DOI: https://doi.org/10.36719/2789-6919/56/19-31

Gunel Mammadova
Azerbaijan State Pedagogical University
https://orcid.org/0000-0002-6248-9265
gunelmemmedova2806@gmail.com

The Current State of Preparing Future Primary School Teachers for Research Activities and Ways of its Improvement

Abstract

The development of education creates an essential foundation for improving the welfare of the global population as well as enhancing individual quality of life. Education enables people to acquire modern technologies more rapidly, secure a respectable position in the labour market, actively participate in lifelong learning, maintain a healthy lifestyle, and demonstrate a responsible attitude toward the environment. The role of education in society is not limited to transforming students' knowledge and skills into economic capital; it also functions as an important social institution that contributes to the comprehensive development of individuals and overall social progress. Preparing future primary school teachers for teaching and research activities involves the formation of research skills as well as the development of motivational-value, informational-content, and practical activity components. The content of this preparation includes the acquisition of the knowledge, skills, and competencies necessary for future teachers to conduct effective scientific and pedagogical activities in primary schools. The main purpose of this process is to familiarize future teachers with new scientific achievements in the subjects they teach, create a healthy, engaging, and motivating learning environment, effectively apply diverse methods and modern teaching technologies, and ultimately ensure the provision of quality education. Studying the opportunities and methods for developing the professional competencies of future primary school teachers, as well as determining the pedagogical model of this process, remains one of the current problems of pedagogical theory and practice. The relevance of the research is determined by the need to identify a pedagogical model and implementation mechanisms that ensure the development of professional competencies among future primary school teachers.

Keywords: *prospective primary school teachers; pedagogical higher education; teacher professional competence; research skills; teacher education*

Günel Məmmədova
Azərbaycan Dövlət Pedaqoji Universiteti
https://orcid.org/0000-0002-6248-9265
gunelmemmedova2806@gmail.com

Gələcək ibtidai sinif müəllimlərinin tədqiqat fəaliyyətinə hazırlığının müasir vəziyyəti və onun təkmilləşdirilməsi yolları

Xülasə

Təhsilin inkişafı qlobal əhalinin rifahının yüksəldilməsi, həmçinin, fərdi həyat keyfiyyətinin yaxşılaşdırılması üçün mühüm zəmin yaradır. Təhsil insanlara müasir texnologiyaları daha tez mənimsəməyə, əmək bazarında layiqli mövqe tutmağa, ömürboyu təhsil prosesində fəal iştirak etməyə, sağlam həyat tərzi sürməyə və ətraf mühitə məsuliyyətli münasibət göstərməyə imkan verir. Cəmiyyətdə təhsilin rolu yalnız şagirdlərin bilik və bacarıqlarının iqtisadi amilə çevrilməsi ilə məhdudlaşmır; o, eyni zamanda şəxsiyyətin hərtərəfli inkişafına və sosial tərəqqiyə xidmət edən mühüm sosial institutdur.

Gələcək ibtidai sinif müəllimlərinin tədris və tədqiqat fəaliyyətinə hazırlanması onların tədqiqatçılıq bacarıqlarının formalaşdırılmasını, motivasiya-dəyər, informasiya-məzmun və praktik fəaliyyət komponentlərinin inkişafını nəzərdə tutur. Bu hazırlığın məzmunu gələcək müəllimlərin ibtidai məktəblərdə səmərəli elmi-pedaqoji fəaliyyət göstərə bilmələri üçün zəruri olan bilik, bacarıq və kompetensiyaların mənimsənilməsini əhatə edir. Bu prosesin əsas məqsədi gələcək müəllimləri tədris etdikləri fənlər üzrə yeni elmi nailiyyətlərlə tanış etmək, sağlam, cəlbedici və motivasiyaedici təlim mühiti yaratmaq, müxtəlif metod və müasir təlim texnologiyalarından səmərəli istifadə etmək və nəticə etibarilə keyfiyyətli təhsilin təmin edilməsinə nail olmaqdır. Gələcək ibtidai sinif müəllimlərinin peşəkar kompetensiyalarının inkişaf etdirilməsi imkanlarının və metodlarının öyrənilməsi, eləcə də bu prosesin pedaqoji modelinin müəyyənləşdirilməsi pedaqoji nəzəriyyə və təcrübə üçün aktual problemlərdən biri olaraq qalmaqdadır. Tədqiqatın aktuallığı gələcək ibtidai sinif müəllimlərində peşəkar kompetensiyaların inkişafını təmin edən pedaqoji modelin və onun tətbiq mexanizmlərinin müəyyənləşdirilməsi ilə şərtlənir.

