

Development of ecological consciousness of future primary school teachers in the process of professional training

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Abstract. The article emphasizes that among the current and promising problems of modern pedagogical science of particular importance is the need to develop ecological consciousness of future primary school teachers in the process of their training. Focusing on modern theories of primary education, philosophy of education, the authors substantiate the acute general need for fundamental changes in the ecological consciousness of future primary school teachers in postclassical education. This is due to the influence of the latest models, tools and services in the context of primary education reform. The essence and the basic contradictions proving necessity of development of ecological consciousness of the future teachers of elementary school in educational process of higher school are considered. The analysis of the concept of “ecological consciousness” is carried out, the structure of ecological consciousness of the future primary school teacher is defined. The presented results of research and experimental work with the involvement of first-third year students of the first (bachelor’s) level of higher education in specialty 013 “Primary Education” present factual data for the diagnosis of levels of development of environmental knowledge and environmental awareness. The pedagogical conditions that will promote more effective development of ecological consciousness of future primary school teachers in the process of professional training in accordance with globalization changes in the ecological sphere, integration of domestic higher education in the European educational space, social transformations on the way to scientific and technological progress are identified.

1 Introduction

The requirements of today require the improvement of professional training of future primary school teachers, due to the need to educate the younger generation of the country, able to care for the natural environment, to use its resources wisely. It is no coincidence that among the current and promising problems of modern pedagogical science of particular importance is the need to develop ecological consciousness of future primary school teachers in the process of their training. Modern scientific theories, methodology of pedagogy, philosophy of national education create the basis for fundamental changes in the ecological consciousness of future primary school teachers in postclassical education. This is also due to the influence of new models, tools and services in the context of primary education reform. The essence of the main contradictions that accompany the development of ecological consciousness of future primary school teachers in the process of professional training is dictated by globalization changes in the environmental sphere, integration of domestic higher education in the European educational space, social transformations on the way to scientific and technological progress.

These aspects are emphasized in state documents on education: “National Doctrine of Education Develop-

ment” [1], “Concepts of Ecological Education in Ukraine” [2]. The mechanism of realization of the new educational paradigm in primary education is the reform “New Ukrainian School”, which identifies ten key competencies. One of these competencies is defined as “the ability to use natural resources wisely and rationally, awareness of the role of the ecological for human life and health, the ability and desire to follow a healthy lifestyle” [3, p. 14]. It can be formed in primary school students only if a high level of ecological consciousness and culture of the teacher. Therefore, the development of ecological consciousness of future primary school teachers in the training process is an important issue in improving the educational process in higher education.

2 Literature review

A significant amount of research is devoted to this issue. Among Ukrainian scientists, the influence of knowledge about nature on the formation of moral qualities of the individual and its attitude to the environment is noted by V. I. Vernadsky [4], K. D. Ushinsky [5], V. A. Sukhomlinsky [6] and others. The works of M. I. Bauer [7], H. O. Biliavskyi [8], N. V. Levchuk [9], A. N. Nekos [10] are devoted to the importance of ecological knowledge in the process of formation of ecological culture of personality. Issues of ecological training of students of higher education institutions, formation of ecological cul-

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ture in them are the subject of study of M. D. Andrea [11], C. L. Krause [12], V. R. Kuchma [13], V. S. Mastryukov [14] B. M. W. Mender [15], D. Tonoli [16], P. Vacher [17]. Peculiarities of formation of ecological culture of the specialist are investigated in the works of S. D. Deriabo [18], S. Futornyi [19], L. Gang [20], L. He [21], H. Mei [22], S. Sovhira [23]. H. O. Biliavskiy [8], E. V. Girusov [24], M. T. Mengak [25], T. S. Ninova [26] study the purpose, tasks and principles of ecological education.

The analysis of literature allows to outline the contradictions that prove the need to improve the process of development of environmental awareness of future primary school teachers, in particular, such: between modern requirements for the level of ecological and professional training of future specialists and the real state of their training in higher education; between the need for thorough greening of the content of the educational process and the need for modern curricula for vocational training of students, which will contribute to the qualitative growth of ecological consciousness of the future specialist; between the expediency of the development of future specialists in ecological knowledge and skills to preserve and improve the ecological and the lack of scientifically sound modern pedagogical theories and technologies, the implementation of which ensures the effectiveness of this process.

