

UDC 373.3-051

doi: 10.15330/jpnu.10.3.163-172

## PROFESSIONAL DEVELOPMENT OF FUTURE PRIMARY SCHOOL TEACHERS: ENHANCEMENT OF SCIENTIFIC RESEARCH ACTIVITIES

*KATERYNA FOMIN*

**Abstract.** The article outlines the theoretical essence of the “students’ research activity” concept, detailing its content and fundamental methodological principles for application in a higher education institution. Innovative approaches to engaging students in research projects are introduced. The author substantiates the distinctive features and forms of cultivating future primary school teachers’ professional skills through research activities (students’ work as part of national or international grants; scientific societies, workshops, seminars (webinars), leading scientific schools; participation in scientific conferences – online or offline, research competitions, Olympiads, exhibitions, forums; participation in student scientific mobility programs, non-formal education). The importance of involving future professionals in research in the community of a city or region is emphasized, as well as stimulating them with scholarship funds and programs. The findings of the study of the state of this problem in the practice of professional training of students of the Faculty of Pedagogy are presented, including, the outcomes from the survey aimed at identifying the dynamics of the level of interest of future educators in research engagement during their 4 years of study at the university. The emphasis is placed on the importance of individualizing students’ research work, increasing their motivation, intellectual culture, critical thinking, and creativity, as well as actively engaging them in national and international scientific events, and focusing on interdisciplinarity in scientific project work.

**Keywords:** student research activity, professional development, primary school, future teachers, pedagogical skills, innovative research projects.

### 1. INTRODUCTION

Contemporary progress in human civilization, defined as the transition towards a knowledge and technology society, introduces entirely new requirements for the advancement of education at various levels. Today, the humanitarian sphere, in particular education, increasingly determines the success of nations and entire regions in the competition for survival or technological progress. In the XXI century, higher education has become a priority for national and international policy in Europe and the world. New challenges in the field of training are largely related to the quality of this training (Integration in Higher Education, 2011), in particular, the implementation of the requirements of the European Credit Transfer and Accumulation System, the development of new standards for specialties oriented to the domestic, European (world) labor market, digitalization of higher education, etc. The problems of reassessing the methodology of science and the role of university higher education in ensuring the quality of scientific research are also relevant. As L. Witkowski notes, “without examining the real role

they play in a particular society". "The differentiation between content and meaning appears to be a crucial methodological principle," "ascending to the realm of meaning when the mere presentation of content is no longer enough, but realizing the level of significance is an important new frontier to reach" (Witkowski, 2022, p. 436).

In enhancing the efficiency of training future specialists, in particular teachers, it is necessary to strengthen the scientific component in the content of education, the formation and development of their research knowledge, skills, abilities, and competencies for successful professional activity. A school teacher, in addition to the responsibility of teaching, is also a subject of research activity, so he/she should be ready to:

- understanding of current problems of theory and practice of educational activity and the necessity to acquire new experience for research;
- setting research tasks and their implementation;
- development of a hypothesis;
- planning and conducting research;
- performing research actions;
- analysis and evaluation of research results;
- creative application of innovations, and their adaptation to new conditions of the professional environment;
- modeling their creative tasks and projects based on the results of the research.

The solutions to these and other challenges can be achieved through adequate preparation of students for research work in a pedagogical institution. Therefore, the purpose of this article is to: (1) study the theoretical foundations of the problem of organizing research activities of future educators in a higher education institution; (2) to outline the distinct attributes characterizing the development of their professional skills through research work; (3) to explore innovative ways to involve students in research initiatives and present the findings from analyzing the current state of this issue within the professional training of students at the Faculty of Pedagogy.

## **2. RESULTS AND DISCUSSION**

### **2.1. Theoretical methodologies for structuring research activity of future educators**

In pedagogical science, the essence of students' research work is interpreted as a system of methods, tools, and activities for mastering the scientific and innovation cycle, including fundamental and applied research, at different stages of professional training. In pedagogical science, the essence of students' research work is interpreted as a system of methods, tools, and activities aimed at acquiring proficiency in mastering the scientific and innovation cycle, including fundamental and applied research, at various phases of their professional training. The research activity of future specialists in the university environment serves as an effective factor in mastering not only the basics of professional creative work and scientific principles or techniques but also the development of creativity, independence, the ability to professional growth and self-improvement, mastering innovations in existing socio-economic, scientific and technical situations or conditions (Proshkin, 2009, p.114). Moreover, such activities of students involve independent search activities, which are implemented in creative research and are aimed at explaining (identifying) certain pedagogical phenomena, processes, establishing their connections and relations, theoretical and experimental substantiation of the data obtained, identifying patterns using scientific methods of knowledge, etc.