Açar sözlər: *gələcək ibtidai sinif müəllimləri, ali pedaqoji təhsil, peşəkar kompetensiya, tədqiqatçılıq bacarıqları, müəllim hazırlığı*

Introduction

The normative documents regulating the content of higher pedagogical education emphasize the importance of such concepts as research-oriented teacher, competent teacher, professional teacher, creative teacher, and the formation of a creative activity style in future teachers. This is because the formation of a personality that "is aware of his or her responsibility, respects the principles of democracy, national traditions, and human rights and freedoms, adopts the ideas of Azerbaijanism, and demonstrates independent and creative thinking" (Republic of Azerbaijan…, 2013) is directly related to the preparation of a professional, competent, and creative primary school teacher distinguished by academic skills, professional expertise, teaching experience, and research competence. For this reason, the transformation of higher pedagogical institutions into education-research-innovation centers have been envisaged to prepare a new generation of competitive pedagogical personnel (Republic of Azerbaijan…, 2013). The Primary School Teacher Education Programme, approved in 2020, provides that future primary school teachers acquire 14 pedagogical skills (Ibrahimov, 2010).

The competencies that should be developed in future primary school teachers during the teaching of pedagogical disciplines can be summarized as follows:

1.the ability to organize the teaching process in diverse socio-cultural contexts;

2.the ability to design, implement, evaluate, and improve the pedagogical process;

3.the ability to master the technology of curriculum development and use it to shape the content of the pedagogical process;

4.the ability to analyze the content of experimental curricula and textbooks, modify the proposed material, and select and adapt additional materials in accordance with contemporary educational requirements.

As the social expectations placed on teachers have changed, different models of the teacher have emerged. A modern teacher is characterized by the ability to equip students with new skills, support the realization of their potential, create intrinsic motivation for learning, and assist them in achieving success. Such a teacher studies students' learning needs and selects appropriate content and methods, adopts innovative approaches to the organization of the pedagogical process, integrates teaching technologies, and intensifies learning by actively engaging students. In addition, the modern teacher is committed to continuous professional development and is capable of creating an engaging and interactive learning environment through the use of online resources and digital platforms. The modern teacher model prioritizes student-centered learning and lifelong professional growth. Within this framework, particular importance is attached to the development of research skills among future teachers. Their ability to think independently and creatively, conduct independent investigations, and apply research findings in the teaching process is considered essential. Why is research competence

regarded as one of the seven key abilities of future primary school teachers? A primary school teacher must possess research skills for several reasons. First, teachers need to follow recent developments and emerging trends in primary education and remain informed about advances in the pedagogy of primary education. This enables them to update their scientific and methodological knowledge and apply new methods and strategies in their professional practice. Research competence also helps teachers identify the changing learning needs of their students, design appropriate strategies, and adopt the best practices in teaching. Second, engaging in research allows primary school teachers to continuously develop their knowledge and professional skills. Third, research competence supports teachers in selecting effective teaching methods, reflecting on new approaches, and making evidence-based decisions in the teaching process. Fourth, teachers who conduct research improve their teaching practices by studying advanced educational experiences, which ultimately contributes to higher levels of student learning outcomes. Fifth, research conducted by primary school teachers enables them to better understand students' individual learning needs as well as their strengths and weaknesses, thereby facilitating differentiated instruction. Sixth, unlike traditional training courses, teacher research is self-directed, which significantly contributes to the development of professional competence. Seventh, teachers who share the results of their research enrich pedagogical theory with practical ideas. Eighth, teaching practices based on personal research help identify effective teaching strategies and innovative instructional technologies and support the development of engaging forms of assessment. Finally, when primary school teachers engage in research, they model a culture of lifelong learning both for themselves and for their students. By demonstrating how to ask questions, seek answers, and critically analyzes information, teachers inspire students to become independent and creative thinkers.

Research

The development of research competence among future primary school teachers should be implemented within the educational process of higher pedagogical institutions. Practice shows that although future teachers acquire knowledge in social and philosophical disciplines, pedagogical and psychological subjects, specialized courses, and their teaching methodologies within a 210-credit programme, and develop professional skills, they are often not sufficiently prepared for scientific research activities.

The research revealed that not only students but also the majority of primary school teachers who participated in the interviews were not adequately prepared for creative research activities. Their theoretical, practical, and methodological preparation does not fully meet the requirements expected of a modern research-oriented teacher. University instructors who participated in the interviews attributed this situation mainly to the low level of motivation among future primary school teachers.

Naturally, both objective and subjective factors contribute to the insufficient development of research skills among students as well as practicing primary school teachers, and to the difficulties they experience when applying theoretical knowledge in the pedagogical process. Research competence should begin to be developed in students from the early years of primary education and should continue to be strengthened in the subsequent stages of schooling. Unfortunately, the initial understanding of research skills that pupils acquire in primary school is not sufficiently developed in later grades. In upper grades, students spend a significant portion of their time memorizing test materials during private tutoring sessions. As a result, they have little time to conduct independent research, analyze and compare results, or engage in creative thinking. Consequently, many future teachers entering the first year of higher pedagogical education lack research skills.

