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TRAINING OF FUTURE BIOLOGY TEACHERS TO ORGANIZE EXCURSIONS IN SCHOOL

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Abstract. Excursions are an important form of organization of teaching biology in secondary schools. However, in the universities, the methodical training of future biology teachers is more aimed at conducting lessons. In the article the necessity of goal-directed training of future teachers of Biology to organize excursions to nature (hikes) is substantiated, the real status of using excursions at the school practice is analyzed.

Key words: excursion, hike (excursions to nature), training of future teachers of Biology.

Introduction. At the present stage of the development of education teacher of biology must not confine only by presentation of the program material. He or she is to teach students to think creatively, to develop the need of search activity, to form research skills, to form diligent attitude toward nature, and to teach them the methods of biological sciences.

Today, we can observe a paradoxical situation: the school-leaver has some «baggage» of knowledge, orientates in the great diversity of flora and fauna of particular continents or islands, but he has a rough idea about plants and animals in his own yard. In particular, our research shows that few students familiar with plants of native land. While answering the question «What plants grow near your school?», only 3% of pupils listed more than 10 species.

As you know, the basic form of learning in school has always been a lesson. However, the peculiarity of biology as a subject is that not only lessons but hikes (excursions to nature) are important as well. School practice proves that didactic material can't substitute the direct communication of pupils with nature. Hikes are exceptionally important for the formation of pupils' scientific

outlook, a holistic understanding of wildlife, the interconnection between organisms, the impact of human activities on the environment. Besides, during excursions to the nature pupils study natural diversity of native land.

Despite the importance of hikes as a form of training, its potential is not used enough. One of the reason is the lack of methodical skills for its conducting. While studying pedagogical discipline, including «Methods of Biology Teaching», future teachers get acquaint with the types of lessons, their didactic structure, methods and teaching techniques, means of visualization.

As for excursions, this theme is considered formally. Lectures cover issues about the role and importance of excursions in the course of biology teaching, stages of the event, forming of the reports about the event etc.

The very process of teachers training for excursions organizing is studied very little. Today we have only some manuals of such scientists and methodologists B. Raikov, I. Poliansky [14], M. Verzilin and V. Korsunskaya [5], A. Serebrovsky [17], I. Izmailov, V. Mykhlin [3], Ye. Popovskaya [15], D. Traytak [18] and others. But these publications is already outdated.

The works of these scientists, although did not loose their value, but are outdated in some way and their implementation into school practice the needs revision. New approaches to hikes organizing are revealed by Russian scientists L. Byelyanina [1] A. Marina [11] E. Tsykalo [19, 20], G. Zarovnyi [9]; Belarusian scientists S. Kuntsevich, V. Zuev, S. Severin [16] and others. Recent publications of Ukrainian methodists L. Berezka [2], I. Moroz, N. Hrytsai [6; 12], V. Suryadnova, V. Oliynyk, V. Kovtun [13] and others covered only some issues of excursion methodology. That is why there is a need to improve the methodical training of teachers to excursions organizing.

The aim of our study is to justify the need of future teachers of biology target training to conduct tours in nature, to analyze the actual use of excursions in the school practice.

Results. Ukrainian scientists gave the following definition of excursion: «School excursion is a form of educational work with the class or group of pupils in the natural landscape, at the enterprise, to museum, exhibitions, the aim of which is the observation and study of various objects and phenomena by pupils» [7, p. 375]. Among the most common excursions are hikes (excursion to nature) that are hold in different biogeocenosis: to forest, park, step, meadow, river, swamp or lake.

Based on theoretical analysis of the literature [1–20], we singled out the features which characterize this form of training:

- study of biological objects or phenopmena are held directly in nature, at enterprise, at museum, exhibition and etc.;

- solving the specific educational objectives (study of flora and fauna, biogeocoenosis by observation in nature, acquaintance with different kinds of production, inculcating love of nature, work, activities aimed at concrete objects and phenomena studying in their natural habitat, or a specially created environment);

- pupils cognitive activity is hold with maximum visuality;

- an opportunity for integrated use of teaching methods;

- dominant role of observation and independent pupils study;

- practical orientation of excursions;

- deductive process of thinking – from a particular perception of objects and phenomena to abstract reasoning, generalizations;

- structure of the educational process includes preliminary work of teacher and students, their activities during the tour, and its summarizing;

- educational process is carried outside the classes, school, the quantity of pupils can be changed;

- teacher does not always conduct the explanation; guide, researcher, worker and others can be involved.

