

**PRINCIPLES OF DEVELOPING RESEARCH AND INFORMATION-PEDAGOGICAL
COMPETENCES OF FUTURE EDUCATORS**

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Ismatov Dilmurod Elmurodovich

Bukhara State University, Independent Researcher

dilmurod7271@gmail.com

Abstract: *Pedagogical education represents a continuous process of teacher preparation, shaped by social and cultural contexts, and implemented through core professional training programs of varying duration and content. These programs provide opportunities for personal development, including cultural and historical knowledge, mastery of subject-specific skills, and a comprehensive understanding of human and societal dynamics, representing a specific direction in education. This article discusses the theoretical and practical foundations for fostering research activity and competence among future educators. Additionally, it examines technologies aimed at developing research competence in prospective teachers.*

Keywords: *education system, competence, research activity, diverse skills, online communication.*

Introduction. Today, the primary goal of reforms, scientific innovations, and practical updates in higher education is to enhance scientific activity and research engagement. Currently, a number of studies focus on developing the research skills of young specialists during their training, which is undoubtedly of great importance.

Practical and academic bachelor's programs are part of a continuous education system. The difference between a practical bachelor and an academic bachelor lies in the qualification acquired by the graduate. The traditions and features of the bachelor's degree have been shaped both in international and national teacher training systems. Here, we primarily refer to international education programs, which are specifically designed for students planning an academic career. These programs have significantly contributed to the successful development of higher education in the United States.

They also include the development of teacher specialization aligned with the requirements of teacher preparation in our country. Simultaneously, academic teacher training programs, particularly research activities, should be structured as flexible models, enabling students to transfer to pedagogical tracks from graduates of other specialties [1].

Practical programs are aimed at preparing teachers who are capable of solving constantly evolving professional and pedagogical challenges, and who possess mobility and creative skills. From this perspective, teacher training programs should address the following objectives:

- Socializing the younger generation in the context of a digitalized society;
- Establishing educational relationships and organizing communication in line with cultural and humanitarian principles;
- Developing a fully integrated (conceptual) type of thinking;
- Enhancing the status of the teacher;
- Clarifying the role and function of the teacher within the education system.

However, at all stages and levels of future teacher training, questions arise regarding the appropriateness and substantive aspects of equipping them with scientific research skills. While some contemporary researchers consider professional and practical competencies as the priority in training pedagogical personnel, theories of fundamental teacher education give precedence to the stable integration of professional pedagogical culture and research culture [2].

The aim of this study is to examine the methodological aspects and organizational conditions for developing research competence in future teachers from the perspective of continuous pedagogical education strategies. The research methods employed included a methodological analysis of approaches and strategies for the continuous professional development of teachers, as well as an assessment of the level of development of research competence as a component of the teacher's professional culture.

The concept of continuous professional pedagogical education has been formed as an evolutionary phenomenon of educational processes and as a reflection of the trends in educational reforms up to the early 2020s. It can be expressed through the following methodological directions:

- ✓ The aspiration to develop the theoretical and methodological foundations for structuring the content of pedagogical education;
- ✓ At the conceptual level – discussion by the pedagogical community of issues related to organizing the content of pedagogical education;
- ✓ At the normative and instructional-methodological level — development of scientifically grounded professional and qualification characteristics;
- ✓ The pursuit of creating necessary conditions for the personal-activity orientation of pedagogical education content;
- ✓ Strengthening the psychological and pedagogical orientation of pedagogical education content;
- ✓ Orienting the content of pedagogical education toward forming pedagogical culture and skills, and fostering the development of the future teacher's pedagogical creativity, professional, and personal qualities.

Current trends in the reform of pedagogical education can be defined as continuous training strategies, including:

- ✓ Prioritizing the academic preparation of teachers, which enables them to analyze pedagogical activity at a high level and find optimal solutions to pedagogical problems (this approach also enriches both theoretical and practical pedagogy);

- ✓ Viewing teacher training as an integrated process of synchronous professional and personal development (teaching technologies for personal and professional growth);
- ✓ Teaching effective career strategies and planning skills (continuous education planning);
- ✓ Developing network-based learning and a culture of distance collaboration (online communication technologies, communicative teaching) [3].

Thus, undergraduate and graduate programs are designed to provide a two-tiered preparation for teachers.

The target outcomes of this system include the ability to integrate psychological-pedagogical, general cultural, and specialized scientific knowledge, as well as to apply them in professional practice based on scientific principles and methodological culture; working with systematic and critical thinking; and engaging in pedagogical design, modeling, and reflection, including the use of psychological, pedagogical, and didactic technologies.