In order to study the level of preparation of students majoring in Primary School Teaching for educational and research activities, the methods of comparative historical analysis, analysis and synthesis, modelling, and the study and generalization of pedagogical experience were employed. Through the application of these methods, we sought to examine both the theoretical and practical aspects of preparing future primary school teachers for educational and research activities. Since future primary school teachers are engaged not only in scientific research but also in pedagogical practice, they are required to integrate these two forms of activity. Systematic and continuous research ensures the effective organization of pedagogical activity, while productive pedagogical practice

contributes to the development of research competence. Therefore, a close interrelationship exists between these two types of activity.

In accordance with the objectives of the diagnostic stage of the experiment, diagnostic interviews, surveys, and analyses were conducted to determine the level of research skills among students majoring in Primary School Teaching at Azerbaijan State Pedagogical University, Baku Slavic University, and Baku Girls University. A total of 270 students participated in the survey: 220 students from Azerbaijan State Pedagogical University (200 studying in Azerbaijani and 20 studying in English), 26 students from Baku Slavic University, and 24 students from Baku Girls University.

While systematic observations were conducted with students studying Primary School Teaching at Azerbaijan State Pedagogical University, interviews were carried out with students at the other higher education institutions, and they were asked to respond to survey questions. In order to ensure accurate diagnosis, both group and individual questionnaires were administered. In addition, students were given various test tasks, creative assignments, and control tasks. The results of students' academic, practical, and creative activities were analyzed comprehensively. The tasks presented to future primary school teachers in both the experimental and control groups were identical in content and scope. In order to determine the level of research competence among students, the following criteria were considered appropriate.

Criteria for Assessing Research Skills

Table 1.3.1
Criteria for Assessing Research Skills

Criterion	Very High	High	Satisfactory	Unsatisfactory
Orientation (motivation for activity)	The activity is based on socially significant motives, and the development of students' research skills relies on conscious orientation.	The activity is based on strong motivation and recognition of the importance of developing students' research skills.	The activity is based on contradictory motives, and awareness of the formation of research skills is unstable.	No attention is paid to the development of research skills among students.
Completeness	Fully masters the content of research skills and can provide precise explanations of each of them.	Is knowledgeable about research skills but demonstrates some inaccuracies when explaining them.	Has general knowledge of the skills but requires additional clarification when explaining their essence.	Experiences difficulty in identifying key research skills and cannot explain their essence.
Accuracy	Correctly applies research skills.	Easily eliminates shortcomings encountered during the research process.	Applies necessary skills but has difficulty correcting errors.	Does not apply research skills correctly.
Awareness (conscious scientific activity)	Explains the structural components of the skills, provides examples, and applies them consciously.	Explains the content of the skills but characterizes their structural components inaccurately.	Experiences difficulty explaining structural components and content and providing examples.	Cannot explain the structural components using examples.
Effectiveness	Effectively applies research skills in pedagogical practice and demonstrates excellent pedagogical and psychological knowledge.	Skillfully uses them in practice and applies psychological, pedagogical, and subject knowledge.	Applies them correctly in some cases but makes mistakes when using psychological and pedagogical knowledge.	Skills are applied incorrectly and serious errors occur.
Rationality	Applies skills in a rational manner.	Generally, uses skills rationally.	Applies them with certain corrections.	Skills are not used rationally.
Connection with other skills	Applies research skills in combination with other pedagogical skills in an integrated manner.	Uses them together with other selected skills.	Applies them together with other pedagogical skills in some cases.	Applies them without connection to other skills.
Time efficiency	Activities are performed on time and professionally, and the result fully corresponds to the objective.	The result corresponds to the objective and is achieved efficiently.	The result partially corresponds to the objective but is not sufficiently efficient.	The activity is unsuccessful.
Readiness for creative research activity	Masters the fundamentals of creativity theory, demonstrates a creative and research-oriented approach, and constantly engages in inquiry.	Knows the fundamentals of creativity theory but does not always use methods rationally.	Has limited knowledge of creativity theory and sometimes fails to demonstrate a creative approach.	Does not know the fundamentals of creativity theory and does not demonstrate a creative approach.

Orientation (the motive and direction of activity), completeness, accuracy, awareness (conscious scientific activity), effectiveness, rationality, connection with other skills, time efficiency, and readiness for creative research activity were adopted as the criteria for assessing research competence. Four levels were identified: 1) very high; 2) high; 3) medium; and 4) low. In addition to these criteria, the evaluation was also conducted according to the degree of students' independence during the research process, which was reflected in the following three levels:

1.the research was carried out under the direct supervision of the scientific advisor;

2.the research was conducted on the basis of a hypothesis proposed jointly with the scientific advisor;

3.the formulation of the problem, the identification of the hypothesis, and the generalization of the results were carried out independently by the student.