There is currently no single interpretation of the concept of “ecological consciousness”, but the most common are the following definitions: scientific and practical reflection of the relationship of man and society with the present and future environment, the need to harmonize relations between them; ordinary, everyday human consciousness, meaningfully directed by ecological meanings; a set of ecological ideas, attitudes to nature, strategies and technologies of interaction with it.

In the psychological and pedagogical literature, several approaches to defining the meaning of the concept of “ecological consciousness” are substantiated. E. V. Girusov considers ecological consciousness as a component of ecological culture, as a set of views, theories, emotions that reflect the problems of the relationship between society and the natural environment in terms of “ensuring progress in unity with the natural environment” [24, p. 82].

V. O. Skrebets believes that this is “the level of mental reproduction of the natural and artificial environment, their inner world, self-reflection of the place and role of man in the biological, physical, chemical world, as well as self-regulation and filling this reproduction with ecological content” [27, p. 48]. Ecological consciousness, according to the scientist, is characterized by all the signs of conscious human activity with the feature that it is initiated by ecological meaning. S. D. Deriabo and V. A. Iasvin understand ecological consciousness as “a set of ecological ideas, the existing attitude to nature, as well as relevant strategies and technologies of interaction with it” [18, p. 11]. V. I. Panov considers ecological consciousness as an attribute, ie a property of man as a component of relations in the system of relations “man – nature”. He sees the structure of ecological consciousness in the set of human ideas about the relationships in this system, personal atti-

tudes and technologies of human-nature interaction, vital ecologically oriented human values [28, p. 91].

V. I. Medvedev and A. A. Aldasheva [29, p. 162], developing the above approach, identify the following characteristics of ecological consciousness: the degree of reflection in the ecological consciousness of social values and institutions; expression in the ecological consciousness of prognostic elements in the situation of choosing the criteria for solving a specific ecological problem, that is focus on the “present for the sake of the future”; features of orientation of ecological consciousness on collective, society; opportunity to counteract ecological troubles, to take part in overcoming the consequences of anthropogenic ecological catastrophes.

As we can see, revealing the structure of ecological consciousness, scientists identify the following main components that reflect its social essence and regulatory functions:

- conscious assimilation by man of the norms of scientifically determined, ecologically appropriate, rational use of nature and development on this basis of a system of ecological beliefs, knowledge, skills that would provide optimal, in relation to nature, his practical activities;
- mastering the norms of using the means of organizing human economic activity in the context of responsible attitude to the problems of ecology and nature conservation, legal culture and knowledge of environmental legislation, ecological situation created at the place of residence: region, state, global scale;
- understanding oneself as a part of nature, which is for man a source of health, humanism, patriotic feelings, moral, aesthetic and other qualities;
- awareness that nature is a social value.

Selected characteristics reveal the meaning of the concept of “ecological consciousness”, which is an internal determinant of human attitudes to nature. According to F. A. Gismatov, the formation of ecological consciousness takes place in two ways: “spontaneously, on the basis of daily practical activities, and consciously, on the basis of a purposeful process of education and training in every field of human activity” [30, p. 71]. According to A. N. Vargo, the formation of ecological consciousness occurs in stages in accordance with the development of society “... for industrial society is characterized by interested and disturbing types of ecological consciousness, for ecologically problematic society – adaptive and unifying types of ecological consciousness; ecological society is characterized by an ecophilic type of ecological consciousness” [31, p. 16].

The formation of ecologically conscious personality, as noted by S. D. Deriabo and V. A. Iasvin, is a general principle of environmental education, concretized at three levels: 1) the formation of adequate ecological ideas about the system “man – nature”, which contributes to the understanding of their unity; 2) developing an attitude to the ecologic that determines the nature of areas of interaction with it, its motives, stimulates behavior and action in terms of ecological feasibility; 3) improvement of abilities and

skills of use of ecologically expedient technologies of interaction with nature [18, pp. 22–24].

