THE CONCEPT AND ESSENCE OF THE TEACHER'S RESEARCH ACTIVITIES

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Abstract: Research activities are among the most prestigious, socially significant and economically viable aspects of human activity. It provides the prospective development of the economy, significantly enriches the culture, introduces a margin of safety in the intellectual potential of society, which determines social progress. The article discusses the professional qualities of the teacher-researcher. The influence of research activity on the development of the teacher's professional qualities is described. The essence of teachers' scientific research activity is reflected in different sciences – pedagogy, psychology, sociology, management.

Keywords: research activities, research culture, teacher-researcher, professional development.

1 Introduction

Many scientists, philosophers, sociologists, psychologists, educators addressed the issue of understanding the definition of "culture" and interpreted it as 1) "a high level of something, high development, ability"; (1) 2) "all types of transformational activity of a person and society, as well as the results of this activity"; (2) "a combination of a high level of development and improvement of all components of the activity, development and realization of a person's personal forces, his abilities and capabilities". (3)

From the point of view of the educational system, cultural issues were paid attention by scientists such as J.A. Comenius, K.D. Ushinsky, Y. Altynsarin, S.T. Shatsky, A.S. Makarenko, V.A. Sukhomlinsky, and others. Each of them in the approach to cultural issues has its own positions, but it is common for all educators that the teaching and education process can be carried out only by a teacher with high culture. Culture as a social phenomenon has been studied in various areas of human life, such as:

- political (A. A. Volkov, K. K. Zhanpeisova);
- aesthetic (L.V. Babich, A.S. Kirakosyan);
- musical (M.Kh. Baltabaev, Ya.I. Radzitskaya);
- professional communication (D.G. Mukhamedkhanova, A.K. Rysbaeva);
- pedagogical (E.V. Bondarevskaya, A.A. Moldazhanova);
- psychological (S.P. Ivanova, A.A. Bizyaeva, A.L. Menschikova).

The teacher's professional culture consists in providing conditions for developmental learning, aligning students with age and individual characteristics, assessing the student's understanding of the content of educational material that is formed in the process of creative synthesizing by a teacher of various aspects of knowledge (pedagogical, psychological, methodical) and the development of a teacher's professional and personal qualities (for example, empathy, reflection, etc.). The formation of the emotional and moral sphere, intellectual and volitional qualities is especially significant for the teacher's professional culture. (4)

The professional competence of the future teacher as J. Raven (5) argues, "... consists of a larger number of components, many of which are relatively independent of each other ... some of the components relate more to the cognitive sphere, and others to the emotional one. These components can replace each other as components effective behavior" and that "before undertaking an assessment of one's abilities, it is necessary to establish the values, hobbies or intentions of a given individual ... There is no sense in trying to assess human abilities and it is due to the subjective importance of the goals for him". The five personality traits, according to N.V. Kuzmina, consist of 5 elements in aggregate such as a special pedagogical, methodical, socio-psychological, differential psychological, autopsychological. (6-7)

A.K. Markova draws our attention to the understanding of competence as a combination of mental qualities, mental state, allowing a person to act independently and responsibly, possessing the ability and ability to perform certain labor functions. (8-9) According to I.A. Zimnyaya, (10) competence is represented in the professional activities of the teacher in such categories as "readiness", "ability", "responsibility", "confidence".

Such characteristics of a teacher's professionalism allow us to determine the trajectory of a teacher's professional growth, his values, which are the main content of the future professional culture of an education specialist.

The culture forming trajectory of the formation of a teacher's professionalism consists of 1) a description of the signs and an expected (planned) level of competence in a certain area; 2) determining the necessary and sufficient set of training tasks (situations), the sequence of which is built in accordance with the growth of completeness, problematics, specificity, novelty, vitality, practicality, interdisciplinary, creativity, value-semantic reflection and self-assessment, humanitarian expertise of solutions, the need to combine fundamental and applied knowledge; 3) the process technology, including the sequence of presentation of tasks to the student - situations of various types and levels; 4) algorithms and heuristic schemes that organize the activities of students to overcome difficult situations; 5) technology of support, counseling, and support for students in the process of passing the program. The given paradigm becomes significant for the training of specialists of the highest professional level.

