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THEORETICAL AND METHODOLOGICAL SUPPORT OF TRAINING OF FUTURE TEACHERS OF THE NEW UKRAINIAN PRIMARY SCHOOL FOR THE FORMATION OF ENVIRONMENTAL CULTURE

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The pedagogical condition of training a future primary school teacher for the formation of environmental culture that is the use of appropriate traditional and innovative forms and methods in the direction of actualization of needs of children in nature protection activities is characterized. The implementation of this condition is based on the cooperation of lecturers and students of higher educational institutions and was carried out in classroom and during extracurricular activities. Updated curricula on the subjects "Fundamentals of Environmental Studies", "Methods of Teaching Subjects of the Integrated Course "I Explore the World" are provided.

The program of pedagogical practice for students of higher educational establishments (3rd year, Specialty 013 Primary Education) with environmental content is updated – the purpose and objectives for each lesson for studying topics related to nature protection and environmental management issues are formulated: definition of teaching methods for nature protection and environmental management taking into account psychological and individual characteristics of children, self-analysis of the lesson on the integrated course "I Explore the World", analysis of a lesson taking into account the solution of pedagogic and educational tasks set before the lesson. The directions of educational (field) practice are specified: study and assessment of the state of nature of the native land; nature protection; topics and content of ecological excursions as a leading organizational form of educational (field) practice are diversified.

The developments of the special seminar "Psychological and Pedagogical Foundations of Environmental Education of Primary School Children" are provided. The seminar consisted of three parts: 1) the first part "Nature as a Universal Value" revealed the global problems of the planet, the essence of environmental culture of a teacher; 2) in the second part – "Psychological Bases of Environmental Education of Primary School Children" psychological methods of

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formation of environmental consciousness and behaviour were studied; 3) the third part is devoted to the pedagogical foundations of environmental education of primary school children.

Key words: innovative forms and methods; training a future teacher; pedagogical condition; primary school children; subject "Fundamentals of Environmental Studies"; pedagogical practice, educational (field) practice, special seminar.

ТЕОРЕТИКО-МЕТОДИЧНИЙ СУПРОВІД ПІДГОТОВКИ МАЙБУТНІХ УЧИТЕЛІВ НОВОЇ УКРАЇНСЬКОЇ ПОЧАТКОВОЇ ШКОЛИ ДО ФОРМУВАННЯ ЕКОЛОГІЧНОЇ КУЛЬТУРИ

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Охарактеризовано педагогічну умову підготовки майбутнього вчителя початкової школи до формування екологічної культури молодших школярів – використання оптимальних традиційних та інноваційних форм і методів у напрямі актуалізації потреб молодших школярів у природоохоронній діяльності. Реалізація цієї умови ґрунтується на співробітництві викладачів і здобувачів вищої освіти та здійснювалася в аудиторній і в позааудиторній діяльності. Надана оновлена робоча програма з навчальних дисциплін "Основи природознавства", "Методика навчання дисциплін інтегрованого курсу "Я досліджую світ". Оновлено програму педагогічної практики для здобувачів вищої освіти (3 курс спеціальність 013 Початкова освіта) з екологічним змістом – сформована мета, завдання для кожного уроку при вивченні тем, присвячених питанням охорони природи та раціонального природокористування: визначення методів навчання з охорони природи та раціонального природокористування з огляду на психологічні та індивідуальні особливості школярів, проведення самоаналізу проведеного уроку з інтегрованого курсу "Я досліджую світ", аналіз уроку з огляду на вирішення виховних та освітніх завдань, поставлених перед уроком. Уточнено напрями навчальної (польової) практики: вивчення та оцінка стану природи рідного краю; охорона природи; урізноманітнена тематика і зміст екологічних екскурсій, як провідної організаційної форми навчальної (польової) практики. Надані розробки спецсеминару "Психолого-педагогічні основи екологічної освіти молодших школярів", який містив три частини: 1) у першій частині "Природа як загальнолюдська цінність" розкривалися глобальні проблеми планети, сутність екологічної культури педагога; 2) у другій – "Психологічні основи екологічної освіти молодших школярів" – вивчалися психологічні прийоми формування екологічної свідомості та поведінки; 3) третя частина присвячена педагогічним основам екологічної освіти молодших школярів.