Since the main guideline in solving these problems of ecological education is the organization of such activities of the individual, which reflects the development of technologies of human interaction with nature, so the development of ecological consciousness is through a combination of different organizational forms of learning. A lot of scholars emphasize this aspect in their research [32–42].

An important factor in the development of ecological consciousness is ecological knowledge, which is of particular importance for students of higher pedagogical institutions of education as future nature users or educators. Mastering any profession should be based on the priority role of ecological knowledge and relevant skills, which will predict the consequences of their professional activities. In addition, it promotes the inclusion of students themselves in creative cognitive activities.

Noting the need for relevant knowledge and beliefs for intelligent communication between society and nature, researchers believe that the greening of the material and spiritual life of society is a condition for overcoming the ecological crisis, and ensuring harmony in relations between society and nature is possible only due to changes in the worldview of man himself. This approach requires the study of the dynamics of the development of ecological consciousness of future professionals in the training of future primary school teachers.

3 Methods

The purpose of the article is to present the results of research and experimental work on the diagnosis of the dynamics of the development of ecological consciousness of future primary school teachers in the process of training. To do this, it is first necessary to specify the essence of the key concept of “ecological consciousness of future primary school teachers”, determine its structure. Levels of development of ecological consciousness of future primary school teachers in the process of professional training need to be diagnosed.

The development of ecological consciousness of future primary school teachers is carried out throughout the educational process. The ecological component is contained in the disciplines of the cycle of general and professional training, so there should be a change in the levels of ecological attitude to the environment, understanding of ecological problems of students of different class. To establish the level of ecological awareness, ecological knowledge of students on issues of interaction in the system “nature – man”, to determine their awareness of the need for ecological education for society, conducted a survey [35] first to third year students of the first (bachelor’s) level education specialty 013 “Primary Education” of Bohdan Khmelnytsky National University at Cherkasy [43].

Here are the results of a survey on selected questions of the questionnaires, which most clearly reveal the results on the level of development of ecological consciousness of students of different classes. In the figures 1–5 show (in percents) students’ answers to the questionnaire: group 1

– first class (course, year) students, group 2 – second class (course, year) students, group 3 – third class (course, year) students.

The answers to students’ questions about the causes of the global ecological crisis are distributed according to the results we summarized in figure 1.

First year students attribute the first global ecological crisis to the development of computerization (40.9 % respondents), which is a misjudgment. In fact, the impact of the development of agriculture and livestock, and later industry cause changes in the microclimate, soil conditions, fauna and flora. Only 22.72 % of first year students gave the correct answer; among second and third-class students gave the correct answer, respectively 53.4 % and 54.17 % respondents. The obtained empirical results confirm that the ecological education of first year students is currently quite conceptually weak, too declarative and fragmentary, which does not meet modern requirements.

The distribution of students’ answers to questions about the causes of today’s global ecological problems is presented in the figure 2.

Answering this question, 37.93 % of respondents in the first year of study and almost a quarter of second and third year students believe that the causes of global ecological problems are accidents at nuclear power plants. This result could be a consequence of the information received about the Chernobyl accident. 17.24 % respondents believe that scientific and technological progress and low level of ecological education caused the ecological crisis. It should be noted that third year students understand the role of ecological education in preserving the environment. This means that the concept of the conquest of nature, its transformation at the will of man, the technocratic style of thinking for the prosperity of mankind is detrimental to nature. Therefore, in third year, respondents are aware of the need for a responsible attitude to nature, the belief in the need for ecological knowledge.

Students’ answers to the question of relevance for each of them ecological knowledge to preserve the environment is presented in the figure 3.

As you can see, 83-87 % of respondents give a positive answer and assume that ecological knowledge is related to the modern existence of each person, his/her activities. 12.5–16.0 % of respondents give a negative result on the question. Since ecological knowledge is the basis for the formation of ecological awareness, the level of ecological awareness can be considered low. After all, students have insufficient ecological knowledge and beliefs, in the surrounding natural world is not included in the value orientations of these students.

Respondents’ answers to the question about the importance of ecological knowledge for modern man is presented in the figure 4.