One of the issues to which particular attention was paid in determining these levels was the student's ability to apply the knowledge and skills acquired in pedagogy to other fields of science.

This is because integration (both interdisciplinary and intra-disciplinary) plays an important role in the development of students' research skills.

There are a number of notable studies devoted to the levels of development of research competence among both practicing and prospective teachers by scholars such as V. I. Andreyev, E. Y. Girfanov and P. N. Osipov, T. M. Talmanova, L. Sh. Abdulova, A. A. Verbitsky and N. A. Bakshayeva, and A. A. Gubaydullin, among others (Abdullova, 2009; Andreev, 1998; Girfanova & Osipov, 2006; Gubaidullin, 2011; Talmanova, 2003; Verbitskii & Bakshaeva, 2000). These studies emphasize that the main indicator for assessing the development of research competence among future teachers should be based on written academic work in pedagogical disciplines (such as student research papers, abstracts, summaries prepared for seminar topics, and similar assignments).

In order to evaluate research-oriented written assignments in pedagogy (independent work), the following criteria were adopted:

1. the number and volume of completed assignments;
2. the number of assignments completed with high quality (free from plagiarism and characterized by meaningful, coherent, and systematic content);
3. the ability to generalize the problem investigated in the written work.

The three criteria identified above were correlated with four evaluation levels: very high, high, satisfactory, and unsatisfactory. Depending on the content of the material and the didactic objectives, various types of questionnaires, diagnostic tests, and assessment and control tasks were used. During the implementation of such tasks, a group of students demonstrated high intellectual activity, creativity, purposeful and systematic work, the ability to solve problem-based tasks, and the completion of creative assignments. These qualities play a significant role in students' self-realization and personal development. For example, students were asked to respond to questions such as:

- What is the role of humanities, pedagogical-psychological, and specialized disciplines in the development of research competence?
- What pedagogical research skills should future primary school teachers acquire? What can be said about the nature of these skills?
- How do you understand a teacher's readiness for educational and research activities?
- What characteristics define a research-oriented teacher? What role can research competence play in teaching practice?
- Prepare a scientific research project on a selected topic in pedagogy (including the research problem, object, subject, purpose, hypothesis, research methods, and significance).
- Evaluate your level of readiness to use research skills in the pedagogical process on a four-point scale.

However, among another group of students, the same level of intellectual engagement and analytical thinking was not observed during the completion of assignments. These students reproduced the information learned in lectures and seminars almost verbatim, as if copying lecture

notes. The presented material repeated the same structure, sequence, and scope as found in textbooks or lecture materials.

For example, they responded to questions such as:

- List the methods of pedagogical research and briefly explain their content.
- Explain the principles of pedagogical research.
- Describe the structure of scientific research.
- What is a pedagogical experiment? What types of pedagogical experiments do you know?
- Characterise the essence of pedagogical observation.
- What types of student scientific research are you familiar with?
- Which forms and methods of instruction contribute to the development of research competence among students?

A different set of tasks was assigned to the third group of students:

1. Identify the theoretical and empirical research methods, including observation, interview, comparative historical analysis, analysis, synthesis, modelling, pedagogical experiment, survey, testing, rating, the study and generalisation of teaching practice, diagnostic assessment of test and control assignments, the analysis of school documentation, and the study of students' creative work.
2. Present the stages of formulating and solving problem-based tasks in the required sequence: verification of the correctness of the solution to the problem; formulation of the problem and creation of a problem situation; implementation of the necessary principle; use of known means to solve the problem; use of new means to solve the problem.
3. Characterise the stages of transition from elementary skills and competencies to more complex skills and competencies, and indicate which skills and competencies correspond to the first and second stages.

Stage 1

- Explanation of the meaning of the acquired skill
- Familiarisation with the content and structure of the skill being formed
- Organisation of practical activities necessary for acquiring the required skill
- Application of the acquired skills in new and changing conditions

Stage 2

- Familiarisation with the activity model (explanation and demonstration)
- Acquisition of initial skills for applying the rules
- Improvement and development of the acquired skills
- Application of skills and competencies in various creative and practical activities

The implementation of such tasks activates the learning process and accelerates the acquisition of the necessary knowledge, skills, and abilities. At the same time, the level of skill development among students is assessed, learning becomes more individualized, and a student-centered learning process is organized. However, it should also be noted that it is quite difficult to accurately and comprehensively assess students' intellectual development, thinking style, logical reasoning, creativity, and intellectual capacity within this process. The fourth group of questions and tasks involved preparing answers according to the methodology adopted for computer-based instruction. For example:

