IMPROVING THE METHODOLOGICAL TRAINING AND RESEARCH ACTIVITIES OF FUTURE BIOLOGY TEACHERS

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ABSTRACT

The article analyses the peculiarities of methodological training of future teachers of biology in conditions of innovative development, emphasizes the role of the relationship of biology with other subjects in the process of methodological training of the future teacher

Keywords: Didactics, biology training methodology; Methodological training, methodological training content, future biology teachers.

INTRODUCTION, LITERATURE REVIEW AND DISCUSSION

In terms of innovative development in the world is conducted shirokomasshtabnaya rabota Po podgotovke pedagogicheskih kadrov, vladeyuschih metodicheskoy podgotovkoy in sootvetstvii with sovremennymi trebovaniyami, razrabotke mehanizmov sovershenstvovaniya metodicheskoy podgotovki future teachers nachalnyh klassov, a takzhe sozdaniyu modeley sovershenstvovaniya metodicheskoy podgotovki, metodicheskoy systems, multimedia elektronnyh resursov.

In sovershenstvovanii metodicheskoy podgotovki biology of the future teachers in Uzbekistan, with uchotom peredovogo zarubezhnogo opyta in postoyanno changing usloviyah, bolshoe znachenie priobretayut razrabotka tehnologii, didakticheskih osnov sovershenstvovaniya metodicheskoy podgotovki biology of the future teachers in the higher obrazovatelnyh institutions povyshenie effektivnosti pedagogicheskih uslovy, razrabotka soderzhaniya and structure criteria improvement and degree of formation, form, methods, models, improving the quality of education, as well as the development of theoretical and practical problems Improving the methodological training of future teachers of primary classes of pedagogical higher educational institutions. At the present stage of updating, spiritual uplift, one of the basic requirements of the present time is the development of a fully developed, educated, creative personality. In solving such a responsible and honorable mission, the role and merit of the biology teacher is great.

The current state of methodological science leaves much to be desired. The reasons for this situation are different, but a large proportion of the blame lies with the teachers themselves. Future biology teachers for the improvement of methodological preparation should organize the process of professional development, to better understand the goals and to achieve this goal. In order to properly organize the timely oriented methodological training of students, it is necessary to rely on a number of criteria. With the help of modern educational technologies, a process is being developed to develop a methodology for improving the methodological training of future biology teachers.

An analysis of methodological research in teaching biology in recent years shows that the four main provisions of the methodology (what to teach, who to teach, how to teach, why to teach)

are studied separately, and not as a complex problem. Most researchers pay attention mainly to the content of the training material, that is, what to teach. The main issue of the methodology, how to teach, in many cases is given by researchers in a distorted way or is considered at the level of subjective premises, without justification by psychological and physiological data that would confirm the need to use the proposed methodology to determine the age group and when studying a specific topic or section of a subject . It is time to move from declarative statements about the close connections of the methodology with pedagogy, psychology, and age-related physiology to their practical implementation. This does not mean that the future teacher needs to conduct research on human psychology or physiology, but he is obliged to use the richest data of educational psychology and age physiology in explaining methodological innovations.

On the other hand, since the educational institution fulfills the social order of society, there is an urgent need to justify the question “Why teach biology”, what kind of biological education does a modern student living in the age of the environmental crisis need to protect health due to the rapid spread of various human diseases. Future biology teachers are faced with the task of selecting didactically appropriate content of educational material from achievements in various fields of biological, medical and agricultural science.

The university methodology for teaching biology is confronted with the fact: the school is moving to work according to a new curriculum, focused on advanced world experiences. The current program mainly focuses not on the study of wildlife, but on acquaintance with it in images (filmstrips, code positives) and on monitors. Laboratory observations have almost disappeared from school practice, and training experiments are limited to the limit. In fact, school biology has recently lost its “contact with nature,” which noticeably affects the education of students.

Studying the world experience in improving the training of future biology teachers, one can analyze different approaches. For example, in Japan, where urbanization has been brought to the limit, the desperation with which the city dwellers seize any possibility of contact with nature, even with its peculiar surrogates, is especially noticeable. She is in small green courtyards, where, over a few square meters, their creators are trying to display all the diversity of Japanese nature; it is in those trees that residents put in pots on the streets, balconies and roofs of houses; she is in the carefully preserved holidays of admiring the blossoming sakura; she is in the constantly evolving art of ikebana; she is in the abolition of schoolchildren during rare natural phenomena, when it snows, sakura blossoms, etc.

The optimization of the teacher training system must begin with a radical change in the methodology of forming students' attitudes toward the teaching profession. We need a special program in the subject for students, which would orient them on an independent study of the main problems of pedagogy, psychology, and the methodology of teaching biology. It should include issues of mastering the methodology of transferring scientific information to students of a certain age group; the possibilities of the subject in educational and educational terms; the role of content, organizational forms, methods and means of training and education, etc.