Based on the analysis of the answers to this question, it can be concluded that only 22.22 % of third year students emphasize the need for ecological knowledge for the professional activities of future teachers. This means that ecological knowledge as a result of learning has not become a belief, which actualizes the improvement of ecological education and upbringing of students in the learning pro-

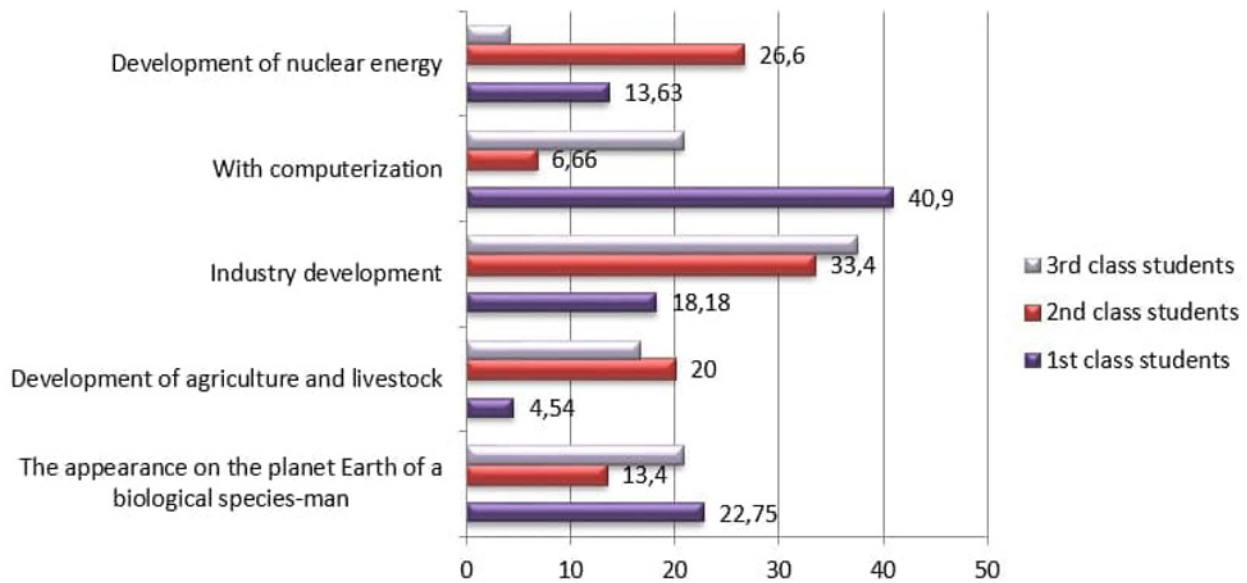


Figure 1. Students' understanding of the causes of the global environmental crisis.