One of the indicators of the professional culture of future specialists is their ability to research activities.

2 Materials and Methods

Research activity is one of the most prestigious, socially significant, economically viable aspects of human activity. It provides a perspective development of the economy, enriches the culture substantially, brings a margin of solidity into the intellectual potential of society, which determines social progress. (11)

In the modern world, science performs the following functions:

- analytical - comprehension of real reality, its analysis, evaluation;
- simulative - the creation of ideal schemes, models of ongoing processes and phenomena of the past, present, and future;
- system-forming - education from scattered information, facts of the system of knowledge, representations in the form of concepts and theories defining consciousness and self-awareness of man and mankind;
- optimizing - providing an optimal solution to the problems that arise before a person and society;
- orientational - awareness in real life, practice, human relationships, politics and religion, the choice of the best of them;
- prognostic - the definition of changes in nature and society, in man and knowledge;
- informational - ensuring communication and mutual understanding between countries, social systems, branches of production, science and culture;

- innovative - the penetration of discoveries into science, public practice, culture, health, and education.

The implementation of the system of continuous education implies consideration of the position of the teacher in terms of compliance with its international approaches and requirements. In this regard, it is necessary to consider the resolution of the XXVI session of the General Conference of UNESCO, according to which the concepts of "research activity" and "scientific work" of a university lecturer are split up, which are not divided in Russian science. Research activity refers to original developments in the field of natural or social sciences, culture or education, involving careful, orderly research, depending on the nature and conditions of the posed problem.

Scientific work is interpreted as a process by which university students prepare scientific publications on their subject, publish their works, improve their activities as teachers. In an international organization's document, vocational school teaching is declared as a profession and is regarded as a form of public service that requires teaching staff with expert knowledge and specialized skills acquired and supported through persistent learning and research throughout life.

In the 1980s and 1990s, a number of teacher models were developed in the theory and practice of professional education. At the IX International Pedagogical Congress (1988), a model developed by Belgian scientists was approved (Table 1).

Table 1. The Model of Teacher

Requirements for a teacher as a person	Requirements for a teacher as a specialist	Requirements for a teacher as a professional
a width of views, adaptability, interest in innovation, willingness to take responsibility, in-touch capabilities, emotional strengths	solid academic education, deep knowledge in the field of education	solid academic education, deep knowledge in the field of education

In the English model of the teacher the following areas of activity are highlighted:

- knowledge of the needs of students;
- ability to assess the effectiveness of its activities;
- ability to develop curricula and materials;
- mastery of professional skill;
- the ability to be a consultant and the ability to consult with others;
- interpersonal skills;
- conducting research work;
- improving their professional skills.

In the domestic theory, there are several approaches to modeling the activity of a teacher and the following models of teacher activity are distinguished:

- the teacher performs the classic function of learning (transfers knowledge, develops skills and abilities of the future specialist);
- the teacher stimulates the student's creative activity, directs his search and cognitive activity for the independent acquisition of knowledge (the learning subject in the pedagogical process);
- the teacher strictly controls the process of becoming a specialist, applying learning technologies that guarantee a high level of specialist training;
- the teacher creates cumulative conditions (pedagogical field) that develop the personality of the future specialist;
- the teacher stimulates mental activity and a creative search for the student.

Practically in each of the models presented, the activity of the teacher is present as a component of research activities, since the social significance and the need for science is imperishable, it is eternal. Thus, research activities should be considered as a component and as a condition for the development of the teacher's professional skills. (12)

The researcher performs two main functions by organizing and conducting his research:

- firstly, he systematizes, accumulates the knowledge accumulated by mankind;
- secondly, he learns a new unknown that enriches science. These functions remain relevant at all times, only their content changes as changes occur in public life, the scientific problems studied, the methods of work.

To implement these functions, the researcher must have a number of qualities that create a solid foundation for his personal and professional growth.