Ключові слова: інноваційні форми та методи; підготовка майбутнього вчителя; педагогічна умова; молодші школярі; навчальна дисципліна "Основи природознавства"; педагогічна практика, навчальна (польова) практика, спецсеминар.

Introduction of the issue. Primary school, which plays a crucial role in inculcating a sense of responsibility for native nature in children, has the following tasks: to evoke children's emotions about various phenomena and objects of nature, the desire to enjoy nature, the desire to express their feelings from communication with it through literature, art, to reveal to children the importance of nature as a part of culture, to develop primary

school children's environmental culture and realization that everything in nature is balanced [14: 15]. In order for children to know and understand the world around them better, to have an idea of the environmental problems facing humanity, it is necessary that they first acquire a certain fund of knowledge about the environment. The higher the level of knowledge, skills, moral education is provided in primary school, the more confidently we can

talk about the formation of a general culture of personality (environmental culture is a component of a general culture). The main problem facing modern primary school in the formation of environmental culture and behavior of children is that its educational process is extremely streamlined, which is, in our opinion, a consequence of insufficient consideration of physiological and psychological nature of primary school children, the laws of their development and perception of the surrounding reality. In addition, the technocratic approach, which has been developing for many years in the domestic educational system, did not provide for taking full account of innovations related to the organization of conditions of humanization, humanitarization of education, using the means of visual teaching

Current state of the issue. At the same time, in close connection with the development of issues of environmental education and upbringing, the issues and state of professional training of teachers for this work are analyzed (H. Biliavskiy [3], I. Buzenko [7], V. Hoblyk [11], S. Dubiaha [21], I. Sichko [20], O. Bida [2; 23], T. Hritchenko [12], O. Groshovenko [13], N. Molodychenko [17], V. Tanska [22], D. Arthur [1], R. Booth [5], M. Cohen [8], J. Dillon [10], C. Robertson [19], O. Borzyk [6] and others. Researchers study the professional qualities of future teachers, including primary school teachers, necessary for the formation of school children's environmental culture (environmental competence, ecocentric worldview, environmental responsibility, etc.), however, the issues of educational programs content.

The outline of unresolved issues brought up in the article. Also, a low level of readiness of a future primary school teacher to carry out environmental and pedagogical activities prevails [2: 12]. The reasons for this are: insufficient attention to

environmental education and the formation of ideas about environmental and pedagogical activities at school; weak orientation of the content of education, lack of electives, special seminars aimed at preparing future primary school teachers for the formation of school children's environmental culture; lack of scientifically sound methodological recommendations.

The aim of research is to theoretically substantiate the use of appropriate traditional and innovative forms and methods as a pedagogical condition for training future primary school teachers.

Results and discussion. Environmental education is receiving more and more attention in the domestic and foreign literature. Researchers determine the features of the relationship between society and nature, analyze the current environmental situation, suggest ways to overcome the environmental crisis, highlight the problems of forming a personality who has an environmental worldview and culture. Foreign and domestic scientists (Yu. Boichuk [4], O. Borzyk [6]) argue that a person, who can solve modern global problems, should have a high level of environmental culture, the formation of which is a strategic task of every civilized state.

The issues of formation of environmental culture in primary school, development of emotional sphere and practical skills in environmental activities, the formation of moral values are revealed in the research of scientists (A. Voitovych [24], R. Zhyhailova [26], T. Zavhorodnia [25], N. Pustovit [18]). According to V. Melash, scientist notes the lack of knowledge of school children about ecology, the weak development of creative thinking needed to solve non-standard environmental problems [14; 15]. The reason for this situation is the insufficient readiness of teachers to

carry out environmental education and upbringing, the formation of school children's environmental culture.