The modern concept of student research work includes the following domains:

- 1) introduction to the elements of research work, development of research skills of prospective educators;
  - 2) actual research carried out under the supervision of the academic staff.
- The main forms of research work of future specialists at the university are:

- diagnostics - collecting and analyzing empirical data that characterize the state of the object under study;
- concept creation - presentation and reasoning of understanding of the problem and ways to solve it;
- experimental and research validation of the hypothesis.

*“The research activity of future specialists facilitates the cooperation of a teacher and a student in the scientific grounding of certain ideas and decisions essential for the development of students’ scientific thinking and the development of their professional competence. [...] it significantly affects the emotional well-being of a human being. [...] It helps to deepen the student’s interest in the cognitive process, develops a sense of satisfaction from achieving the research goal, the joy of creativity” (Uysimbayeva, 2010, p. 245).*

Thus, the teacher-student interaction in the process of performing various types of research activities should be based on the principles of cooperation and co-creation. The proper level of educational and scientific dialogue (Fomin, 2018) serves as an effective tool for professional education, provides creative cooperation in the format of “teacher-student”, and “student-student” (since scientific interaction can be carried out by a group of concerned persons), and helps to increase the level of prospective teachers’ professional competence.

Why is it crucial to involve students in research from the very first day of their university studies?

The tendency towards establishing a research-oriented university is very relevant in today’s scientific educational environment. Firstly, the institution benefits from active research programs improve its image and status among other universities, receives additional funding for research, and addresses the most relevant topics attracting the attention of interested applicants, managers, stakeholders, and the media. In this way, the university strengthens its research platform and creates its “brand” in the national and international market, which has a certain influence on the recruitment of students, keeping the best professors, attracting new investments, and introducing innovations. The involvement of future specialists in research at the university helps to take into account their demands, interests, and cognitive goals, as well as their ideas about the implementation of this research.

*“Students, both undergraduate, and graduate, benefit from studying in an environment rich with research and discovery. Besides what the faculty can bring back to the classroom, there are opportunities to engage with faculty as part of their research teams and even conduct independent research under their supervision, often for credit. There are opportunities to learn about and learn on state-of-the-art equipment, in state-of-the-art laboratories, and from those working on the leading edge in a discipline. There are opportunities to co-author, present at conferences, make important connections, and explore post-graduate pathways” (Rosowsky, 2022).*

The main purpose of research work is to obtain scientific results that have objective novelty, as well as the ability to apply basic research skills and competencies.

The university’s practice defines the main tasks of the scientific research group for future teachers:

- student research work on a specific governmental topic, national or international grants;
- organization of scientific societies, workshops, seminars (webinars), and leading scientific schools;
- Involvement in scientific conferences, including online or offline;
- holding competitions of student research papers at various levels, competitions, exhibitions, etc;
- stimulating scientific activity by participating in scholarship competitions for young scientists in the educational field;
- research work of students in the university research departments, as well as their involvement in research in the city or region community;
- participation in student scientific mobility programs, non-formal education, etc.

Therefore, summarising the theoretical approaches of scientists, we can conclude that students’ research activity is “a special type of intellectual and creative activity that emerges as a result of the functioning of individual mechanisms of search activity and involves independent research aimed at theoretical and experimental study of phenomena and processes, reasoning facts, identifying patterns using scientific methods of knowledge” (Povidaychyk, & Povidaychyk, 2017, p. 218).

## 2.2. Features of professional skills development of future primary school teachers using research work

Research activity serves as an effective method of professional training of qualitatively new specialists in higher education institutions, as it promotes the development of (critical) creative thinking (Ennis, 1991), scientific intuition, intellectual and methodological culture (Rembierz, 2017), individual abilities, university students' research skills, as well as enables the implementation of an innovative approach to the acquisition of knowledge, its practical application to solve problems and scientific issues. (Fomin, 2018).