1. Explain the characteristics of the stages of the teacher's creative process and the role of business games in preparing teachers for creative teaching activity.
2. Arrange the stages of the teacher's creative process in the correct sequence: development of a plan; analysis and evaluation of creative outcomes; identification of a plan aimed at solving a pedagogical task (problem); implementation of the pedagogical plan in human activity and communication.
3. Indicate the correct sequence for conducting business games in the learning process: determining the objectives of the business game; analysis and summarising the outcomes of the business game; updating knowledge in pedagogy, psychology, and subject teaching methodology; familiarisation with the rights and responsibilities of participants; understanding the course of the

game; distribution of roles among participants; participants performing their roles according to the implementation plan.

The fifth group of questions, tests, control tasks, and assessment assignments was aimed at evaluating students' knowledge, skills, abilities, and readiness for educational and research activities. For example:

- Justify the necessity of research competence in the teaching and research activities of primary school teachers.
- Determine the level of your research competence.
- Evaluate your level of scientific preparedness.
- Identify the forms and methods of teaching that play an important role in developing research skills among future primary school teachers (evaluate them using a four-point scale).
- Assess your readiness for educational and research activity (indicate the level of development of the motivational-value, informational-content, and practice-oriented components of your readiness for research activity).

Finally, practical tasks were assigned in order to determine the level of development of pedagogical research skills among future primary school teachers. For example:

- Design and solve a pedagogical problem-based task;
- Develop a programme for observing a specific pedagogical phenomenon in accordance with the stages of the observation method;
- Prepare a programme and plan for studying pedagogical practice;
- Conduct and evaluate the analysis of two or three lessons in primary classes of the base schools of Azerbaijan State Pedagogical University in order to examine different teaching methods and approaches;
- Write a creative research paper on a topic related to teaching and education.

In order to determine the dynamics of readiness for educational and research activity and to examine the problem comparatively, a survey was conducted among primary school teachers in Baku with different levels of professional experience. A total of 43 primary school teachers participated in the survey. The questions and tasks were designed to evaluate teachers' teaching and research activities and to assess the forms of instruction (lectures, seminars, laboratory classes, debates, graduation projects, course papers, independent work, educational excursions, pedagogical practice, etc.) and teaching methods (teacher explanation, interview, illustration, demonstration, assignments, instructional discussions, business games, independent work, research-oriented tasks, video methods, and others) that contribute to the development of research competence. To determine the level of preparedness of future primary school teachers for instructional and research activities and to assess the formation of their research skills, a questionnaire survey was conducted.

At the initial stage of the experiment, both prospective primary school teachers and practicing primary school teachers were asked to respond to the following questions:

1. In response to the question, "Do you consider the development of research skills in prospective primary school teachers to be an essential component of preparation for creative teaching activity?", 74% of prospective primary school teachers and 82% of practicing teachers stated that research skills constitute a necessary component of successful pedagogical activity.

2. In response to the question, "Which research skills have you acquired during your education?", teachers with different levels of professional experience identified several research skills, including analyzing scientific literature, generalizing and systematising information, conducting surveys, studying and summarising pedagogical experience, observing, formulating hypotheses, and conducting experiments. However, 16% of the teachers participating in the survey admitted that they experienced difficulty answering this question and were unable to clearly identify research skills. Instead, they emphasised the teacher's ability to design the classroom environment. The responses to this question revealed that teachers were not sufficiently informed about pedagogical research skills and their content.

In order to identify the reasons for this, recently published pedagogy textbooks and teaching manuals were analyzed.

Unlike the Pedagogy textbooks published in the 1960s-1990s by authors such as M. A. Muradkhanov, B. A. Ahmadov, N. M. Kazimov, A. Sh. Hashimov, Y. R. Talibov, A. A. Agayev, I. N. Isayev, and A. I. Eminov, the books entitled Pedagogy published in different years by A. Kh. Pashayev and F. A. Rustamov (Pashayev, 2017, p. 462), L. N. Gasimova and R. M. Mahmudova (Gasimova, 2003, p. 536), M. A. Ismikhanov (Ismikhanov, 2011, p. 236), and F. N. Ibrahimov (Ibrahimov, 2010, p. 544) place special emphasis on research ability as an important component of a teacher's pedagogical competencies.

Similarly, psychology textbooks authored by A. A. Alizadeh, M. A. Hamzayev, S. I. Seyidov, R. I. Aliyev, A. U. Mammadov, and N. Z. Chalabiyev emphasize the importance of research ability among the psychological competencies required of teachers. However, none of these educational resources provide a clear list or detailed description of teachers' research skills.