Research activity is an extremely intense, creative work that requires complete commitment, perseverance, patience, dedication, creative thinking based on the feeling of the new, the desire to know the unknown. In the history of pedagogical science, there have been many attempts to list the most important qualities of a research scientist. So, K.E. Tsiolkovsky (13) believed that the main personality traits of a research scientist should be a good memory, ability to concentrate, withdraw into yourself, scientific imagination, intellectual independence, that is, independent thinking, enthusiasm, passion, obsession with science, perseverance.

V.A. Obruchev (14) identifies three basic principles of fruitful scientific activity such as planning, accuracy, and love of creativity. I.P. Pavlov (15) referred to the leading personality traits of a research scientist such as scientific consistency, strength of knowledge of science and the desire to move from them to the heights of human knowledge, restraint, patience, willingness and ability to do rough work, patiently accumulate facts, scientific modesty, willingness to devote life to learning.

K.I. Skryabin (16) noted the special importance in the scientific work of the love of science, the chosen specialty. As we see, exceptionally high demands were made to the identity of the researcher, requiring him to commit himself completely (Table 2).

Table 2. Indicators of the Effectiveness of Creative Self-Realization of the Teacher-Researcher

Directions of creative self-realization	Performance indicators	Criteria for evaluation
1. Research Instructor	Having a personal creative teaching concept; the degree of originality and novelty of the methodology (technology)	Scientific character, validity and consideration of the teacher's typology, originality, novelty, efficiency
2. Teacher-researcher	Creating a personal creative concept of education; the degree of originality and novelty of the methodology (technology) of education	Relevance, practicality, consideration of the teacher's typology of personality, effectiveness, soundness, systematic

3. Research Methodist	Construction of methodical work using the means of pedagogical diagnostics; the degree of methodological culture	Diagnosticity, efficiency, predictability, conceptuality, scientific character, validity
4. Research scientist	The implementation of holistic research on current issues of education	Theoretical and practical significance, the novelty of the research, the approbation of the results
Key abilities for creative self-realization	Ability to creative self-development, to creative activity, the vision of the problem, to forecasting, to the introduction of innovations, to research work, to the programming of their activities, to creative reflection, to the generation of ideas, to the realization of the creative concept	

The term “teacher’s research culture” is relatively new in the conceptual framework of pedagogy. This concept is only included in the broad research turnover, as evidenced by its presence and the usage in psychological and pedagogical works (I.F. Isaev, V.I. Zagvyazinsky, I.A. Kolesnikova, A.M. Novikov, V.A. Slastenin, E.V. Shashenkova).

Identify of the essence of the teacher’s research culture, its structure and functions through the basic characteristics of the initial category “culture” as a complex, interdisciplinary, general-methodological concept and “professional pedagogical culture” as its relevant component in the field of education, as well as features of pedagogical activity her, including research activities. Theoretical analysis of the research problem allows us to consider culture as a set of spiritual and material values. Creativity, the result and method of creative activity, the process of creative self-realization of the essential forces of the personality, as well as social experience, reflected in traditions and innovations and the level of personal development and self-improvement, is reflected in research activities. All this can be found in the studies of V.S. Bibler, I.F. Isaeva, I.A. Kolesnikova, G.M. Kodžaspirova, E.S. Markarian, S.I. Ozhegov, G. Rickert, V.A. Slastenin.