The concept of research competence is methodologically connected to the categories of educational and research activities. From the perspective of various methodological approaches, research competence can be interpreted as follows [4]:

- Personal characteristics of a teacher that determine their mastery of research methods and techniques for seeking professional information in order to make optimal decisions in problematic situations;
- A set of qualities necessary to perform the functions of research activity or the ability to carry out targeted research tasks, including designing and solving research problems;
- A component of a teacher's professional-pedagogical competence, encompassing personal and professional traits, methodological knowledge and skills, research technologies, and models for integrating advanced pedagogical knowledge into practical education;
- A collection of teacher skills, including the ability to manage scientific information and learn promising educational technologies; select and evaluate program options and develop original projects; study and apply advanced pedagogical experiences, as well as process and analyze research data using statistical methods.

Students' educational-research activity is the process of acquiring and developing skills for creative research work, which includes independently systematizing and analyzing data, writing comments, theses, lectures, and reports on research topics.

Unlike scientific research, educational research work is not aimed at solving major methodological or production-related problems. Instead, it focuses on mastering models of scientific research within a specific field and developing methods and techniques of research activity. At the same time, methodological algorithms and approaches to research, as well as the logic, structure, and procedures of educational-research activities, fully meet the general requirements for studying the theory and practice of the discipline [5].

Research competence is an independent component of a teacher's professional skills and contributes to the development of the following characteristics:

- Motivation of the teacher to enhance their professional growth;
- Ability to transfer research skills and information into the educational process;
- Acquisition of diagnostic and analytical knowledge and skills;
- Methodological, technological, and informational preparedness.

Analysis of the World Skills (life skills) standards made it possible to describe research competence as a set of teacher skills:

- ❖ Developing and applying various diagnostic methods to study the progress of students' individual and collective educational activities;
- ❖ Using information and communication technologies in the processing of diagnostic and statistical data;
- ❖ Organizing and implementing different formats and stages of research project activities;
- ❖ Providing scientific support for students' individual and group research and project activities [6].

According to the state educational standard, students are provided with research competence within their professional competencies (readiness to use systematic theoretical and practical knowledge to formulate and solve research problems in the field of education) as well as the ability to manage students' educational and research activities. At the same time, the indicators for achieving this competence include:

- ✓ Knowledge of modern methodologies of the pedagogical approach and the content and results of scientific research in the respective field;
- ✓ The ability, based on the results of modern scientific knowledge and pedagogical research, to determine the goals and objectives of designing pedagogical activity in the context of a problematic pedagogical situation;
- ✓ Acquisition of skills to design current forms of pedagogical activity based on scientific and pedagogical achievements and research.

Pedagogical courses in the teacher training program aimed at developing teachers' research competence include the implementation of the additional professional training program "Organization of Research Work in Education." Competencies are formed within the framework of this program.

Professional-pedagogical competence is primarily based on four components: orientation toward the individual, orientation toward people, consistent perception of pedagogical events, orientation toward the field of science, and mastery of pedagogical technologies. A teacher's professional competence can be characterized by creativity.

When discussing the importance of practice as a source of knowledge in shaping professional competence in a modern teacher, it is essential to emphasize the essence of the knowledge acquisition process. Based on this, it can be concluded that it is necessary to systematically study students' pedagogical needs, interests, and areas of special significance.

Furthermore, organizing the learning process based on ideas, concepts, and advanced pedagogical experiences that serve to satisfy students' creative interests and needs contributes to forming a meaningful and active approach to creative development. Based on the development of students' creative skills, particular attention should be paid to fostering their specialized pedagogical creativity competence. In this context, extensive use of modern information and communication technologies, innovative strategies, and interactive teaching methods and technologies is appropriate.

The level of students' scientific-research competence was assessed using two methods:

- ❖ A test survey to determine the level of methodological culture;
- ❖ Evaluation of research project reports based on a set of indicators: relevance of the project, methodological significance, technological application, verification of results, availability of real materials, project presentation, and consistency and completeness of data.

According to the results of the program implementation, positive trends were observed: activation of teachers' publishing activity, active participation in the university's scientific-methodological seminars and conferences, and expansion of the scope of scientific interest.

Conclusion. Thus, the development of a future teacher's scientific-research competence is organized as a continuous process of integrating theoretical and practical training, which involves the direct engagement of teachers in research activities. Forms of student research work are aimed at solving non-standard professional and pedagogical problems and mastering effective educational and research methods. At the same time, research competence can be regarded as a metasubject characteristic of a professional teacher, enabling the systematic demonstration of high-level professional skills across methodological, managerial, communicative, and innovative competencies.

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