During the research process, students were asked to evaluate the significance of the following research skills, which play an important role in preparing future primary school teachers for creative professional activity. They were requested to assess each skill by placing a "+" sign in the appropriate column according to its importance (5 – very important; 4 – important; 3 – desirable; 2 – not important).

The research skills included:

1. Ability to work with primary sources
2. Ability to obtain and summarise information
3. Ability to critically analyse and evaluate obtained information
4. Ability to systematise and classify phenomena
5. Ability to draw generalisations based on collected materials
6. Ability to interpret data and information
7. Ability to present and summarise material in the form of reports or articles
8. Ability to formulate and solve pedagogical problems
9. Ability to identify and solve problems
10. Ability to understand and justify ways of solving problems
11. Ability to observe, collect information, and analyse it
12. Ability to formulate and test hypotheses
13. Ability to conduct experiments and generalise results
14. Ability to use pedagogical research methods
15. Ability to exercise self-control and self-correction
16. Ability to express opinions regarding research results
17. Ability to study and generalise teachers' professional experience
18. Ability to plan and organise research activities
19. Ability to apply research results in practice
20. Ability to conduct collaborative research
21. Ability to deliver presentations

The analysis of the significance level of research skills that prospective primary school teachers should acquire during their first to fourth years of study demonstrates that this dynamic increases progressively from year to year. Although first-year students do not fully understand the importance of research skills for their future teaching activities, in subsequent years they gradually recognize the necessity for teachers to possess such competencies.

Students in the final year of study develop a broader understanding of the instructional and research activities of primary school teachers and place particular importance on research skills among the teacher's professional competencies, evaluating them highly (İsmixanov & Bəxtiyarov, 2011; Paşayev & Rüstəmov, 2017; Qasımova & Mahmudova, 2003). The analysis led to the conclusion that the views of final-year students majoring in primary education regarding teachers' research skills are very close to the perspectives of practicing primary school teachers and, in some cases, even coincide with them.

Practicing teachers were asked the question: "How do your research skills influence your pedagogical activity?" The responses obtained indicated that research skills have an unequivocally positive impact on the teaching activities of primary school teachers. The answers particularly emphasized that teachers who possess research skills:

1. feel more confident in their professional competence;
2. actively participate in various training programmes and professional development courses;
3. apply teaching methods in a comprehensive and integrated manner during the instructional process;
4. continuously improve their methodological repertoire;
5. effectively plan and implement the teaching process;
6. are able to select and study relevant scientific and pedagogical literature; and
7. engage in continuous self-education.

Final-year students of the primary education programme and practicing teachers analyzed the main characteristics of research skills, the essence of pedagogical research methods, and the relationship between teachers' research skills and other professional competencies such as organizational, communicative, cognitive-scientific, perceptive, and suggestive abilities. The analysis of responses revealed a considerable difference between the knowledge content of prospective primary school teachers (final-year students) and practicing teachers regarding the significance, classification, and interrelation of research skills with other competencies. Teachers with at least 5-10 years of professional experience provided more comprehensive and practice-oriented responses. Only the responses of seven graduates of the master's programme "Methodology and Methods of Teaching in Primary School" and four graduates of the programme "History and Theory of Pedagogy", who were already working as primary school teachers, coincided with those of practicing teachers, which we consider natural. The inclusion of the course "Methods and Methodology of Scientific Research" in master's programmes (30 hours in total: 15 hours of lectures and 15 hours of seminars), as well as the requirement for each master's student in the final year to complete 20 hours of research practice and 20 hours of scientific-pedagogical practice, contributes to the development of research skills alongside other professional competencies.

The study revealed that in higher pedagogical institutions, the formation of scientific research skills among future primary school teachers and their preparation for instructional-research activities is not sufficiently developed. As a result, teachers who begin their professional careers often attempt to fill these gaps during the first five years of their professional practice. All these findings indicate that there are significant shortcomings in preparing future primary school teachers for research activities. Superficial answers given by prospective primary school teachers to questions such as "What is a teacher's research activity?" and "How do you understand the implementation of research skills within the pedagogical process?", their inability to systematically and sequentially list the components of research skills, and their difficulty in providing examples related to the problem confirm this conclusion.

In our view, the deficiencies in the preparation of prospective primary school teachers for scientific research and instructional-research activities can be eliminated through purposeful and systematic self-education. The development of primary school teachers as both professional educators and researchers largely depends on the level of their readiness for self-directed learning.

A total of 68% of prospective primary school teachers understand the importance of continuously improving their research skills. Furthermore, 78% of final-year students participating in the survey (majoring in primary education) claimed that during their higher pedagogical education they had acquired the necessary knowledge and skills to independently study scientific, pedagogical, and methodological literature.