Analysis of the process of preparing future primary school teachers for the formation of school children's environmental culture showed that this problem has a number of drawbacks: 1) in primary school the principle of interdisciplinarity of environmental education, environmentalization of all subjects is fulfilled; in higher educational establishments environmental education is carried out mainly within the subjects taught by lecturers of different departments, not always implementing the principle of professional integration; 2) knowledge, skills of environmental and pedagogical activities are addressed only to separate, mainly ecological aspects of interaction with the nature, but not to the complex problem solution; 3) disruption of the actual ecological and ecological and pedagogical training of students of higher educational establishments in terms of content [21: 103]. In order for the environmental and pedagogical training of students of higher educational establishments to be effective, it is necessary to identify and consider the most important pedagogical conditions of the educational process. Under the conceptual content of the category of pedagogical conditions of training a future primary school teacher for formation of primary school children's environmental culture we mean the purposeful and objective possibilities of educational process and factors and circumstances providing the corresponding process in unity of traditional and innovative approaches. One of the most effective pedagogical conditions is the use of appropriate traditional and innovative forms and methods in the direction of actualizing the needs of children in nature protection activities.

The implementation of this condition is based on the cooperation of teachers

and students of higher educational establishments and was carried out in the classroom (problem lectures and seminars, thematic discussions (round table, conference), presentation, group training) and extracurricular activities (environmental campaigns, environmental movement, nature protection activities, excursions, trips, ecological trail, theatrical events). The effectiveness of real practice was ensured not by individual forms of teaching, but by their well thought-out interdependent system. The method of lecturing offered to students of higher educational establishments is an actual presentation by means of creating problematic ecological and environmental and pedagogical situations, introduction of different variants of their solution, elements of dialogue, discussions, independent work. Problem lectures for students of higher educational establishments included the following issues: determining the role and place of primary school in the system of continuing environmental education; formation of ecological worldview of school children at the present stage; selection of appropriate forms and methods of environmental education in the conditions of primary school; people as natural and social beings and their relationship with the environment [25: 39]. Our research has shown that, in terms of methodological training, workshops that consisted of two parts are effective: theoretical (discussion of the problem, debate, solution of issues); and practical (modelling of fragments of lessons and their approbation in the classroom). For example: ways and means of introducing the "environmental" component into the content of the course "Fundamentals of Environmental Studies"; activation of school children's cognitive activity at the lessons "I Explore the World" and during extracurricular activities; forms and methods of environmental education of primary school children;

development of children's creative abilities by means of nature; the role of the family in the system of environmental education of primary school children. In order to increase the effectiveness of environmental and pedagogical training of students of higher educational establishments, the following groups of practical classes were used: practical classes to deepen ecological and theoretical knowledge and the formation of practical skills of interaction with natural objects; practical classes on the methods of environmental education of children [15: 377]. The first group of practical classes was covered in the topics "Botany with the Basics of Ecology", "Zoology with the Basics of Ecology" on the following themes: study of the structure of plant and animal organisms under a microscope and with the naked eye, study of the influence of environmental factors on the growth and development of plants and animals,

study of ecosystem structure, study of adaptation of plants and animals to different living conditions, study and modelling of global environmental problems.

The second group of practical classes included: analysis of methodological materials on environmental education of children; development of didactic materials for the course "Methods of Teaching Subjects of the Integrated Course "I Explore the World" taking into account the environmental component; development of ecological research works; compilation of ecological tasks, fairy tales, stories, modelling of fragments of lessons and extracurricular activities with targeted guidance on environmental education of children, the work of a future teacher in the educational and research area. Practical classes are grouped by themes, aspects and topics of which are shown in table 1.

Table 1

Aspects and Topics of Practical Classes

Aspects of practical work	Topics of practical classes
1. Practical classes on the formation of environmental, pedagogical and methodological knowledge, skills and abilities	Interactive methods and their use at the lessons and during extracurricular activities. The use of the research method in the course "Methods of Teaching Subjects of the Integrated Course "I Explore the World".
2. Practical classes to improve professional knowledge, skills and abilities in the field of environmental education.	Development of practical classes, experiments, research tasks. Compilation of ecological fairy tales, empathy stories, eco tasks.
3. Practical classes on control of levels of environmental and pedagogical knowledge, abilities and skills formation	Development of the program of an ecological club for 1-4 grades. Modelling a fragment of a lesson or extracurricular activity.

