

## FORMATION OF PEDAGOGICAL SKILLS IN FUTURE BIOLOGY TEACHERS ON THE BASIS OF AN INTEGRATIVE APPROACH

**ISABAYEVA MASHXURA MUKHTADINOVNA**

Associate Professor of the Department of Pedagogy, PhD, Qo'qon State Pedagogical Institute, Uzbekistan.

**ERGASHEVA NAZOKAT ALISHEROVNA**

Teacher of the Department of Biology, Qo'qon State Pedagogical Institute Uzbekistan.

Email: 1ergashevanazokatxon@gmail.com

### Annotation

The article reveals complementary levels of formation of pedagogical skills to future biology teachers. The introduction of pedagogical skills of future biology teachers in the educational process on the principle of individualization and democratization of the process of structuring pedagogical skills, using the peculiarities of the integration of pedagogical knowledge in biology education, the content of innovative technologies, types of professional activities that allow improving the content, methods, tools and forms of preparing future biology teachers for pedagogical.

**Keywords:** didactic principles of teaching biology, vitagen, constructive, didactic obstacles, teaching methods, techniques, professional pedagogical activities, self-development of teachers.

### INTRODUCTION

In the framework of ongoing reforms in the Republic of Uzbekistan, special attention is paid to the training of intelligent and competent personnel to meet the demands of the market. This includes the implementation of complex measures aimed at introducing modern trends, developing state educational standards and improving curricula, as well as creating opportunities for the integration of foreign experience and innovative approaches in the training of future specialists. The Presidential Decree "On Measures to Further Develop Education, Science, and Technology in Uzbekistan's New Development Era" and the Resolution "On Additional Measures to Further Improve the Education System" set clear goals for the comprehensive improvement of the education system. The importance of the moral and ethical qualities of teachers, their professional responsibility in the training of highly qualified specialists, is emphasized. In particular, in the context of integration, the methodological aspects of preparing biology teachers for professional-pedagogical activities are being studied, which contributes to the relevance of our scientific research."

In the process of teaching, the concept of activity is based on the opportunities of integral-module teaching, which is used to prepare teachers for pedagogical activities, by B.I. Zagvyazinskiy, N.V. Kuzmina, M.V. Klarin, L.S. Podimova, M.N. Skatkin, and others who rely on the possibilities of integral-module teaching in shaping the skills and competencies of students. Many of our pedagogical scholars, such as R.X. Djuraev, N.A. Muslimov, Q.T. Olimov, F.M. Zakirova, M.H. Lutfillaev, N.I. Taylaqov, have contributed to the development of teacher training in integrative education, pedagogical sciences and technologies, their scientific

foundations, and research conducted by scholars such as A. Azizkhodjaeva, R. Akhiddinov, J. Tolipova, and others have been investigated to a certain degree. The issues of developing a teacher with a subject-related approach to the educational process have been studied in the works of B. Abdullaeva, Z. E. Azimova, G. R. Alimatova, S. Alihonov, Kh. B. Norbo'taev, A.A. Salomov, A.CH. Choriev, A. V. Usov, M.O. Ochilov, Kh.I. Ibragimov, U. N. Nishonaliev, D. Kh. Nasriddinova, and many other researchers. Modern educational reforms aimed at integration expand and complicate the tasks facing the education system in the future. They require a qualitatively different level of training, which will provide a teacher with the opportunity to act independently under new conditions, implement subject-related integration, and use its capabilities to the fullest extent. The historical-pedagogical analysis of the development of interdisciplinary connections in education provided an opportunity to identify the main directions of research, which include: socio-pedagogical, this direction emphasizes the importance of interdisciplinary connections in developing the student's personality in all aspects, philosophical, this direction determines the organization of content and the formation of the teaching process in the educational system, and emphasizes the role of interdisciplinary connections in ensuring its coherence, and synthetic, this direction highlights the importance of interdisciplinary connections in synthesizing information from various disciplines to ensure its relevance. The totality of the functions of interdisciplinary connections is realized in the professional training process of teachers when they implement them in all aspects of their work [1]. Studying the methodological issues of interdisciplinary connections leads us to briefly touch upon the didactic aspects of interdisciplinary connections, as they are related to interdisciplinary connections in terms of a methodological basis and are considered in the didactic category.

Defining the nature of didactic categories of interdisciplinary connections and identifying their types involve various complex processes. The scientific positions that reveal the essence of interdisciplinary connections and classify their types into groups are based on the pedagogical tasks that research solves in the context of interdisciplinary connections, the aspects of interdisciplinary connection issues that are being studied, and the degree of their resolution. These factors determine the methods used to identify and classify interdisciplinary connections [2]. The psychological basis of conditioned reflexes in academician I.P. Pavlov's dynamic stereotype and second signal system were introduced. He considered the physiological mechanism of the formation of the complex timing system in the brain. Pavlov linked them to all types of connections that represent the objective manifestation of subjective excitations based on Pavlov's theory of psychological inhibition. He stated that 'All teaching is a matter of timing of connections, and this is thought, reflection, knowledge.' [3].