We define the features of future primary school teachers' research work as the acquisition of a certain professional competence, which is a set of interrelated essential orientations, research knowledge, skills, and practical experience necessary for successful pedagogical activity in the conditions of personality-oriented teaching, students' development and upbringing.

The professional skills of future teachers through research work include:

*command of* (research, psychological and pedagogical, methodological, subject knowledge, mastery of scientific concepts and ideas; a precise description of facts and phenomena using commonly used terminology; knowledge of pedagogical technologies, mastery of theoretical and practical tools, methods, and logic of scientific and pedagogical research);

*skills* (research, intellectual, organizational, projective, educational and intellectual, analytical, structural, communicative, cognitive, and comprehensive);

*research skills* (systematic, goal-oriented, proactive, sense of innovation, consistency, ingenuity, curiosity, observation, objectivity, risk-taking, cognitive independence, research tact; desire and ability to defend one's well-grounded perspective on a problem, intuition);

*intellectual development* ( development of viewpoints, ideas, beliefs, general erudition, scientific outlook; ability, skills, creative imagination, abstract and logical memory);

*moral and willpower qualities* (organization, interest, responsibility, sociability, persistence in achieving the goal, determination, independence, accuracy, conscientiousness, commitment, discipline, etc.);

*professional features* (creative pedagogical thinking, self-improvement, professional psychological attitude, pedagogical tact, reflection, appropriate level of general, methodological, and pedagogical culture);

*research activity* (scientific research capabilities; level of motivation; appreciation of the importance of research; value orientations; creative and searching attitude; highly developed cognitive interests and abilities; research style of thinking; high level of internal desire for constant improvement and acquisition of knowledge; desire for independent knowledge acquisition; enthusiasm for research; career orientation, etc.)

In light of our concern, Ukrainian scholars have outlined the defining attributes of the academic culture of a teacher-researcher, wherein significant emphasis is placed on fostering a "digital creative atmosphere providing for the targeted implementation of tools, technologies and information resources for creative self-expression of the personality by applying digital technologies, integration of information and communication technologies, intelligent systems, human sensitivity and contextual experience of scientific and pedagogical activity" (Semenoh et al, 2017, p. 242).

In the future teacher's professional training, him/her must realize their mission and objectives as a researcher of the educational process, an active innovator in achieving high pedagogical goals, high-quality teaching of students, and personal development (Fomin, Budnyk, Matsuk, et al., 2020). For this reason, the student is expected to be aware of the mechanisms of the global network service organization, useful electronic resources for methodological purposes, as well as innovative tools for online (offline) teaching and professional development. The development of strategic approaches to teacher-researchers' digital competence, considering progressive foreign experience, targeted training of teaching staff of different types of educational institutions to use pedagogical innovations, creation of

relevant digital educational content, adaptation of organizational, content, information and technological support of this process, taking into account innovative teaching tools, etc. remains relevant. The pandemic and war challenges in Ukraine have demonstrated that the use of digital technologies helps not only to intensify the learning process, increase its efficiency, and provide instant feedback but also to provide educational services even in crisis conditions (Budnyk, Kushniruk, Tsybulko, et al., 2022). The use of ICTs makes the teaching and research process more dynamic, personalized, and focused on individual abilities and personal potential.

In this regard, researchers from Vasyl Stefanyk Precarpathian National University (Ukraine) have successfully implemented an EU project. Erasmus+ KA2 "Modernization of pedagogical Higher Education by innovative teaching Instruments – MoPED" (№ 586098-EPP-1-2017-1-UA-EPPKA2-CBHE-JP) (2017-2021). The main aim of the project was to modernize the Ukrainian higher education curricula by introducing modern teaching methods using information and communication technologies; to improve the quality of higher pedagogical education, develop digital and didactic competencies of future teachers in the context of the New Ukrainian School, and thus improve the research component of future teachers' pedagogical skills (Project).

Numerous studies have shown the importance of involving students in research, case studies, or projects as early as school. This is no coincidence since university students often report a lack of experience in conducting experiments or research because they did not experience it in secondary schools. (John & Creighton, 2011). Often, they can consider ordinary laboratory experiments in STEM education as a meaningful experience of scientific laboratory work, as they have not conducted such experiments at the previous stages of their studies (Goodwin, et al., 2021).

