

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

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**Abstract.** *Complementary levels of formation of pedagogical skills in future biology teachers are revealed in the article. Introduction of the pedagogical skills of future biology teachers in the educational process on the basis of the principle of individualization and democratization, using the specific features of the integration of pedagogical knowledge in biology education, pedagogical training of future biology teachers innovative technologies that allow to improve the content, methods, tools and forms of preparation for activity, the content of professional activities are highlighted.*

**Keywords:** *didactic foundations of teaching biological subjects, vitagen, constructive, didactic factor, teaching forms, methods, tools, pedagogical activity, self-esteem of teachers as individuals development.*

Uzbekistan In the context of the reforms being carried out in the Republic, special attention is being paid to the training of intellectual potential personnel worthy of the demands of the market, their preparation for pedagogic activities in the integrative and innovative technological processes . In particular, the implementation of five initiatives, which include comprehensive measures aimed at introducing modern trends, the development of state educational standards and improved curricula based on the competence approach to the education system, foreign experiences in training future personnel. wide opportunities are being created to rely on integration and innovation. Decree No. PF-6108 of the President of the Republic of Uzbekistan " On measures for the development of education and science in the period of new development of Uzbekistan" and "Handbook on the further improvement of the education system " In the decision on additional measures, specific tasks for the fundamental improvement of the education system were defined. The spiritual image, moral character, and professional responsibility of educators are important in the development of future pedagogues-personnel as qualified specialists. In particular, the methodological research of improving the level of formation of the future biology teacher's preparation for pedagogical activities, based on an integrative approach, determines the relevance of our scientific research work.

BIZagvyazinsky, NVKuzmina, MV Klarin, LSPodimova, MNSkatkin, on the preparation of teachers for pedagogical activity by means of integrative and innovative teaching in education, the concept of activity that bases the possibilities of integral-module teaching in the formation of students' skills and competencies AA Bobrov, BCLednev , MS Park, PI Pidkasisty, NF Talyzina, LA Tsvetkov, GI Shchukin were enlightened in the course of their creative research. Many of our pedagogic scientists in our republic RXJurayev, NAMuslimov, QTolimov, FMZakirova, MHLutfullayev, NITaylakov improved the preparation of future pedagogues for teaching activities based on integrative education, pedagogical knowledge and technologies, their scientific foundations, scientists A.Azizkhodjaeva, R. Akhliddinov, J. Tolipova and others have been

researched to a certain extent. The use of interdisciplinary excellence in the educational process B.Abdullaeva, ZEAZimova, GRAlimatova, S.Alikhonov, XBNorbo'taev, AASalomov, A.CH.Choriev, AVUsova, the problems of future teacher personality formation were thoroughly studied in the works of MOOchilov, XIIbragimov, UNNishonaliyev, DXNasriddinova and several other researchers. Modern education reforms focused on integration expand and complicate the tasks facing the future education system. They require a completely different level of training that allows the future teacher to freely approach new conditions, implement interdisciplinary integration and use its opportunities. The historical-pedagogical analysis of the development of the problem of interdisciplinary connections made it possible to identify the main directions of research, which are as follows: socio-pedagogical, this direction shows the importance of interdisciplinary connections in solving the issue of comprehensive development of the student's personality. Philosophical pedagogy, this direction reveals the role of interdisciplinary connections in the construction of the content structure and teaching process in the system of educational science, ensuring its integrity based on the synthesis of information from various educational disciplines. A set of functions of interdisciplinary connections is implemented in the professional training of future teachers only when the teacher implements all their aspects. [Tolipova JO Biology teaching methodology. TDPU with statutory name. -T.:– 2012. – 214 p]. Based on the study of the methodological problems of interdisciplinary connections, we have to briefly touch on the didactic issues of interdisciplinary connections, because they are considered as a basis (methodological basis) and a didactic category in relation to interdisciplinary connections. Approaches to determining the nature of the didactic categories of interdisciplinary connections and their types are very different. The scientific positions of researchers in understanding the nature of interdisciplinary connections and their classification into classes are determined by such factors as the concrete pedagogical tasks of research that are solved on the basis of interdisciplinary connections, the studied aspects of the problems of interdisciplinary connections and the level of their resolution, and the identification of concrete connections [Yusupova NV **Development of professional competencies of future teachers through interdisciplinary communication.** Pffdiss.:T.- 2021y., -140b ]. The psychological foundations of interdisciplinary connections were laid by the famous physiologist, academician IPPavlov in the form of a dynamic stereotype and a second signal system. He considered the formation of a system of complex time connections in the cerebral cortex as a physiological mechanism of knowledge acquisition. From the point of view of psychological adaptation, Pavlov equated them to connections between all forms of the reflection of the objective reality underlying the feeling. "All teaching consists in the formation of time connections, he writes, which is thought, thinking, knowledge " [Podgotovka teksta i primech. V.A. Rothenberg. I.P. Pavlov . - 1973. - 563 p.]. The laws of higher nervous activity discovered by IPPavlov indicate the conditions for formation and destruction of coherences (time connections). AT Gafurov, SS Faizullayev in the interdisciplinary approach to teaching biology researches the problems of interdisciplinary relations. Factors that contribute to active mental activity in the integration of academic subjects require the combination of subjects, the combination of teacher and student behavior, and the choice of content and methods taking into account the age of children. [ATG'ofurov, SSFayzullaev, UERakhmatov. "Problems and exercises from genetics". Study guide - T.: Educational technology. 2007. – 245 b].