According to the sources [3; 14; 15; 17; 18], excursions allow to acquaint children with plants and animals of native land on vivid and concrete examples; excursions activate pupils cognitive recourses, develop interest to biological science, expand and deepen their knowledge. Pupils see the plants and animals in the natural environment: plants – in connection with the soil, animals – in connection with plants, and get an idea of biocenose, integrity of nature etc. Direct communication with nature, cognition of its effects forms not only proper biological concept, but also has great educational value.

In the methodical source [3; 6; 10] we distinguish the program and extracurricular excursions. If programme (educational) excursions are hold according to the curriculum and their main goal is practical acquaintance with material or its fixing, then extracurricular excursions have exploratory character; and the students who take part in the excursions an interested in the final result.

Extracurricular excursions are hold according to the plan of extracurricular activities, they are not directly connected with the study of program material, but are of great educational importance. According to O. Kazakova, during the extracurricular excursions ... «teacher pays more attention to the pupils independent initiative, includes items of games and entertainment» [10, p. 26].

Despite the obvious advantages of excursion as a form of training teachers of biology, teachers use them rarely. Sometimes even the program excursion is replaced by usual lessons. Also we should mention that some teachers ignore the individual components of excursions (individual work, students reporting, summarizing, etc.). To find out if the excursions are common in outclass work in biology, we have conducted the survey of teachers of biology in Rivne region. There were 98 respondents. According to the study results excursions are used only by 35,7% of teachers in Rivne region. However, excursions, according to the responses of teachers, have the first place among activation of the pupils

cognitive activity (28,6%). We agree with the words of D. Traytak that «a successful excursion has a great influence on pupils. Information, achieved during the excursion, is usually remembered for a long time» [18, p. 42].

Analysis of theoretical sources [1–20] and school practice made it possible to determine a number of reasons for the low use of excursions in teaching biology, such as:

- great load of teachers, because the preparations to the excursion takes more time and efforts than the preparation for lessons;
- remoteness of natural objects, to which excursions can be held (especially, residents);
- insufficient knowledge of the methodology of excursion holding;
- lack of a proper amount of methodical literature;
- problems with the discipline during an excursion;
- low level of teachers' knowledge about native plants and animals, lack of practical skills in determining of plant species, animals and fungi and so on.

Usually, teachers avoid excursions because it requires more time and efforts for the preparation. But some of these thesis concern of professional competence of teachers, which begins to form during training in higher education.

In addition, during our research we identified shortcomings of traditional methods of biological excursions:

- initiative comes entirely from the teacher (defining of the theme, tasks, time and the place of excursion, organization and control of training pupils, control of independent pupils work), so the developmental impact of excursions is small;
- students, mostly, are the performers of the proposed by a teacher plan, so very often they take part in its implementation without much enthusiasm;

- direct connection «teacher – student» has privilege to the connection “student – teacher”, and this reduces the initiative and independence of pupils;
- low cognitive activity and lack of responsibility for independent tasks;
- teacher’s main efforts are aimed at regulating the behavior of pupils;
- main objective of excursions is acquiring knowledge, and personal development of the value attitude of wildlife, environmental protection, ecological culture, experience, creativity is almost unsolved.

In the context of the proposed study we interviewed the students of International University of Economics and Humanities named after Academician Stepan Demianchuk (Rivne), Rivne State University of Humanities, the National Pedagogical University named after M. P. Dragomanov and Poltava V. G. Korolenko National Pedagogical University (386 respondents). According to survey results only 34,9% of them plan to use the excursions in their future work.

The following facts reveal the need for methodological improvement of future teachers of biology in conducting excursions. The above-mentioned training includes classroom and extracurricular pupils work, pedagogical, botanical and zoological and practical work.

During the lecture course in methods of biology teaching the future teachers get the acquaintance with the theoretical techniques of excursion holding.