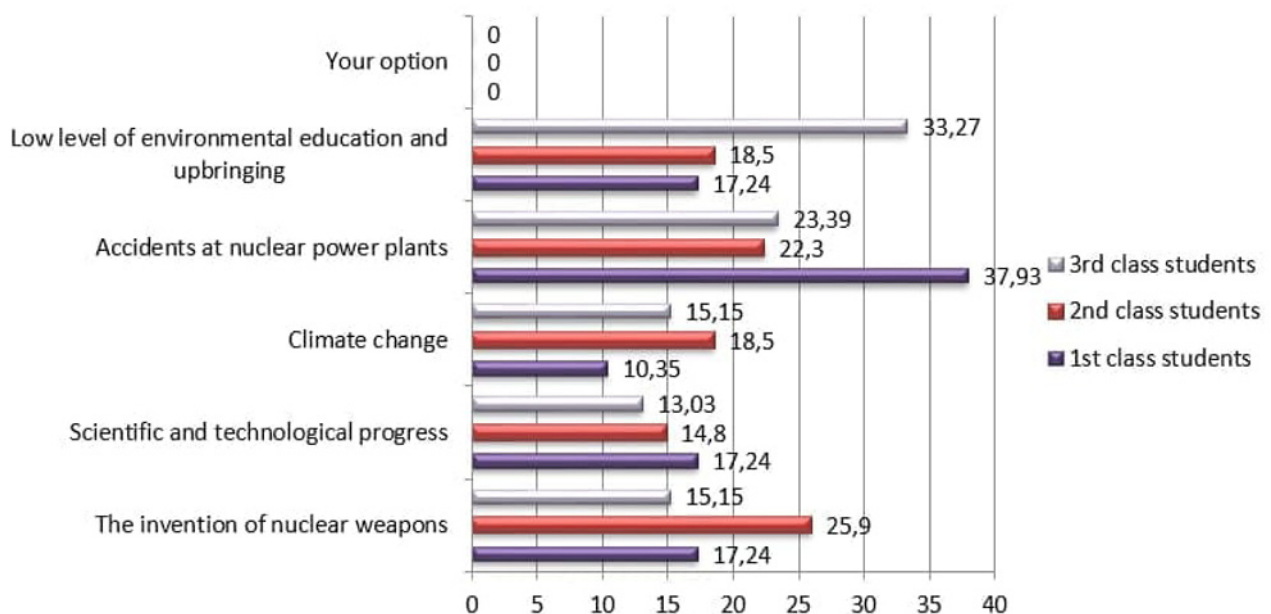


Figure 2. Distribution of students' answers to questions about the causes of today's global ecological problems.

cess. At the same time, 38 % of third year students have a desire for independence in judgments about the ecological situation, which is the basis of their willingness to apply knowledge in professional activities. In turn, 40 % of first year students and 37.5 % of second year students consider ecological issues only for general development. This confirms the lack of orientation in the ecological sphere.

In our opinion, the question of ways to optimize the interaction in the human-nature system is important, the answers to which presented in the figure 5.

More than 30 % of respondents from each group prefer greening of industry, while increasing the role of eco-

logical education and upbringing – only 18–25 %. The obtained data confirm insufficient understanding of the need to restructure the system of values of modern man and build a new strategy for the development of Ukraine. These and many other issues are addressed by raising the ecological awareness of the population, and especially – future teachers. It is no coincidence that 20–37 % of respondents say that more people need to be involved in solving ecological issues, but again not realizing that they first need to be provided with an appropriate level of ecological education.

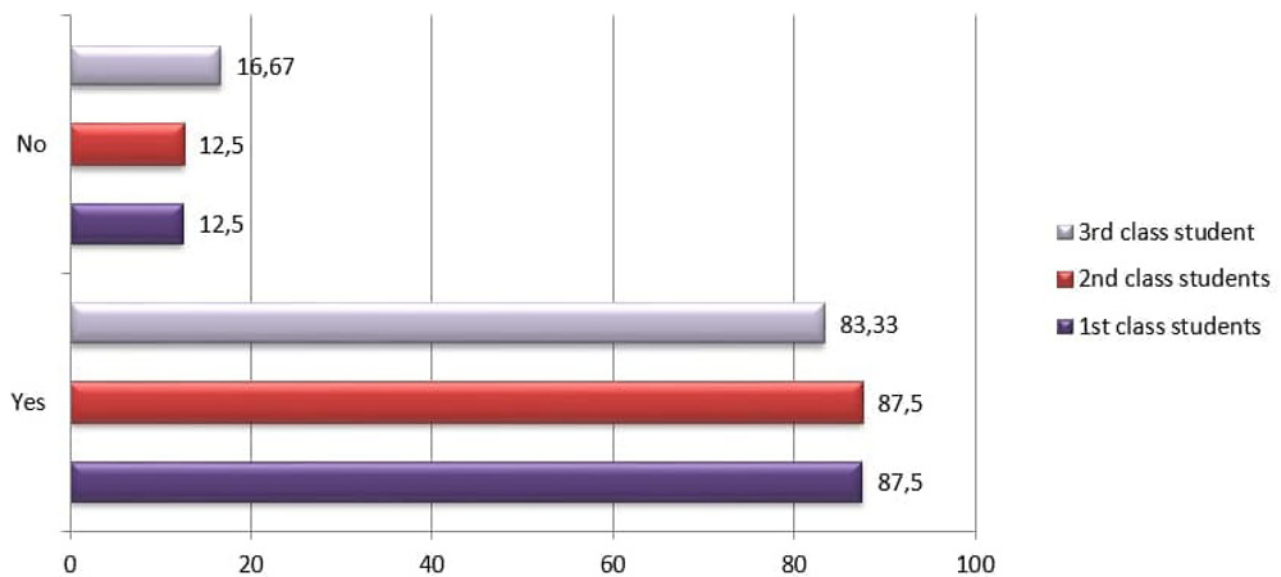


Figure 3. Students' answers to the question of relevance for each of them ecological knowledge to preserve the environment.