Essential for our study is the consideration of I.F. Isayev of culture as a process of learning activities and as a result. Analysis of studies on the general theoretical foundations of professional and pedagogical culture and its individual aspects. Research E.V. Bondarevskaya, E.V. Berezhnova, I.F. Isaeva, L.V. Zanina, I.I. Zaretskaya, V.V. Kraevsky, I.A. Kolesnikova, S.V. Kulnevich, P.I. Pidkasisty, A.P. Sitnik, V.A. Slastenina, L.D. Stolyarenko allowed considering the definitions of “pedagogical culture”, “professional-pedagogical culture” and “research culture” as an important part of the general culture manifested in the system of professional qualities and the specifics of professional activity. We found that the most significant for the determination of the teacher’s research culture, its structure is the analysis of the main aspects of pedagogical activity carried out by the system of methods of research activities and regulated by the consciousness and personality activity (Yu.K. Babansky, A.N. Leontyev, S.L. Rubinstein). Exploratory activity is defined as a special form of knowledge, a systematic, purposeful study of the pedagogical process using the means and methods of science (V.V. Kraevsky, E.V. Shashenkova, A.M. Novikov). The teacher's research culture is presented as a generalized characteristic of exploratory activity as a process of creating, mastering and using pedagogical innovations and the result as a qualitative characteristic, a high level of various manifestations of this activity.

3 Results and Discussion

Theoretical analysis, a generalization of pedagogical and psychological approaches to the characteristics of the phenomenon under study allowed us to define the teacher’s research culture, the key concept for our research. The teacher's research culture is an integrative, dynamic personal characteristic, including pedagogical values, research ways of solving creative professional tasks, creative activity and a measure of self-realization in innovative pedagogical activity. We consider methodologically sound, interrelated and interdependent components to be the structural components of the teacher's research culture:

- axiological;
- cognitive;
- activity-technological;
- individually creative. (17)

The axiological component of a teacher’s research culture is determined by a set of pedagogical values such as the humanistic orientation of pedagogical activity; professional needs of teachers in innovation and the motives of personal self-realization; assessment, understanding of pedagogical ideas, concepts, norms of professional activity, methodological reflection.

The cognitive component of the teacher's research culture includes knowledge of the basic methodological concepts of pedagogy, the categories, and patterns of pedagogical science, the methodology of scientific knowledge; psychological and pedagogical knowledge; knowledge of innovative processes in education, the principles of diagnostic methods and research tools.

The activity-technological component of the teacher's research culture determines the ways to solve creative pedagogical problems in innovation, the system of analytical, design, constructive-prognostic, assessment-reflexive research skills, methods of scientific knowledge, methods, forms and means of innovation. (18)

The individually creative component of a teacher’s research culture implies a mechanism for the teacher to master this culture and its embodiment in innovative pedagogical activity, transforming abilities in solving creative professional tasks, forming an individual style of activity, striving for self-improvement. The functional purpose of the teacher’s research culture is viewed from the standpoint of the innovation process and its result (Table 3).

Table 3. A Structurally Functional Model of Teacher’s Research Culture

Teacher’s research culture		
Structural components	Functional components (processual)	Functional components (effective)
– axiological component – cognitive component – pragmatist-technological component – personally creative component	– analytical function – design function – constructive-prognostic function – estimated-reflexive function	– methodological culture – professional thinking – pedagogical creativity, the experience of the creative activity
Innovative teacher’s activity		

The analytical function of the teacher's research culture is aimed at understanding the new goals of education, psychological and pedagogical concepts of teaching and using them as the basis of innovative activity. The design function is connected with the creative solution of the tasks of designing the educational process, the pedagogical systems at the strategic level based on the analysis of the pedagogical situation, the choice of the optimal variant of its implementation. The constructive-prognostic function is aimed at building a holistic educational process at the tactical level based on the correlation of the pedagogical analysis with the socially defined and personally accepted goal. The evaluation-reflexive function of a teacher's research culture is associated with an awareness of the importance of innovative pedagogical activity and evaluation of its results, it lies in understanding, comparing and evaluating its productive activities, creates conditions for the development of creative activity, ability to manage its activities and self-improvement. (19)

When considering the teacher's research culture as a result of innovation, we found it important to highlight the methodological culture, professional thinking, pedagogical creativity and experience of creative activity with functional components. The idea of the essence, structure, and functions of a teacher's research culture is a necessary theoretical and methodological prerequisite for analyzing the capabilities of the advanced training system in shaping a teacher's research culture.

The formation of the research culture of the future teacher is a purposeful, specially organized process carried out in the context of professional training in accordance with the official educational standards and qualification characteristics of a specialist. The mechanism of formation of the future teacher's research culture consists of an understanding of the integrative essence of the components (informational, artistic, creative, practical, value-motivational) and the recognition of each ability to influence, change and interpenetrate each other.