In particular, the researchers state that, for example, British undergraduate students show excellent success in research, and this significantly affects their understanding of professional training disciplines. Of course, those students who plan to enter postgraduate studies later are more interested in research. Nevertheless, at the "individual level, most students report increased confidence and appreciation of the realities of the research process, and desire to progress on to postgraduate study following the placement, indicating that schemes may have the potential to cultivate new research confidence and interest if expanded" (John & Creighton, 2011).

Thus, training future specialists for research activities in an educational institution requires a clear emphasis on the individualization of this process, the formation of their motivation to participate in research projects, and studies on the principles of close cooperation with the university professor. It is the responsibility of the instructor to assist students in the who should help the student with the selection (identifying) of the actual research goal, aiding in the mastery of mastery research methods and techniques.

### **2.3. Innovative ways to engage students in research projects**

In the process of research activity, it is crucial to provide future specialists with the opportunity to make their own choices based on professional or personal interests, motivation, experience of participation in projects, etc. Therefore, the goals of the university instructor and the student in the process of research should correspond with the above indicators. To enhance the dynamism and innovation a set of tasks and recommendations dynamic and innovative, a series of tasks or suggestions are proposed. Let's delve into a more comprehensive examination.

#### *A. Quiz creation.*

You can use websites to generate or create quizzes on a specific topic and this will serve as a learning tool for conducting, for example, a test, survey, etc. For this purpose, we suggest questionnaires in Google Forms or a quiz using the Kahoot service.

#### *B. Creating a collage.*

During a mini-study of the process and results of learning, for example, in a primary school, the student practitioner works with students and at the same time uses interesting digital resources for

individual or group discussion and diagnosis. For this purpose, it is worth using an illustration that contains a combination of text and pictures. In addition, they often use a free online collage builder as a creative project to visualize research materials.

*C. Photo scavenger hunt.*

Modern students have no difficulty taking photographs. Therefore, the next pedagogical method that can be used to engage them in interesting research is a photo hunt – a pre-recorded series of objects that need to be photographed. Students can use their phones or work in pairs (groups) to create interesting designs. Such research tasks are often carried out in art galleries, museums, on field trips, or indoors. The objects that have to be found and photographed can only be listed (if there are many of them) or written down in the form of hints (pointers) to follow. The results of this study can then be used, for example, as methodological support for a course or diploma project of a future teacher.

*D. Transforming research into art.*

The intensification of distance learning and online communication has created a setting wherein educators and students can explore broader opportunities for integrating ICT into the educational process. Therefore, for example, instead of a PowerPoint presentation, future teachers are happy to surprise students with research presentations, videos, or show-and-tell shows. At the same time, it may be a simple visual representation, such as a painting, clay sculpture, finger painting, digital drawing, a theatrical fairy tale, or a song adapted to the theme. By presenting their art (decorative and applied, musical, choreographic, etc.), participants share their impressions and experience of learning about and “meeting” these objects or phenomena of the outer world. This is especially important when researchers create so-called “abstract” art that does not directly “teach anything about what they have learned”.

*E. Create a journal.*

For diploma research, for instance, there is often a requirement to collect the creative works of students who have conducted a pedagogical experiment. In this case, we suggest creating a journal, also an electronic one. For this purpose, you can use various digital resources online or offline. Each participant (respondent) is free to create their original page, which can be easily combined into an e-journal using appropriate online tools.

*F. Recording the interview.*

Often, in the course of research, it is necessary to share and record topics for consideration. Therefore, we consider interviews (with colleagues, parents, students of other educational institutions, authority or community representatives, etc.) to be an innovative way to do this. We use video or a mobile phone microphone. At the same time, it is important to share your research with stakeholders in the professional field, so (if these are students, with their parent's permission) you should turn a series of thematic interviews into a podcast on Anchor.fm or a playlist on YouTube for further viewing and continuing research.