The laws of the conditioned reflex activity discovered by I.P. Pavlov explain the conditions for the formation and disruption of associative connections (including temporal connections) in the higher nervous system. A.T. Gofurov and S.S. Fayzullayev investigate the problems of interdisciplinary connections in the teaching of biology. Factors that contribute to active mental activity in students include the combination of subjects, the combination of teacher and student actions, and the selection of composition and methods based on the age of the children. [4].

The integrative approach is used to prepare biology teachers and ensure the integration of specialized knowledge, practical skills, personal qualities, and virtues. The integrative approach is used to integrate related, relevant, logical subjects that complement each other and deepen each other, and to provide complete knowledge of logical, personal, and practical skills. Through interdisciplinary connections, biology teachers solve educational tasks in cooperation with other subject teachers. To achieve this, they need to study theoretical issues, find new methods of using interdisciplinary connections in teaching biology, and use examples effectively. Teaching in higher education through an integrated process is the basis for enhancing the intellectual and theoretical thinking of teachers in all aspects. The decree of the President of the Republic of Uzbekistan Sh. Mirziyoyev, dated November 6, 2020, No. PF-6108, sets tasks for systematic work to improve the quality and effectiveness of the education system in the country, to shape modern knowledge and skills in preschool, school and university students, to ensure close cooperation and integration between the education system and the scientific community, and to ensure the continuity and sustainability of education [5].

In carrying out these tasks, equipping with modern information and communication technology tools, expanding access for students, teachers and young researchers of higher education institutions to world educational resources, electronic catalogs and databases of modern scientific literature, was identified as a goal to further improve and develop the Higher Education System and enhance the quality and effectiveness of education through the development of the methodology base of integrative education. The use of integration in the learning process is aimed at developing students' scientific thinking, forming a complex system of logical, analytical and critical thinking skills through interdisciplinary connections. Integration (from Latin "integratio" - completion, filling, from the word "integer" - whole) means a concept that describes the interdependence of parts and functions of a whole system or organism, as well as the process that leads to such a state, and in the learning process, it is accompanied by the convergence of subjects and the process of interrelation." [6]. Ensuring the substantive content of subjects, requiring integrative approach to enable teachers to move freely under new conditions, and demanding a high degree of preparedness that allows for the implementation of subject integrations and utilization of its opportunities.

In pedagogy at higher education institutions, the formation of pedagogical perspectives in biology teaching involves the implementation of courses such as "Methodology of Teaching Biology" and "Pedagogical Technology and Planning in Teaching Biology". In teaching these subjects, it is necessary to apply an integral approach to the training of biology teachers, which encompasses pedagogical theory and history, pedagogical skills, cultural literacy, and general psychology. In order to develop pedagogical skills in students and promote integrative approaches in our scientific research, we have identified the following tasks: to identify and analyze situations that create an integrative environment in the content of the subject 'Methods of Teaching Biology';

To determine the content of professional pedagogical skills that are necessary for the development of students and to identify opportunities for their use in integrative situations;

To effectively use the content, methods and tools of pedagogical skills in teaching Biology

teachers through integrative approaches;

To improve students' communicative skills and to develop their scientific thinking in integrative classes;

To develop and apply didactic materials based on professional skills in subjects that focus on vocational training.

These specified tasks are aimed at developing pedagogical skills in students as part of the development of our scientific research in biology. The preparation of students for pedagogical activity consists of two components - mastering theoretical knowledge and practical pedagogical activity. This is a strategic plan that specifies unique tactics for each stage, i.e. after mastering theoretical knowledge, practical activity follows. Modernization of higher education institutions and their educational processes, improving the system of training pedagogical specialists, increasing the quality monitoring of the training process, shaping modern professional knowledge, skills, and competencies in teachers, developing acmeologic motivation towards professional activity, and training pedagogical specialists are all required."

#### References

1. Tolipova J.O. Biology Teaching Methodology. Nizomiy TDPU Publishing. - T.: – 2012. – 214
2. Yusupova N.V. Developing the professional competencies of teachers in interdisciplinary communication. PhD thesis. Tashkent, 2021. -140p
3. Preparation of text and notes by V.A. Rotenberg. I.P. Pavlov. 1973. - 563 p
4. A.T. G'ofurov, S.S.Fayzullaev, U.E.Raxmatov. "From genetics to practice". Textbook - T.: Education technology. 2007. - 245 p
5. <https://tdi.uz/page/o-zr-prezidentining-ta'lim-to'g'risidagi-qaror-farmon-va-farmoyishlari>
6. source: <https://uz.wikipedia.org/wiki/Integratsiya>