In order to strengthen the processes of environmentalization of the content of subjects, a special seminar (3rd year, Specialty 013 Primary Education) "Psychological and Pedagogical Foundations of Environmental Education of Primary School Children" was proposed. The first part "Nature as a Universal Value" revealed the global

problems of the planet, the essence of the environmental culture of a teacher. In the second part "Psychological Bases of Environmental Education of Primary School Children" psychological methods of formation of environmental consciousness and behaviour were studied. The third part was devoted to the pedagogical foundations of

environmental education of children. The formation of ecological culture of students of higher educational establishments was carried out through the use of traditional and interactive forms of special seminars: a mini-conference, during which future experts expressed their attitude to the research problem; training, role-play game, dispute, competition. A special place was occupied by independent work of future teachers [12: 17]. A set of multimedia presentations has been prepared for the special seminar. During the part "Psychological Bases of Environmental Education of Primary School Children" environmental and psychological training with performance of non-standard tasks in a creative form was carried out. Initially, exercises aimed at expanding the perceptual experience of interaction with nature (for example, the exercise "Product Made of Bark") were proposed.

Then came exercises aimed at the development of environmental empathy, stimulating identification with natural objects. This was facilitated by such exercises as: "Fashion Studio", "Environmental Letters", "Warning Signs". In the final part, exercises of general character were performed, aimed at correcting the strategies of interaction with natural objects: "Environmental Ethics", "Environmental Code of the Earth's Inhabitants". The training exercises were notable for the use of active forms of learning, social modelling, and different situations. The exercise "Our Future" was performed by students of higher educational establishments during the first part of the special seminar "Nature as a Universal Value". The exercise "Environment" was performed by students of higher educational establishments during the second part of the special seminar "Psychological Foundations of Environmental Education of Primary School Children". Future specialists drew their surroundings (at home, at

work, in nature, in the store, in the theatre, etc.), briefly introduced everyone to their surroundings in different situations, then, using individual drawings, they depicted the scheme, highlighting environmental factors [4; 5; 12]. The work on the exercises "Sustainable Development" and "Education for Sustainable Development" was carried out during the study of the third part of the special seminar "Pedagogical Foundations of Environmental Education of Primary School Children". Students of higher educational establishments were asked to consider fragments of classes and determine their purpose. During the course, future teachers were given the following tasks: to develop scenarios for environmental events, their organization and implementation; to compile catalogues and bibliographies of scientific and methodical literature on the issues of environmental education of primary school children; to make a selection of methods of diagnostics of environmental education of primary school children.

The work on the study of global environmental problems was structured as follows: 1) students of higher educational establishments listed the global environmental problems they were aware of, among which there were: the ozone hole, climate change, environmental pollution, etc.; 2) students of higher educational establishments listed local environmental problems; 3) students of higher educational establishments discussed the possibility of reducing global environmental problems by solving local ones. In order to focus the attention of future professionals on the qualities needed by people to survive in the future, the exercise "Children of the Future" was performed. Work on the exercise was performed in subgroups. Each group had a brainstorm and made a list of knowledge, skills, values, attitudes that characterize children who will have to live in a changing world

and change the world positively. In the process of scientific work such a form of ecological education as ecological and psychological training was actively used. At the beginning of the lesson, students of higher educational establishments were offered exercises aimed at expanding the perceptual experience of interaction with nature ("Zoological Ballet", "Product made of Bark", etc.). Then were introduced exercises on the formation of environmental empathy, stimulation of identification with natural objects ("Fashion House", "Natural Orchestra", etc.).

At the final part were used exercises aimed at correcting the strategy of interaction with natural objects, environmentalization of the worldview of an individual, expanding the subjective ecological space, creating subject-subject relations of teachers and children ("Ecological Post", etc.) [8: 16]. Methods, means and forms of extracurricular activities of students of higher educational establishments include: participation in environmental campaigns, grant programs, social surveys of various segments of the population, research activities, scientific and practical conferences, competitions, photo contests, exhibitions, collective creative work ("Earth is Our Common Home"), phytodesign, its use in modern design, ecological workshop (ecology of colour), where at the edge of ecology and psychology such concepts as decision-making, responsibility, problem solving are formed.