*G. The use of augmented or virtual reality.*

These technologies (if available) are essential innovations in project activities that are to be planned both individually and in groups. After all, virtual reality helps students not only to perceive complex information better and acquire new skills as well as to process and present it interactively; to demonstrate and apply theoretical material in practice. In particular, we propose future teachers study visual, audial, and virtual approaches to teaching students at school in their research. Because only a small proportion of students perceive the material effectively by reading or listening to lectures (i.e. by listening). The majority of students, especially primary school students, perceive visual information better. Therefore, virtual technologies help to demonstrate many complex things – processes, phenomena, formulas, etc. If you add the effect of physical presence, this format of innovative teaching will become a preferred option for students.

Such technologies include Story Spheres, a website that integrates virtual reality and digital tools, while users can add their materials – photos, images from Google Maps, text stories, music, dialogues, etc. It is recommended to use such learning and research tasks as reports (presentations) about certain

historical events, and geographical data of the area, where the student practitioner acts as a presenter, conducting their report from the scene. In addition, Panoform, a device that allows you to convert 2D images into 3D models, is recommended for this purpose. It makes it much easier to visualize and grasp complex STEAM topics.

#### 2.4. Results of an empirical study on future teachers' interest in research work

A review of the scientific literature (Cartrette & Melroe-Lehrman, 2012) suggests that students often “bring naïve scientific concepts to learning situations” that do not correspond to common scientific explanations. At the same time, there are numerous preconceptions (both on the part of educators and future professionals) about the potential, tools, and quality of these studies. Specifically, students’ preconceptions may relate to their lack of confidence in addressing the research topic or methodology independently, so they mostly believe that “authentic research is a detail-oriented activity that can rarely be completed alone” (Cartrette & Melroe-Lehrman, 2012).

At the same time, it is worth emphasizing that the most important factor in students’ research activities is their enthusiasm and motivation, in particular, for professional (pedagogical) activities. In modern scientific studies, the importance of teachers’ pedagogical knowledge and motivation on student learning achievements are emphasized. This is primarily about creating the appropriate learning environment is designed. The authors singled out that “two instructional features are highlighted: Cognitive activation as the instructional feature impacting students’ achievement, and enthusiastic teaching behavior impacting students’ interest” (Keller, Neumann & Fischer, 2017, p. 588).

*“The personal orientation, the intensity, and the stability of its motives determine the success of the pedagogical activity, the desire for self-improvement and professional development. At the same time, the success of any activity is determined not so much by human abilities, but by purposefulness and perseverance in reaching the goal”* (Budnyk, 2018).

The problem of motivation is considered by the German scientists as a Mediator of Social Disparities in Academic Achievement, in particular, they research the impact of socioeconomic factors on the educational achievements of the individual (Steinmayr, Dinger, Spinath, 2012). Therefore, students’ interest and motivation serve as an important pedagogical condition for the efficiency of their research work in particular and professional competence in general.

Based on an individual and group survey of students of the Faculty of Pedagogy of Vasyl Stefanyk Precarpathian National University (Ukraine), we have managed to identify several specific features characteristic of this category of respondents in the context of the issues we have defined. The study covered 270 students during their undergraduate years. (Tab. 1).

Tab. 1

*Results of a survey to identify students’ engagement in research*

Year	Total number of respondents, persons	Yes	No	Difficult to respond
		Абс. / %	Абс. / %	Абс. / %
I	44	19 / 43.2%	18 / 40.9%	7 / 15.9%
II	48	17 / 35.4%	20 / 41.7%	11 / 22.9%
III	91	51 / 56.0%	23 / 25.3%	17 / 18.6%
IV	87	66 (75.9%)	10 (11.5%)	11 (12.6%)
Total:	270	153 (56.7%)	71 (26.3%)	46 (17.03%)

Source: The survey was conducted by the author of the article

The interest of students – future primary school teachers - is increasing: while there were 19 students (43.2%) in the 1st year of study who were active in participating in the research project, in the 4th year there were 66 students (75.9%). In general, the number of interested respondents who were willing to engage in research was 56.7%, but almost a quarter of young people (26.3%) gave a negative answer, which we consider to be natural. These survey results are also visualized in Fig. 1.

