic quality criteria for the thesis.

## **7. Educational, methodical and information support of the discipline**

### **Basic literature**

1. Kuznetsov, I.N. Thesis work. Methods of preparation and design / I.N. Kuznetsov. - 4th ed. - M.: Dashkov and Co., 2012. - 488 p. - ISBN 978-5-394-01697-4; [Electronic resource]. URL: <http://biblioclub.ru/index.php?Page=book&id=229293>
2. Raizberg, B.A. Writing and presentation of theses. Practical guide / B.A. Raizberg. - M.: Maroseyka, 2011. - 198 p. - ISBN 978-5-903271-62-7; [Electronic resource]. -URL: <http://biblioclub.ru/index.php?Page=book&id=96478>
3. Dobrenkov V.I. Methodology and methods of scientific work: study guide.-M.: KDU, 2012.-274 p.

### **additional literature**

1. Basics of scientific work and methodology of dissertation research / G.I. Andreev, V.V. Barvinenko, V.S. Verba et al. - Moscow: Finance and Statistics, 2012. - 296 p. - ISBN 978-5-279-03527-4; [Electronic resource]. - URL: <http://biblioclub.ru/index.php?page=book&id=221203>
2. Borytko N.M. Methodology and methods of psychological and educational research. - M.: Academy, 2009.

3. Kraevsky V.V., Berezhnova V.E. Methodology of education science: a new stage .- M., 2008.
4. Educational science / Ed. P.I. Pidkasistoy.- M., 2011.
5. Zagvyazinsky V.I. Methodology and methods of psychological and educational research. - M., 2011.
6. Novikov A.M. Novikova D.A. Methodology of scientific research. - M.: Librokom, 2010 - Access mode: <http://www.biblioclub>
7. Zagvyazinsky V.I. Methodology and methods of psychological and educational research.- M.: Akademiya, 2010.- UMO RF.- Access mode: <http://www.lib.bspu.ru>
8. Zavalko N. A. Efficiency of scientific and educational activities in higher education .- M.: Flint, 2011.-Access mode: <http://www.biblioclub.ru>
9. Ruzavin G.I. Methodology of scientific knowledge. Tutorial - M.: Unity-Dana, 2012. - Access mode: <http://www.biblioclub.ru>
10. Kozhuhar V. M. Fundamentals of scientific research. - M.: Dashkov and Co., 2012. - Access mode: <http://www.biblioclub.ru>
1. Kraevsky V.V. General principles of education science, - M., 2003.
2. Methods of systemic educational research. - M., 2002.
3. Shipilina L.A. Methodology of psychological and educational research. A manual for graduate students and undergraduates in the direction of "Pedagogy" 3rd ed., Sr. - M.: Flint, 2013. Access mode: <http://www.biblioclub.ru>

## **8. Technical equipment supply for the discipline**

To conduct the discipline the Institute has:

- computer labs with computers connected to the local network with the Internet access;
- the access to the Internet at each working place;
- the library has a sufficient number of printed manuals with guidelines for the implementation of practical tasks.

## **9. Guidelines for studying the discipline:**

The objectives of the assignments for the course "Research work":

- 1) to deepen the knowledge on research problems;
- 2) to improve research skills;
- 3) to develop the skills for presenting the results of research activities.

## **10. The requirements to the midterm attestation in the discipline:**

The form of attestation is the presentation of the master's thesis.

Within the framework of current and midterm control, the quality and depth of mastering of the main contents of the discipline, as well as practical skills, are assessed. Forms of control can be oral, written, must be complemented by practical tasks. Assessment criteria are developed by the head taking into account the levels of training (information and technology) masters.

The program has been developed in accordance with the Federal State Educational Standards of Higher Professional Education for the training program on 04.04.01 Teacher education No. 1505 of 21.11.2014 and approved at the meeting of the Department of Education Science and Psychology of Vocational Education of M. Akmullah BSPU on August 30, 2018, Protocol No. 1

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