Among the teachers who participated in the survey, 63% reported that they systematically improve their professional competence in order to develop themselves as teacher-researchers. To enhance their professional skills, they employ various forms of self-education, including:

1. studying and analysing scientific, pedagogical-psychological, and methodological literature;

2. participating in training programmes, professional development courses, scientific seminars, and conferences;
3. participating in forums of primary school teachers;
4. applying innovative teaching technologies and active learning methods in the instructional process;
5. conducting independent scientific research and publishing articles about their professional experience in journals such as Curriculum and Preschool and Primary Education.

During the survey, the majority of practicing teachers and prospective primary school teachers stated that at the bachelor's level of higher pedagogical education they had not sufficiently mastered independent work and research skills, and they evaluated this situation as follows.

Table 1.3.2
Results of the Questionnaire Survey on Readiness for Instructional-Research Activities

Participants	Excellent (%)	Good (%)	Satisfactory (%)	Unsatisfactory (%)	No Response (%)
Prospective primary school teachers	11	17	32	38	2
Practicing teachers	5	13	21	57	4

The results of the survey demonstrated that prospective primary school teachers do not have a clear understanding of the goals, objectives, content, and technological aspects of preparation for instructional-research activities. For the majority of respondents, only superficial perceptions of teachers' research skills have been formed. They experience difficulties in explaining the essence of research competence and in applying its various components within the teaching process.

In addition, prospective teachers are insufficiently prepared for independent work aimed at improving their scientific-pedagogical competence and enhancing their research skills. This situation highlights the necessity of introducing substantial changes to the content and technologies of pedagogical disciplines in order to more effectively prepare future primary school teachers for research activity. During the experimental stage of the study, questionnaire surveys, interviews, and assessment tasks conducted in a carefully structured and logically sequenced manner contributed to identifying the theoretical and methodological foundations of the research.

Table 1.3.3
Questionnaire Items, Tests, and Assessment Tasks Related to Readiness for Instructional-Research Activities

Questionnaire questions	Test and assessment tasks
What is the role of research skills in the formation of the teacher-researcher's personality?	Analyze the essence of teaching and upbringing as well as contemporary pedagogical and psychological concepts and theories.
Explain the essence of the learning-through-research approach by examining the history of pedagogical thought in Azerbaijan.	Identify theoretical and empirical research methods in separate columns and explain their essence.
What pedagogical and psychological knowledge should a teacher possess?	Interpret the main directions of democratisation and humanisation of the pedagogical process and the characteristics of a teacher's creative pedagogical activity.
Explain the essence of the relationship between teachers' research skills and other pedagogical competencies.	Characterise the main features of the teacher-researcher's activity.
Describe the stages of development of scientific-pedagogical research.	Explain the components of teachers' research skills.

In the research activity of prospective primary school teachers, their personal qualities play a significant role. The study revealed that there is an intrinsic relationship between the structural components of prospective primary school teachers' readiness for research activity and the methods of pedagogical research.

Table 1.3.4
Relationship Between the Structural Components of Prospective Primary School Teachers' Readiness for Research Activity and Pedagogical Research Methods

Criteria of prospective primary school teachers' readiness for research activity	Pedagogical research methods
Motivational-value component	Observation, interviews, questionnaires, tests, written assignments, assessment tasks, and diagnostics of teachers' motivation
Content component	Study of normative and legal documents; analysis of curricula, syllabi, and educational programmes; textbook analysis; diagnostics of the acquisition of the content of research skills
Practice-oriented component	Tests, modelling, business (role-playing) games, analysis of creative outputs, and diagnostics of readiness for research activity

At the final formative stage of the study, four levels of prospective primary school teachers' research competence were identified: (1) very high, (2) high, (3) medium, and (4) low. In accordance with these levels, a survey was conducted among 206 prospective primary school teachers participating in the experiment (103 in the control group and 103 in the experimental group). The results confirmed the validity of the methodology proposed in this research.

During the surveys, it was observed that although some students and practicing teachers possessed a certain understanding of the nature of research skills, their relationship with other teaching competencies, and their role in teachers' professional activities, the majority provided superficial answers to questions such as "What is the significance of research skills for primary school teachers?" and "What are the criteria of the motivational-value component for teachers?" Respondents were unable to clearly explain the relationship between teachers' research skills and other instructional competencies, particularly the connection between a teacher's creative activity and the level of development of research skills. They also experienced difficulties in identifying the main characteristics and structural components of the teacher-researcher's activity.