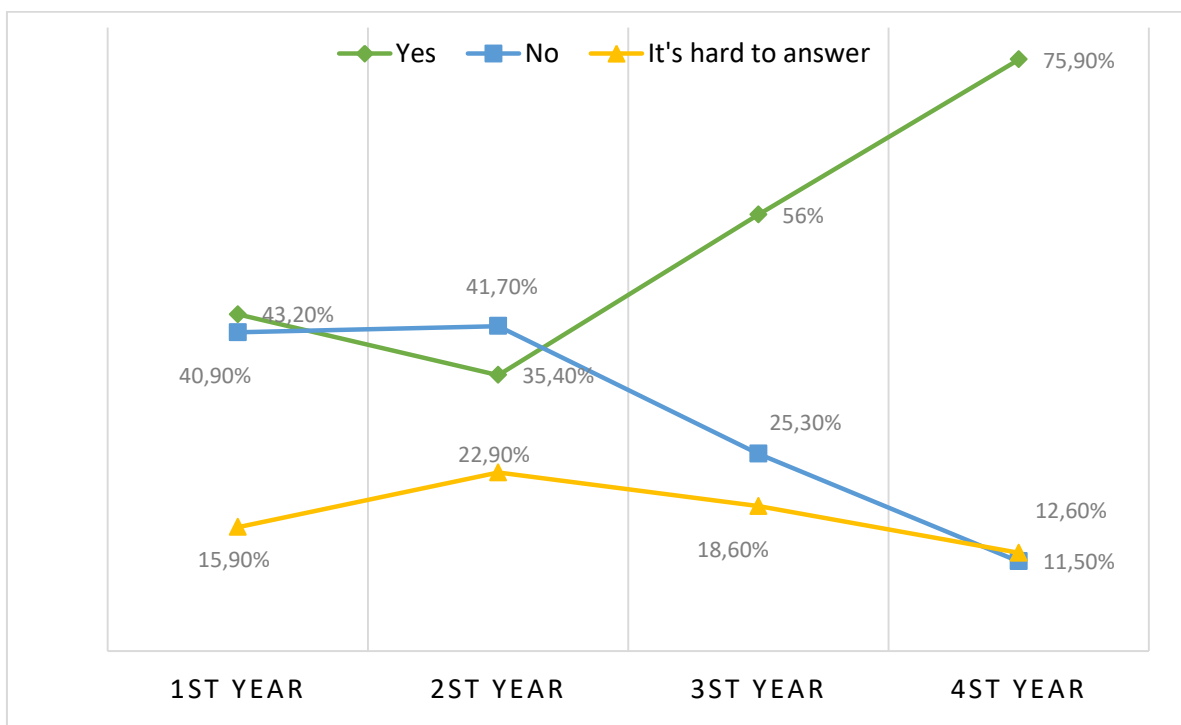


Fig. 1. Dynamics of future primary school teachers' interest in research work at the Ukrainian University  
Source: The survey was conducted by the author of the article

Our monitoring demonstrated that bachelor's students majoring in Primary Education systematically engaged in creative work during their studies at Precarpathian National University, and participated in conferences, competitions, and Olympiads; in most cases, proved to be active and creative in these activities. It has been identified that a significant number of students need to master research skills. That is why it is important to draw attention to this during training sessions in the form of seminars, workshops, debates, business games, workshops, conferences, etc., through which students develop the ability to think critically, defend their opinions, a sense of responsibility and satisfaction with the results of scientific activity. In addition, it is important to involve them in writing scientific articles, presenting research results in the form of short videos, etc.

## 5. CONCLUSIONS

*Student research activity* is defined as one of the activities of a prospective educator aimed at cognition and transformation of pedagogical reality based on the advances in pedagogical science and educational practice, application of scientific methods and techniques; resulting in acquiring new pedagogical experience (knowledge), as well as developing the researcher's methodological awareness. The scientific research work of a future primary school teacher involves active participation in scientific research. The goal of the research is to gain their personal (author's) insights and results of a theoretical or practical nature in the field of teaching a particular discipline or within the chosen scientific topic.

According to the principle of cultural relevance, and its dialectical combination with multiculturalism, it is important to emphasize interdisciplinarity, in particular in the study of



contemporary humanities. In this sense, students' research work is possible at the intersection of pedagogy, philosophy, sociology, cultural studies, psychology, etc. (Witkowski, 2007).