The teacher will begin to direct the process of mastering students' professional skills in lectures, the contents of which should not interpret common truths. There will be a departure from the "method of ready knowledge." This means that the student and teacher will be equally responsible for the quality level of professional training.

At the current stage of development of pedagogical science, methodological research should become a priority. The success of the restructuring of public education depends on their operational solution, so the time has come for the methodological scientists of pedagogical universities. Unfortunately, there are many obstacles to solving this important work. Among them, one can note the paucity and dispersal of scientific personnel, the weak coordination of methodological research within the country. But the main reason is the overload of the teacher with training. In fact, research from an obligatory element of the university teacher turned into a hobby.

In higher education, the pedagogical process and scientific research are closely interconnected and complement each other, especially if teaching is of an educational-search nature, based on scientific data and evidence from school practice. In this case, it is appropriate to recall the statement of the French scientist Louis de Broglie, who noted that "research feeds teaching, and teaching is necessary so that the torch of science passes from the previous generation to the next." This is achieved when students do independent work of the creative plan in the learning process, analyze previous experience using literary sources, study and generalize the learning and upbringing processes observed directly at school by means of the subject, and hold discussions on general and particular didactic problems (forms, methods , teaching aids, etc.). All this contributes to the formation of students' scientific approach to the study and explanation of pedagogical phenomena.

An analysis of the interdependence of teaching and learning as a contradictory unity of instruction must be carried out taking into account the age characteristics of students. This will provide an opportunity to develop a scientifically based methodology of educational and cognitive activity of children. The contradiction of the learning process is manifested in some cases in activity, and in others - in the passivity of the teacher and students. The contradiction is observed between knowledge and ignorance, between ordinary representations and scientific concepts, the formation of which is carried out in the system of lessons and other forms of educational work. Given this complex and controversial path, methodological research should indicate to the teacher a scientifically sound way of teaching the skills to analyze the subject being studied and connect the dissected parts.

Such logical operations as analysis and synthesis, abstraction, generalization, and concretization are crucial in the formation and further development of concepts. Therefore, the training methodology must be built so that mental operations find their expression in the form of concepts. Biology, in comparison with other academic subjects, has great opportunities to formulate concepts in students with the help of a variety of educational and practical methods.

Since the teacher’s profession is creative, in the process of teaching children he himself needs to operate with judgments and conclusions, which are not only interrelated, but also complement each other. An analysis of the methodological works on teaching biology shows that they focus on the memorization of material and the question of “forgetting what has been studied” is little covered, although it is no less important.

When developing methodological issues, it is very important to determine the verge of transition from a description and explanation of facts to generalizations, from reproductive to productive methods of assimilation of program material. Only on this basis can students be led to understand the complex issues of management and the development of students' mental processes, as well as to show how transitions are made from the particular to the general and

vice versa. These issues have not yet been adequately addressed in teaching methods, so they need to be given special attention.

Even a superficial analysis of many methodological recommendations convinces us that in explaining pedagogical phenomena observed in the intellectual and practical activity of students, research data on pedagogical psychology and age physiology are poorly used. The definition of these relationships makes it possible to understand the essence of the selection of the content of educational material, to correlate the levels of cognitive, physical and mental development of students during the didactic processing of the data of a particular science into a school subject, taking into account the age category of students and those educational and cognitive goals that are pursued by the teacher. Given the specifics of the pedagogical university, it is necessary to focus on the pedagogical aspects of environmental education, turn to the study of the environmental conditions in which schoolchildren are on a daily basis, using the example of schools in an industrial city, rural area, and urban-type working village.

Considering the experience of teaching methods of natural science, it is necessary to show the methods of analyzing methodological theories from primary sources in laboratory and practical classes, so that students feel the time, the social conditions in which the work was created, the development path of methodological thought, see what remains in the annals of history and what is used in modern school.

To prepare a modern specialist, it is necessary to include foreign experience in the biological education of students in the program of a university methodology. It is better to cover this issue in comparison with our training system, paying particular attention to the scientific substantiation of procedural relations in teaching and learning, the content and methods of its implementation by appropriate means and in certain organizational forms.

Thus, according to the results of the analysis of the content, forms and methods of methodological training of future biology teachers in higher education, it can be concluded that sufficient attention is paid to methodological training, namely: universities teach didactics (teaching methods) of biology and other methodological courses, the contents of which reflects the current state of science and practice; widely apply traditional and innovative forms, methods and technologies of training; They attach great importance to the teaching practice in secondary schools, the use of information technology in the preparation of students.

In conclusion, it should be noted that it is important to continue to improve the stimulating, cognitive, procedural, integrative criteria that determine the methodological training of future biology, to develop a mechanism for improving the conceptual, reflective, integrative components of the methodical training of future biology, to develop a technology for improving the teaching methodology of future training educational and methodological support for the training of future biology teachers.

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