The pedagogical conditions for the implementation of the teacher's research culture model are based on the organization of the educational process, considering the unity of the methodological approaches to the student's research activities, on the phased formation of the research culture components and the orientation of the knowledge and skills acquired for practical application. The reliance on an individual-personal approach to each participant in the educational process makes it possible to most productively implement the interaction of active forms of student activity, such as performing, research. Thus, the model of the formation of the research culture of the future teacher is implemented in the following areas.

The formation of the informational component consists of mastering basic knowledge in the field of pedagogy methodology and application of knowledge in the laboratory. The value-motivational component is aimed at recognizing the importance of research activities in the professional development of a specialist. An essential role here is played by self-analysis of one's own professional skills, planning and building a self-improvement program, and research reflection. The integrative unity of the foundations of theoretical knowledge and activity is due to the fact that the mastery of a research culture is possible only in the process of one's own research activity, by applying the methods and methods of scientific search. Therefore, the practical component is formed in the conditions of a pedagogical experiment at school, in the design of the results of their own research by students.

The main discipline that forms the information-knowledge component is the discipline "Fundamentals of Scientific Research". The content side and subject of the latter are aimed at developing research search mechanisms among students and reflecting the specific features of research activities in the field of education. In the process of studying this discipline, students form an attitude towards science as the most important means of improving research practice, acquire basic knowledge and skills in the field of scientific research, consider the specifics of the field. (20)

The professional activity of the future teacher requires the ability to learn, design, model, and on this basis to determine the most appropriate ways to solve problems in practice. A future teacher should have the basics of research culture, which find their daily manifestation in values-based attitude to professional and research activities, the readiness of an individual for scientific knowledge based on available research knowledge, skills and abilities of an individual to build their own system of research activities. (21)

Research culture, along with professional ethics, socio-pedagogical and organizational culture, is part of the professional culture of the bachelor of education. It involves the ownership of future teachers of the methodology and methods of research. The process of forming the foundations of the research culture of future teachers becomes dominant in the process of vocational training at the university. An important component of vocational training is student research. Within its framework, the foundations of the scientific organization of labor are laid, the necessary analytical qualities demanded in professional activity are formed. Problems of research development as a component of vocational training are reflected in the works by I.B. Karpauhova, F.K. Savina, S.M. Tutarischeva, T.I. Torgashina, E.F. Fedorova, V.A. Yakovlev, A.V. Yastrebova, and others. They note the significance of this kind of activity for the development of the intellectual qualities of a person; they justify the forms and methods of its organization in the university.

Certain aspects of the formation of research culture among schoolchildren, students, cadets, and teachers are revealed in the works by V.I. Markova, O.G. Morozova, I.V. Nosayeva, T.N. Shapova, C.B. Shmachilin, M.V. Chistovoy, and others. Vocational-oriented learning technologies are disclosed in the works by M.Ya. Vilensky, P.I. Obraztsova, A.I. Uman, and others. Despite the fairly high level of knowledge of this issue, at present, there is a contradiction between the objectively growing need for a teacher's research culture and the lack of mechanisms for its formation in the vocational training system. Scientific work is an extremely intense, creative work that requires complete commitment, perseverance, patience, dedication, creative thinking, a sense of the new, a desire to know the unknown. (22)

In the history of science there have been many attempts to enumerate the most important professional qualities of a research scientist, among which are:

- good memory;
- ability to concentrate;
- withdraw into yourself;
- scientific fantasy;
- intellectual independence, i.e. independence of thought;
- eagerness, passion, obsession, and perseverance in science.

V.A. Obruchev (14) identifies three basic principles of fruitful scientific activity:

- regularity;
- accuracy;
- love of creativity.

