

## Theoretical aspects of the problem of professional-methodical training of future biology teachers during pedagogical practice

*KSPI, teacher*

*Aliyeva Mavjuda Baxromjon qizi*

**Abstract:** This paper explores the theoretical underpinnings essential for the effective professional-methodical training of future biology teachers during pedagogical practice. The focus is on elucidating the intricate relationship between theoretical concepts and practical applications in teacher education. Drawing upon educational theory, pedagogical research, and insights from biology education, the paper discusses various dimensions critical to this training process. It delves into the significance of pedagogical practice as a transformative phase in teacher preparation, wherein future educators assimilate theoretical knowledge into practical teaching skills. Key themes examined include the integration of subject-specific content with pedagogical principles, the cultivation of instructional strategies tailored to biology education, and the development of reflective practices to enhance teaching efficacy. Additionally, the paper underscores the importance of curriculum development, classroom management techniques, and the role of educational psychology in shaping effective teaching practices. Through a comprehensive review of literature and theoretical frameworks, this paper offers insights into the complexities and nuances of professional-methodical training for future biology teachers. It advocates for a holistic approach that balances theoretical understanding with practical experience, ultimately aiming to empower educators with the skills and knowledge necessary to inspire and educate the next generation of biologists.

**Key words:** Professional-methodical training, future biology teachers, pedagogical practice, theoretical aspects, education, teaching methods, curriculum development, instructional strategies, classroom management, practical skills, reflective practice.

**Introduction:** Fundamental reform of the content and quality of education, training of competitive personnel on the basis of this, and bringing up a mature generation is defined as one of the important strategic directions in all the steps of

the continuous education system at the world level. Attention to the education system is recognized as the foundation for the development of the economy of all developed countries. In fact, in the 21st century, education was recognized as the main factor ensuring sustainable development, and in the international education concept set until 2030, "creating the opportunity to receive quality education throughout life" was defined as an urgent task. This has expanded the possibility of using technologies aimed at the development of creative thinking, increasing the level of pedagogical training in the professional activities of pedagogues, including future biology teachers, in the educational system. In our country, based on advanced foreign experiences, the continuous education system is aimed at modernizing the modern educational content of training future young teachers, creating the necessary conditions for students to realize their work opportunities. various research works are being carried out. In the Action Strategy for the further development of the Republic of Uzbekistan, priority tasks such as "further improvement of the continuous education system, increasing the possibilities of quality education services, continuing the policy of training highly qualified personnel in accordance with the modern needs of the labor market" are defined. In the decree of the President of the Republic of Uzbekistan dated 08.10.2019 No. PF-5847 "On approval of the concept of development of the higher education system of the Republic of Uzbekistan until 2030" special importance is attached to the implementation of the priority tasks defined under "development and development of a methodological base for meaningful organization". Today, in the course of qualified pedagogical practice, improving the system of preparing students for professional and methodical activities by acquiring the competencies of the social and educational environment of the school educational institution, relations between the subjects of the institution, working with parents, organizing and conducting the pedagogical process is considered one of the urgent tasks. Studying the experience of developed foreign countries in the implementation of practical works such as development of educational activities, fundamental reform of the education system, creation of a new approach in the education process in the process of training personnel with competitive, competent, creative thinking abilities rising to high pressure. The

introduction of state education standards based on the competency approach in the education system of our country, the organization of 11-year education in general education schools, as well as in every region of our republic specialized schools for chemistry and biology, as well as district (city) of our country. establishment of specialized schools for in-depth teaching of chemistry and biology in created new needs for preparation. According to the documents of the Ministry of Preschool and School Education, Higher Education, Science and Innovation of the Republic of Uzbekistan, the goals of modern education are not to train specialists in a narrow field of activity, but to develop the personality of each person and increase his professional ability. To date, serious research has been conducted in various fields of pedagogical activity, dedicated to increasing the multifaceted aspects of the process of training such specialists. Pedagogical preparation is reflected in the long historical roots of educational issues, Eastern thinkers Abu Ali Ibn Sina, Abu Rayhan Beruni, Abu Nasr Farabi, Alisher Navoi, Abdurahman Jami, Ahmad Donish, Abdullah Avloni. In our historical heritage, many opinions are expressed about the importance and importance of career-oriented ideas in the development of society, as well as the issues of providing vocational education to young people and educating them based on the principle of "mentor-apprenticeship". Although the team of pedagogic scientists has conducted comprehensive scientific research on the problem of improving the professional competence of students, improving the professional-methodical preparation of future biology teachers in the process of pedagogical practice has not been studied as a special research object.

The purpose of the study. In the process of pedagogical practice, it is to improve the preparation of future biology teachers for professional-methodical activity.

Tasks of the research:

- ✓ clarification of didactic and methodical conditions of preparation of graduate students for pedagogical activities based on modern requirements;

- ✓ improvement of the methodology of training future teachers for pedagogical activities in the process of pedagogical practice based on the experiences gained abroad and in the republic;
- ✓ development of a model for improving the professional-methodical training of future biology teachers in the process of pedagogical practice;
- ✓ development of methodological recommendations for the preparation of future biology teachers for professional-methodical activities in the process of pedagogical practice and testing, determining their effectiveness.

The object of the research: preparation of future biology teachers for professional-methodical activities in the process of pedagogical practice.