Further scientific research is required in the areas of educational and organizational aspects of effective management of students' research activities, application of information and communication technologies in experimental pedagogical research, intensification of student participation in scientific seminars at the national and international level, project activities, etc.

## REFERENCES

- [1] Budnyk, O. (2018). Motivation of Students to the Professional Pedagogical Activities. *Scientific Bulletin of Chem. Section of Pedagogy*, 1, 55-65. <http://surl.li/lvebl>
- [2] Budnyk, O., Kushniruk, S., Tsybulko, L., Shevchenko, A., Fomin, K. & Konovalchuk, I. (2022). Education innovations: new wartime experience of Ukrainian universities. *Journal for Educators, Teachers, and Trainers JETT*, 13(5), 464-471. ISSN: 1989-9572. <https://jett.labosfor.com/index.php/jett/article/view/1043/698>
- [3] Cartrette, D. P., & Melroe-Lehrman, B. M. (2012). Describing Changes in Undergraduate Students' Preconceptions of Research Activities. *Res Sci Educ.*, 42, 1073–1100. <https://doi.org/10.1007/s11165-011-9235-4>
- [4] Ennis, R. H. (1991). Critical Thinking: A Streamlined Conception. *Teaching Philosophy*, 14(1), 5-24. <http://doi.org/10.5840/teachphil19911412>
- [5] Goodwin, E., Anokhin, V., Gray, M., Zajic, D., Podrabsky, J., & Shortlidge, E. (2021). Is this science? Students' experiences of failure make a research-based course feel authentic. *CBE-Life Sciences Education*, 20(1), 1–15. <https://doi.org/10.1187/cbe.20-07-0149>
- [6] Fomin, K. (2018). Research of the Problem of Dialogue Education Implementation in the Future Primary School Teachers' Training Process: Philosophical and Anthropological Approach. *Scientific Bulletin of Chem. Section of Pedagogy*, 1, 21-34.
- [7] Fomin K., Budnyk O., Matsuk L., Mykhalchuk O., Kuzenko O., Sirenko A., & Zakharasevych N. (2020). Dynamics of Future Teachers' Cognitive Readiness Development to Organize Students' Dialogic Learning. *Revista Inclusiones*, 7 (Esp. Octubre/Diciembre/Junio), 276-288.
- [8] Integration into the European educational space: achievements, challenges, and prospects. (2011). Monograph, edited by F.G. Vashchuk. Uzhhorod: ZakSU. (in Ukrainian)
- [9] John, J., & Creighton, J. (2011). Researcher development: the impact of undergraduate research opportunity programs on students in the UK. *Studies in Higher Education*, 36(7), 781–797. <https://doi.org/10.1080/03075071003777708>
- [10] Keller, M. M, Neumann, K., Fischer, H. E. (2017). The impact of physics teachers' pedagogical content knowledge and motivation on students' achievement and interest. *Journal of Research in Science Teaching. Published by Wiley Periodicals, Inc.*, 54(5), 586–614. <https://doi.org/10.1002/tea.21378>
- [11] MoPED project: Results. Retrieved 12/06/2023, from <https://projects.pnu.edu.ua/en/moped-results/>
- [12] Povidaychyk, O, Povidaychyk, M. (2017). Basic approaches to student research work. *Scientific Bulletin of Uzhhorod University. Series: Pedagogy. Social work*, 1(40), 216-218. (in Ukrainian)
- [13] Proshkin, V. (2009). The main approaches to defining the concept of "students' research work". *Scientific treasury of education in Donetsk region*, 2(5), 114-117. (in Ukrainian)
- [14] Fun and Creative Ways for Students to Do Research Projects. *EmergingEdTech* (2018). <http://surl.li/lveec>
- [15] Reiss, M.J., Sheldrake, R. & Lodge, W. (2023). Investigative Research Projects for Students in Science: The State of the Field and a Research Agenda. *Can. J. Sci. Math. Techn. Educ.* 23, 80–95. <https://doi.org/10.1007/s42330-023-00263-4>
- [16] Rembierz, M. (2017). Intellectual culture, methodological doubts, and meta-pedagogical reflection in developing the theory and practice of intercultural education. *Edukacja Międzykulturowa*, 7, 37-67. <https://doi.org/10.15804/em.2017.02.02> (in Polish)
- [17] Rosowsky, D. (2022). The Role Of Research At Universities: Why It Matters. *Forbes*. <https://www.forbes.com/sites/forbesunder30team/2023/08/09/30-under-30-local-2023-austin/?sh=16eea7b29920>
- [18] Semenog, O., Semenikhina, O., Bezuglyi, D. (2017). Development of the academic culture of a teacher-researcher in a digital creative environment. *IT and teaching tools*, 62(6), 240-251. (in Ukrainian)
- [19] Steinmayr, R., Dinger, F. C., & Spinath, B. (2012). Motivation as a Mediator of Social Disparities in Academic Achievement. *European Journal of Personality*, 26(3), 335-349. <https://doi.org/10.1002/per.842>