I.P. Pavlov (15) believed that a research scientist is characterized by scientific consistency, strength of knowledge of the basics of science and the desire to go from them to the heights of human knowledge, restraint, patience, willingness and ability to do rough work, patiently accumulate facts, scientific modesty, willingness to devote life to learning. K.I. Skryabin (16) noted the special importance in the scientific work of the love of science, the chosen specialty. An important quality of a researcher is a psychological and pedagogical orientation, manifested in the constant striving to achieve the main goal such as the formation and development of the student's personality, the improvement of the quality of his upbringing and training.

Based on the above, the professionally important qualities of the future teacher as a researcher include:

- optimism - faith in the opportunity to improve the state of affairs, to work out optimal options for the creative development of students;
- humanism, involving kindness, sympathy, warmth to people;
- justice, poise, tolerance, restraint, self-control;
- the ability to conduct research work honestly, consistent with his conscience.

This, in turn, implies the demands of the researcher towards himself and the people, that is, following the standards of morality, the conscientious fulfillment of his professional duty. Sociability and interpersonal skills are essential in research. All of the above mentioned professionally important personal qualities determine the credibility of the researcher, whose components are:

- deep versatile special knowledge;
- possession of professional and research skills;
- the presence of psychological and pedagogical abilities;
- general pedagogical culture;
- ability to communicate with people;
- behavior in accordance with the norms of professional psycho-pedagogical ethics.

Thus, to the researcher, as a professional, extremely high demands were made and placed at the limit of a person's capabilities and require total dedication, which is difficult but can be done in the framework of professional education.

4 Conclusion

The main professionally important personal qualities of a future teacher-researcher, it is legitimate to present them in the following form (17):

1. General psychological and pedagogical qualities:

- professional psychological and pedagogical orientation;
- socially and professionally significant properties of the individual such as civic consciousness, humanism, optimism, stable interest in research work, justice and goodwill towards people; sociability, self-discipline and demanding of others.

2. Professional psychological and pedagogical qualities:

- psycho-pedagogical, theoretical, methodical and practical readiness;
- developed psychological and pedagogical abilities such as communicative, perceptual, projective, suggestive, emotional-volitional, constructive, didactic, organizational, cognitive, expressive-speech, creative.

3. Individual professional psychological and pedagogical qualities:

- the psychological and pedagogical orientation of mental processes such as cognitive and emotional, volitional;
- emotional responsiveness (empathy);
- development of the will;
- self-reflection.

Research culture is manifested in his professional abilities (23-24):

- intellectual (development of scientific psychological and pedagogical thinking), which determine the ability to analyze and explain the subject, to separate the essential from the inessential; conduct psychological and pedagogical experiments;
- to carry out a scientific search in the gnostic cycle "facts - model - hypothesis - result – test";
- build on the basis of experimental data a theoretical (idealized) model, find links between the quantitative and qualitative sides of the phenomenon under study, formulate valid conclusions, establish the limits of their applicability; consider the processes and phenomena in the relationship, to reveal their nature and contradictions; to abstract, analyze and summarize research material; this also includes intuition, the gift of foresight, the vastness of knowledge;
- perceptional, which underlie the ability to penetrate into the inner world of man: extraordinary intensity of attention, impressionability, susceptibility;
- communicative, allowing to establish the right relationships with participants in the research process;
- constructive, giving the opportunity to anticipate the course, development, and results of the educational process;
- suggestive, aimed at obtaining the desired result by emotional and volitional influence, the suggestion by force of words, authority;
- emotional-volitional, which allow you to manage your inner state, feelings, behavior;
- didactic, manifested in the ability to present material, interpret research tasks in an accessible, interesting, clear, clear, reasoned way;
- organizational, allowing to organize the cognitive activity of students, as well as their own work as a teacher-researcher: high self-organization, high performance;
- scientific and educational, which make it possible to quickly acquire new information;
- creative, allowing creatively to solve psychological, pedagogical and research tasks: evasion from the pattern, originality, initiative, satisfaction not so much from the achievement of the research goal, as from its process itself, the irresistible desire for creative activity.

These are the main professionally important personal qualities of the future teacher-researcher, defining him as a true scientist, innovator.

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