During their studies, students of higher educational establishments carried out research projects in the form of observation of meteorological and phenological changes in the immediate natural environment. Observations were performed visually, using basic instruments (thermometer, compass, snow gauge, gnomon). Each group filled special observation diaries, where they recorded daily weather

changes (temperature, clouds, precipitation, wind direction and strength, atmospheric phenomena) were registered, and once a month using a gnomon were determined the length of the midday shadow to compare the height of solar elevation angle in different seasons of a year. The obtained results of the conducted phenological and ecological case-methods were made out, as a rule, in the form of multimedia presentations on various subjects: "Autumn (winter, spring) in the city", "Nature and I", "Ecological State of the River", etc. During the studying of the course "Methods of Teaching Subjects of the Integrated Course "I Explore the World" the following interactive teaching methods were used: role-play game, discussion, actions according to the instructions, group modelling.

Also, the following methods are used: brainstorm (storming, relay), situational methods (case method, analysis of specific situations, solution of situational and production issues), actions according to instructions (algorithm), creation of eco-projects (city ecology, waste disposal, projects of environmentally friendly house), dramatization (theatricalization, didactic theatre, staging), "ring".

An important tool for solving the issues of environmental and pedagogical activity is the portfolio of individual educational achievements that is the «portfolio» of the students of higher educational establishments. We have developed an exemplary scheme of the structure of the portfolio of documents and evaluation of its materials: information on participation in special seminars; creative book with the supplement of works; electronic documents; videos; models, projects, research works; reports on different types of practices. Teaching practice is also actively used in the formation of ecological and pedagogical activities skills of students of higher educational establishments. Teaching practice is

organized as personality-oriented, complicating, complex and creative one [15: 283].

Higher education students filled out practice diaries. Along with the recommendations concerning filling the diaries, it was suggested to include the following independent tasks: "Young Friends of Nature", "What a Young Nature Defender Should Know and be Able to Do?". The set of methods of psychological and pedagogical diagnostics for studying the school staff and the personality of individual students was suggested to higher education students during teaching practice. Materials for the diagnosis of environmental education of primary school children were developed: test "Salon of Nature". Objective: To determine the features of giving preference of future specialists to real objects and artistic images of nature. The essence of the task is that the "salon of nature" exhibits real objects of nature, books about the world of nature, people's lives in nature. Students of higher educational establishments can purchase a item of nature according to the rule: "You can buy in "Salon of Nature" any three favourite items, if you explain for what reason you buy, and why you buy this item". High level is 9 points, medium is 6 points, low is 3 points. The correct answer is 3 points. Definition of the purpose, role, motivation is 2 points. Inaccuracy of the answer is 1 point.

The teaching practice in the third year is of particular importance. The content of the activities of a student of higher educational establishments during this practice was as close as possible to the content of the real professional activity of a teacher. Future specialists were asked to perform the following tasks: to organize, conduct and compare the effectiveness of two different lessons (extracurricular activities) from the lesson "I Explore the World"; the first lesson should be based on the implementation of the knowledge

approach to teaching the lesson "I Explore the World" (story, discussion, demonstration of visual aids), and the second one should be based on the implementation of system and activity approach (observation, recognition, discussion, experiment, modelling, design, game). In view of the intensification of the educational process in primary school one should examine some topics of the subject "Fundamentals of Environmental Studies".

In the primary school children created personal situations of such types as the situation of actualization and need for knowledge, norms, experience in solving specific tasks; the situation of accepting a positive assessment of environmental knowledge, etc.; the situation of emotional experience; the situation of moral justification of norms and methods of activity; the situation of vision of the phenomena of nature and society in the context of ecological problems. For example, primary school children are asked, like ants, to build an "anthill" – a pyramid of cubes. Each child has his/her own cube – "a contribution" to the common cause.

The primary school includes knowledge about the connections between animate and inanimate nature, about environmental factors. In the lessons "I Explore the World", children were asked to make a schematic food chain (situation of knowledge actualization), to explain what can happen if one of the links disappears, and how it can affect a person's life. In the third and fourth grades are studied the sections "Nature and Us", "Save air and water, minerals and soil", which allow to generalize and systematize concept of nature and human interaction, accumulated by children, to give new knowledge to primary school children about the most important issues of nature protection: protection of air and water from pollution, reforestation, protection of

rare plants and animals, the responsibility of each person for their behaviour in nature [4: 122].