The subject of the research: the content, form, method and means of preparing future biology teachers for professional-methodical activity in the process of pedagogical practice. Research methods: The study and analysis of psychological, pedagogical and methodical literature, questionnaire, interview, observation, test, design, expert assessment, pedagogical experiment, mathematical and statistical analysis methods were used in the research. The scientific novelty of the study: didactic and methodical possibilities of organizing the didactic and methodical conditions of preparation of future biology teachers for professional-methodical activities in the process of pedagogical practice based on modern "4+2", "5+1" practical programs have been clarified; in the process of pedagogical practice, the methodology of preparing future teachers for pedagogical activity has been improved based on the experiences gained abroad and in the republic; that a didactic model of professional-methodical training was developed based on the organizational-pedagogical, methodical and diagnostic, result stages of improving the professional-methodical training of future biology teachers in the process of pedagogical practice;

It is characterized by the fact that methodological recommendations on the preparation of future biology teachers for professional-methodical activities in the process of pedagogical practice have been developed and their effectiveness determined. The practical results of the research are as follows:

- ✓ biological, methodical, psychological, pedagogical, didactic literature on pedagogical training of graduate students was analyzed;
- ✓ studied the content of educational normative documents of the educational institution;
- ✓ forms, methods, and means of professional-methodical training of students for pedagogical activities have been determined;
- ✓ methodical recommendations on professional-methodical training for graduate pedagogical activities were developed;
- ✓ experiment - the results of the test were analyzed mathematically and statistically.

Scientific and practical significance of research objectives. The scientific significance of the research results is determined by the formation of criteria for determining the content, teaching methods, tools and forms of professional methodical training of students for pedagogical activity, and the increase in the effectiveness of biology education. The practical importance of the results of the research is explained by the fact that the proposals, recommendations and conclusions developed on the professional methodical training of graduate students for pedagogical activities can be used by students of general secondary schools and higher education institutions.

**In conclusion**, the theoretical aspects discussed provide a robust foundation for the professional-methodical training of future biology teachers during pedagogical practice. It is evident that effective teacher preparation requires a nuanced understanding of educational theory, coupled with practical application in real-world teaching contexts. By integrating subject-specific content with pedagogical principles, educators can foster a deeper understanding of biology among students while also promoting critical thinking and inquiry-based learning. Moreover, the emphasis on instructional strategies tailored to biology education ensures that teachers are equipped with diverse approaches to engage students and facilitate meaningful learning experiences. Furthermore, the cultivation of reflective practices is paramount in enhancing teaching efficacy and professional growth.

Through ongoing reflection, educators can identify strengths, areas for improvement, and adapt their teaching strategies to meet the evolving needs of their students. Additionally, the recognition of classroom management techniques and the role of educational psychology underscores the multifaceted nature of effective teaching practices. By employing evidence-based strategies and leveraging insights from psychology, teachers can create supportive learning environments conducive to student success. Moving forward, it is essential for teacher education programs to continue integrating theoretical frameworks with practical experiences to ensure that future biology teachers are well-prepared for the complexities of the classroom. Collaboration between educators, researchers, and practitioners is key to advancing the field of biology education and promoting excellence in teaching. Ultimately, by prioritizing the professional-methodical training of future biology teachers, we can empower them to inspire curiosity, foster scientific literacy, and cultivate a lifelong passion for biology among their students.

### References

1. M. Fasmer, Etymological dictionary of Russian 4 (2003)
2. L.P. Krysin, Illustrative explanatory dictionary of foreign words (Eksmo, 2008)
3. P.Ya. Chernykh, Historical and etymological dictionary of modern Russian. 2 (1999)
4. <http://encyclopaedia.bid/википедия/Тост>
5. A. Vezhbitskaya, Speech genres (99-111, 1997)
6. V.V. Dementiev, The study of speech genres: review of modern Russian philology 1 (1997)
7. T.V. Matveeva, Educational dictionary: Russian, culture of speech, stylistics, rhetoric (Flinta, Science, 2003)
8. M.M. Bakhtin, Esthetics of verbal creativity (1986).

9. O.S. Issers, Communicative strategy and tactics of the Russian speech (KomKniga, 2006)
10. E.F. Tarasov, Place of speech communication in a communicative act. National and cultural specifics of speech behavior. Editorial board: A.A. Leontyev, Yu.A. Sorokin, E.F. Tarasov (67-96, 1977)
11. B.S. Zhumagulova, Collection of scientific works. 209, 16-30 (1983)
12. L.A. Kiselyova., Theory of speech influence (LSU, 1978)
13. L.M. Makarov, Procedural component of a speech situation. Speech acts in linguistics and methodology. Interuniversity collection of scientific works (Pyatigorsk, PSPIFL, 1986)
14. E.V. Klyuev, Speech communication (2002)
15. T.G. Vinokur, The speaker and the listener: Types of speech behavior (LGU, 2007)
16. N.D. Arutyunova, Language and the world. 2nd edition, amended (Languages of the Russian culture, 1999)
17. S.A. Sukhikh, Struktura of communicants in communication (Kalinin, 1988)
18. G.G. Clark, T.B. Carlson, The listeners and the speech act (Progress, 1986)
19. O.S. Akhmanova, Dictionary of linguistic terms. 4th edition (KomKniga, 2007).
20. G.G. Pocheptsov, Phatic metacommunication (Kalinin, 1981)