At the lecture it is necessary to enlighten not only the issue of place and role of excursions in the educational process, their classification, stages of implementation, ways of excursions materials forming, but also to draw attention to ways of improving the techniques of modern hikes (excursions to nature): 1) implementation of personally oriented approach 2) enhance of the developing role of hikes, 3) using of active approach, 4) wider use of inner and inter-subject relations, 5) introduction of problem-based education, project

method, 6) using of active teaching methods, 7) involvement of pupils to games; 8) holding a cycle of extracurricular hikes, etc.

Laboratory and practical classes enforce consolidation and synthesis of students' skills to organize excursions. In particular, future teachers analyze the methodical plans of excursions, offer themes of extracurricular excursions, develop the instructive cards for individual tasks during the excursion, choose biological and other games.

We support the views of Russian scientists and practitioners L. Byelyanina, E. Tsykalo, who stated that the ideas of education humanization are to improve methods of biological excursions [1; 19; 20]. Thus, the emphasis in training should be made on the individuality of pupil. According to E. Tsykalo, the task of personally-oriented biological excursions is not only to deepen knowledge, but «... to form human care attitude to wildlife, experience and salvations of biological environmental problems that occur in nature, and – what is particularly important – to develop the pupils' creative activity» [19, p. 47].

Thus, the main purpose of excursion is student personal development, forming experience of creative activity. We, therefore, agree with E. Tsykalo that this method of training should be modernized by cultural, activity, and valuable approach. He believes that developmental potential of biological excursions is that they combine training, wildlife and an active pupil who tries to understand the wildlife. Teacher organizes their interaction and creates good conditions for the development of personality in comparison with classroom instruction. Development affects not only the quality of biological knowledge, but all spheres of individuality. A pupil tries to interact with wildlife in accordance with its laws, tries to understand himself or herself, he or she forms a system of personal values regarding wildlife [19].

According to our survey results, during hikes there are all possibilities of problem-based education, use of game forms and methods of pupils cognitive independent activity in studying nature, and of the implementation of educational projects, etc. Under the active approach, training activity at biological excursions is the basis, condition and the result of the individual development.

In our opinion, the methodical recommendations, widely implemented by Belarusian scientists are worth of studying. According to this method, during the organization of excursions it is important to use the motto, which consists of three words: «Head, Heart, Hands». In the English-speaking environmental educational materials the motto can be found in the form of HHH according to the English «HEAD, HEARTAND, HANDS». It means that the best knowledge about the world person of any age can get through three «channels»:

- the first channel – **The Head** (The process of education, for instance about plants and animals that live in this area, its history, ecological relationships in the ecosystem);

- the second channel – **Heart** (responsible for the feelings and emotions that appear during the pupil's studying process);

- the third channel – **Hands** (during independent work pupils can make something by their hands and through the process get knowledge about the world) [16].

Belarusian methodists advise to take into account these three «H» when planning excursions, including the appropriate activity in their events. It is important also during excursions to use such techniques as a monologue, dialogue, group discussion, presentation, method of objects that enable excursion diversification and promote a better perception of biological information.

The problem of improving the techniques of modern biology excursions holding is very important because, as noted by V. Verbitsky, excursion method establishes a new outlook and a new way of life of the third millennium, which includes the principles of rational use of nature as well as effective social practices in the broadest sense of the word [4].

The next step in training of the future teacher of biology to conduct the excursion is the use of the acquired knowledge and skills during the pedagogical practices at school. After careful preparation students held various hikes with pupils of different age groups, then their methodical training and quality of the excursion was analyzed. Discussion of excursions results gave an opportunity to identify negative points in future teachers' work, fix them, and help them to overcome difficulties.

Conclusion. The results demonstrate the effectiveness of the proposed methodical training of future teachers to conduct hikes (excursions to the nature).

So we can formulate the following conclusions:

1. Hikes are an integral part of the educational process in studying biology.
2. In modern school excursion as a form of training is not used enough, in particular, because of imperfect methodical training of teachers to conduct it.
3. Focused methodical training of future teachers during lectures and practical and laboratory classes, and also during the pedagogical practice at school will contribute to wider use of excursions in studying biology.

The objectives of further research are to develop the methodical recommendation how to organize the excursion in the different ecosystems based on the abovementioned trends in methods of biology training.

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