When primary school children studied these topics, the following questions and tasks were used: – What are the actions of people and how can they negatively affect the life of plants and animals? – Why should we be concerned about the danger that threatens rare plants and animals? – Can you say that you have already done something to prevent this danger? – In what way can you help nature? What does the requirement "Don't waste water" mean? – How do you understand what «useless» means?

We have updated the curriculum of teaching practice for future specialists (3rd year) with environmental content

that means formed goal, objectives for each lesson in studying topics related to nature protection and environmental management: definition of teaching methods concerning nature protection and environmental management in terms of psychological and individual features of primary school children, self-analysis of the lesson on the integrated course "I Explore the World", analysis of the lesson in view of the solution of educational and training tasks that were set before the lesson. The directions of educational (field) practice are specified: studying and assessment of nature's state of the native land; conservation; differentiated topics and content of ecological excursions as a leading organizational form (see table 2).

Table 2

Topics and content of ecological excursions

Themes of	Place	Skills and abilities
Forest is a natural group	General botanical reserve	Determination of species biodiversity; identification of the complex of adaptation of plant and animal organisms to the conditions of existence, habitat; development of the route of the

A special place is occupied by the methodology of observations (plans-instructions of observations were included in the notes of students of higher educational establishments), as well as the design and formation of environmental culture of primary

school children in the organization of Research on the Environment. Table 3 presents the methodology of organization of educational field practice as a system of different activities of a lecturer and future specialists.

Table 3

Organization of teaching (field) practice with updated content

1. Preparatory activities		Equipment
Student of higher educational establishments	Lecturer	
Reading methodical and special literature. Revision of the content of lecture courses in natural sciences and professional subjects	Reading methodical and special literature. Drawing up a plan of field practice, card index of literature. Development of excursion routes	Books and textbooks on teaching methods of natural education; popular science literature
Watching videos and slides	Development of tasks on video films. Demonstration of videos and slides using	Video film "Seasonal excursions in nature". Slides "Wild and

	multimedia	ornamental plants"
Drawing up plans-instructions for nature observation	Assistance in identifying plants, animals, minerals, soils.	Determinants of plants and animals, atlases, manuals
2. Main activities		
Conducting systematic of nature observations. Making herbariums and collections	Organization of work of higher education students in nature. Demonstration of techniques for making herbariums and collections.	Instruction maps for nature observations. Herbariums, collections of insects, seeds and fruits, stuffed animals, collections of soils and minerals.
Conducting excursions, experiments, nature researches. Discussion of the work done	Conversation with students of higher educational establishments concerning the results of the work done	Excursion equipment.
Keeping diaries of nature observations and completion of reports on excursions. Design of stands based on the results of excursions. Organization of exhibitions of herbariums and collections. Making summaries of excursions for primary school children	Conversation on excursions. Checking diaries of observations and reports. Adjustment of students of higher educational establishments activities. Development of research topics for future teachers of environmental studies	Exhibition of the best works of students of higher educational establishments. Diaries of nature observations of the region for the last 10 years. excursion notes
3. Control activities		
Oral and written answers. Participation in the final conference with reports	Control of knowledge of higher education students. Discussion of the results of observations	Interview questions

According to the results of the practice, the scientific-practical conference was held, at which students of higher educational establishments presented diaries, herbariums of plants, insect collections, videos, creative and research tasks.

Conclusions and research perspectives. The analysis of training a future primary school teacher for the formation of environmental culture revealed certain drawbacks: in the professional training of students of higher educational establishments, namely to theory and methods of ecological education studying is paid little attention; among the forms of organization of the educational process

are dominated traditional ones (lectures and practical classes) of a reproductive nature; the potential of ecology as an integrated science has not been used; the resource of psychological and pedagogical subjects for environmental training of primary school teachers is not fully involved. The pedagogical condition of training a future primary school teacher for formation of environmental culture is substantiated that is the use of appropriate traditional and innovative forms and methods in the direction of actualization of needs of primary school children in nature protection activities. The developed pedagogical condition provides effective training for students

of higher educational establishments for environmental and pedagogical activities. Prospects for further researches make up such areas as ensuring continuity in the technology of formation of environmental culture, optimizing training of future subject teachers in general secondary education, focused on effectiveness and activity approach to environmental education and primary school children upbringing.

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