The study also revealed significant shortcomings in the development of the information-content component of prospective primary school teachers' readiness for instructional and research activities. Responses to questions such as "What methodological knowledge should primary school teachers possess?", "How do you evaluate the potential of pedagogical-psychological, humanitarian, and elective courses in developing research skills among prospective primary school teachers?", and "Explain the content of pedagogical research skills" were found to be largely superficial. In the contemporary period, there are still deficiencies in preparing future primary school teachers for research activity and in developing their scientific research skills within higher pedagogical institutions. Prospective teachers encounter difficulties in designing and solving pedagogical tasks, characterizing the stages of development of scientific-pedagogical research, developing research projects, formulating hypotheses, conducting experiments, carrying out independent research, and analyzing the results obtained. One of the reasons for this situation is that, compared to other competencies such as organizational, cognitive-scientific, and communicative skills, insufficient attention is paid to the development of research skills during lectures, seminars, practical classes, extracurricular activities, and pedagogical practice.

Conclusion

At the same time, several additional issues should be noted:

- There is no unified system ensuring the development of research skills among prospective primary school teachers. Within the modern education system, resources and institutional support for developing research competencies among both prospective and practicing teachers remain limited. Although the use of interactive teaching methods could significantly contribute to the formation of research skills, their application in higher pedagogical institutions is still not widespread.

Some prospective primary school teachers do not fully recognise the importance of possessing research competencies for a teacher-researcher. The integration of research methods and innovative approaches into the instructional process remains insufficiently developed. As a result, prospective teachers often experience difficulty understanding the role of research in generating and applying new knowledge.

- Initial research skills are not sufficiently cultivated in general education schools, which negatively affects the subsequent development of these competencies in teacher education programmes.
- Despite the rapid introduction of innovative approaches and pedagogical technologies into professional teacher training, the preparation of prospective primary school teachers for scientific research activity often continues to rely on traditional methods that are not sufficiently effective.
- In line with the increasing demands for improving the efficiency of the educational process, many teachers do not actively engage in self-education, do not generalise their teaching experience, and show limited interest in evaluating their own professional activities. Teachers' motivation to develop their research competencies is relatively weak. A lack of awareness of the importance of research or insufficient time allocated to such activities further limits teachers' engagement in research.
- Higher pedagogical institutions often lack the necessary conditions for fully implementing the motivational-value, information-content, and practice-oriented components of readiness for instructional-research activity among prospective primary school teachers. For example, the elimination of course papers, graduation projects, practical training modules, and the absence of national student scientific conferences significantly reduces opportunities for developing research competencies.

In conclusion, the insufficient development of research skills among modern teachers is associated with several factors, including the structure of the education system, limited resources, and teachers' motivation. Addressing these issues requires the provision of greater institutional support and resources aimed at fostering teachers' research competencies.

References

1. Abdullova, L.Sh. (2009). *Formirovanie issledovatel'skoi kompetentnosti studentov kolledzha na osnove sinergeticheskogo podkhoda*. Avtoref. dis. kand. ped. nauk.
2. Andreev, V.I. (1998). *Pedagogika tvorcheskogo samorazvitiya. Innovatsionnyi kurs (Kn. 2)*. Izd-vo KGU.
3. Azərbaycan Respublikası Prezidentinin Sərəncamı. (2013). *Azərbaycan Respublikasında təhsilin inkişafı üzrə Dövlət Strategiyası (24 oktyabr 2013-cü il tarixli sərəncam)*. https://president.az/az/articles/view/9779
4. *Bakalavriat səviyyəsinin (əsas (baza) ali təhsilinin) 050107 – İbtidai sinif müəllimliyi ixtisası üzrə təhsil proqramı*. (2020). Azərbaycan Respublikasının Təhsil Nazirliyi, 20 fevral 2020-ci il tarixli qərar.
5. Girfanova, E.Yu. & Osipov, P.N. (2006). *Stimulirovanie issledovatel'skoi deyatel'nosti studentov*. Shkola.
6. Gubaidullin, A.A. (2011). *Formirovanie issledovatel'skoi kompetentnosti studentov v usloviyakh proektnogo obucheniya*. Avtoref. dis. … kand. ped. nauk.

7. İbrahimov, F. (2010). *Ümumi pedaqogikadan mühazirələr*. Mütərcim.
8. İsmixanov, M. & Bəxtiyarov, R. (2011). *Ali məktəb pedaqogikası*. ADPU.
9. Paşayev, Ə. & Rüstəmov, F. (2017). *Pedaqogika*. Elm və Təhsil.
10. Qasımova, L.M. & Mahmudova, R.M. (2003). *Pedaqogika*. Çaşıoğlu.
11. Talmanova, T.M. (2003). *Formirovanie issledovatel'skoi kompetentsii uchitelya nachal'nykh klassov v sisteme nepreryvnogo obrazovaniya*. Avtoref. dis. … kand. ped. nauk.
12. Verbitskii, A.A. & Bakshaeva, N.A. (2000). *Razvitie motivatsii studentov v kontekstnom obuchenii*. Issledovatel'skii tsentr problem kachestva podgotovki spetsialistov.

Received: 04.12.2025
Approved: 13.03.2026