An integrative approach to the training of future teachers is used to ensure the integrity of professional knowledge, practical work methods and personal qualities and qualities. The

integrative approach is used to integrate educational subjects that are relevant, relevant, logically mutually demanding, deepening and broadening, and consists in the formation of logically perfect knowledge, methods of work and personal qualities. With the help of interdisciplinary communication, the biology teacher, in cooperation with teachers of other subjects, solves the set of educational tasks purposefully. To do this, he must master theoretical issues and consciously apply instructions, finding new ways to use the interdisciplinary connections of teaching biology.

Teaching in higher education in an integrative process is the basis for expanding the intellectual and theoretically intuitive thinking of future personnel in all aspects. President of the Republic of Uzbekistan Sh. Mirziyoyev's decision of November 6, 2020, No. PF-6108, improving the quality and efficiency of the education system in the country, forming modern knowledge and skills in kindergarten students, pupils and students, educational systems and Tasks such as close cooperation and integration between the field of science, implementation of systematic work on ensuring the integrity and continuity of education are defined. [<https://tdi.uz/page/o-zr-prezidentinin-ta-lim-to-rishke-karor-farman-va-farmoyishlari>]. In the implementation of these tasks, equipping with modern information and communication technologies, expanding the access of students, teachers and young researchers of higher education institutions to world educational resources, electronic catalogs and databases of modern scientific literature, Higher education The goal was to further improve and comprehensively develop the system in the future, to develop the methodical base of the quality of integrative education in order to increase the quality and efficiency of education.

The use of integration in the teaching process is the basis for the development of students' scientific worldview, the formation of analytical, logical, and comparative thinking skills in a coherent and consistent manner through interdisciplinary communication. Integration (lat. integratio - restoration, filling, from the word integer - whole) is a concept that represents the state of interdependence of some parts and functions of an entire system or organism and the process leading to such a state. will pass. [<https://uz.wikipedia.org/wiki/Integration>]. Ensuring the integrity of subjects, requiring an integrative approach, requires a fundamentally different level of training that allows the teacher to move freely in new conditions, implement interdisciplinary integration and use its opportunities.

Formation of pedagogical skills of future biology teachers in pedagogic higher education institutions is carried out in the course of teaching the subjects "Biology teaching methodology", "Pedagogical technology and design in teaching biology". In the teaching of these subjects, it is necessary to follow a direct integrated approach to subjects such as the theory and history of pedagogy, pedagogical skills, speech culture, and general psychology in the training of a future biology teacher. In the development of our scientific research, we have set the following tasks based on an integrative approach in order to form pedagogical skills in students:

identification and analysis of situations forming an integrated environment in the content of biology teaching methodology;

determining the content of subjects based on the formation of professional pedagogical skills in students and determining the possibility of applying integrative situations;

effective use of content, methods and tools of pedagogical skills formation in future biology teachers based on an integrative approach;

development of students' communicative attitude and formation of scientific outlook in lessons based on an integrative approach;

development and implementation of didactic materials based on interdisciplinary integration based on improving students' professional skills;

These defined tasks are the basis for the formation of professional skills of the future biology teacher.

students for pedagogical activity consists of two components - acquisition of theoretical knowledge and pedagogical practice. This is a strategic plan, and both stages indicate a specific tactic, that is, after theoretical knowledge is mastered, practice is carried out. Modernization of higher educational institutions and the educational process in them, improvement of the quality monitoring of the system of training of pedagogues, modern professional knowledge, skills and abilities of future teachers , acmeological motivation in relation to professional activity, and training of pedagogues formation of professional training is required.

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