- [20] Uysimbayeva, N. (2010). Future specialists' research activity. *Scientific notes: pedagogical sciences*, 88, 243-246. <https://core.ac.uk/download/pdf/83099961.pdf> (in Ukrainian)
- [21] Zinchenko, V. (2001). Student and research work. *Native school*, 2, 37–38. (in Ukrainian)
- [22] Witkowski, L. (2007). *Między pedagogiką, filozofią i kulturą. Studia, eseje, szkice* [Between Pedagogy, Philosophy and Culture. Studies, essays, sketches]. Warszawa: Wydawnictwo Instytutu Badań Edukacyjnych. (in Polish)
- [23] Witkowski, L. (2022). *Uroszczenia i transaktualność w humanistyce. Florian Znaniecki: dziedzictwo idei i jego pęknięcia*. [Conjugation and Transactuality in the Humanities. Florian Znaniecki: the legacy of ideas and its fractures]. Kraków: Oficyna Wydawnicza "Impuls". (in Polish)

**Kateryna Fomin**, Doctor of Philosophy (Ph. D), Associate Professor of the Department of Primary Education, Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine;

**ORCID ID:** 0000-0001-6005-7357

**Address:** Vasyl Stefanyk Precarpathian National University, 57, Shevchenko Str., Ivano-Frankivsk, 76018, Ukraine.

**E-mail:** kateryna.fomin@pnu.edu.ua

**Received:** July 13, 2023; **revised:** August 12, 2023; **accepted:** September 28, 2023; **published:** September 30, 2023.

---

Фомін Катерина. Професійний розвиток майбутніх учителів початкової школи: активізація наукової дослідницької діяльності. *Журнал Прикарпатського університету імені Василя Стефаника*, 10 (3) (2023), 163-172.

У статті визначено теоретичну сутність поняття «науково-дослідницька діяльність студентів», її змістове наповнення та основні методичні засади реалізації в умовах закладу вищої освіти. Представлено інноваційні способи залучення студентів до виконання дослідницьких проєктів. Автором обґрунтовано специфічні особливості та форми формування у майбутніх учителів початкової школи професійної майстерності засобами науково-дослідницької діяльності (робота студентів у рамках національних чи міжнародних грантів; наукових гуртків, воркшопів, семінарів (вебінарів), провідних наукових шкіл; участь у наукових конференціях – у форматах онлайн чи офлайн, конкурсах наукових робіт, олімпіадах, виставках, форумах; участь у заходах студентської наукової мобільності, неформальній освіті). Вказано на необхідності залучення майбутніх фахівців до наукових досліджень у громаді міста чи регіону; а також стимулювання стипендіальними науковими фондами і програмами. Презентовано результати вивчення стану цієї проблеми у практиці професійної підготовки студентів педагогічного факультету, зокрема результати опитування для виявлення динаміки рівня зацікавленості майбутніми вчителями науково-дослідницькою роботою у період 4-х років навчання в університеті. Акцентовано на необхідності індивідуалізації науково-дослідницької роботи студентів, підвищення рівня їх мотивації, інтелектуальної культури, критичного мислення й креативності, а також активного залучення до участі в наукових заходах національного та міжнародного рівня, орієнтації на інтердисциплінарності в науковій проєктній роботі.

**Ключові слова:** науково-дослідницька діяльність студентів, професійний розвиток, початкова школа, майбутні вчителі, педагогічна майстерність, інноваційні наукові проєкти.