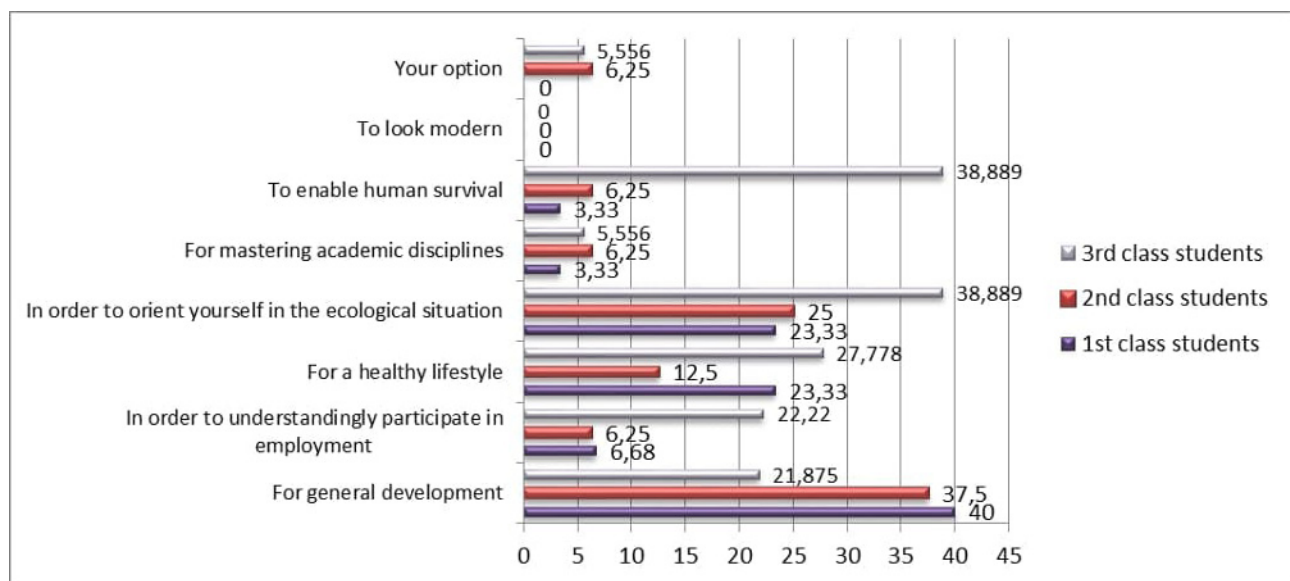


Figure 4. Students' answers to the question about the importance of ecological knowledge for modern man.

4 Results

According to the questionnaire, the awareness of future primary school teachers on ecological issues is fragmentary, undifferentiated. They are better oriented in global ecological issues than in the problems of their locality, region. Some students consider themselves not involved in solving ecological problems. The reason for this attitude is the lack of attention to the development of ecological awareness in the process of training, namely: the ecological component is not included in most training programs; the introduction of the course "Fundamentals of Ecology" is not mandatory for students of most specialties; the study of the subjects of the cycle of professional training is not sufficiently connected with the ecological

problems of modern times at the regional and global levels, their causes; insufficient attention to ecological material during practical and laboratory classes in both natural sciences and humanities.

Humanistic ecological tasks are insufficiently used in the process of professional training of future primary school teachers. No attention is paid to the role of everyone in ecological protection; no skills are developed to study the ecological problems of their area and real environmental activities for ecological protection.

According to the results of the study, the necessary pedagogical conditions for the development of future primary school teachers of ecological awareness identified the following:

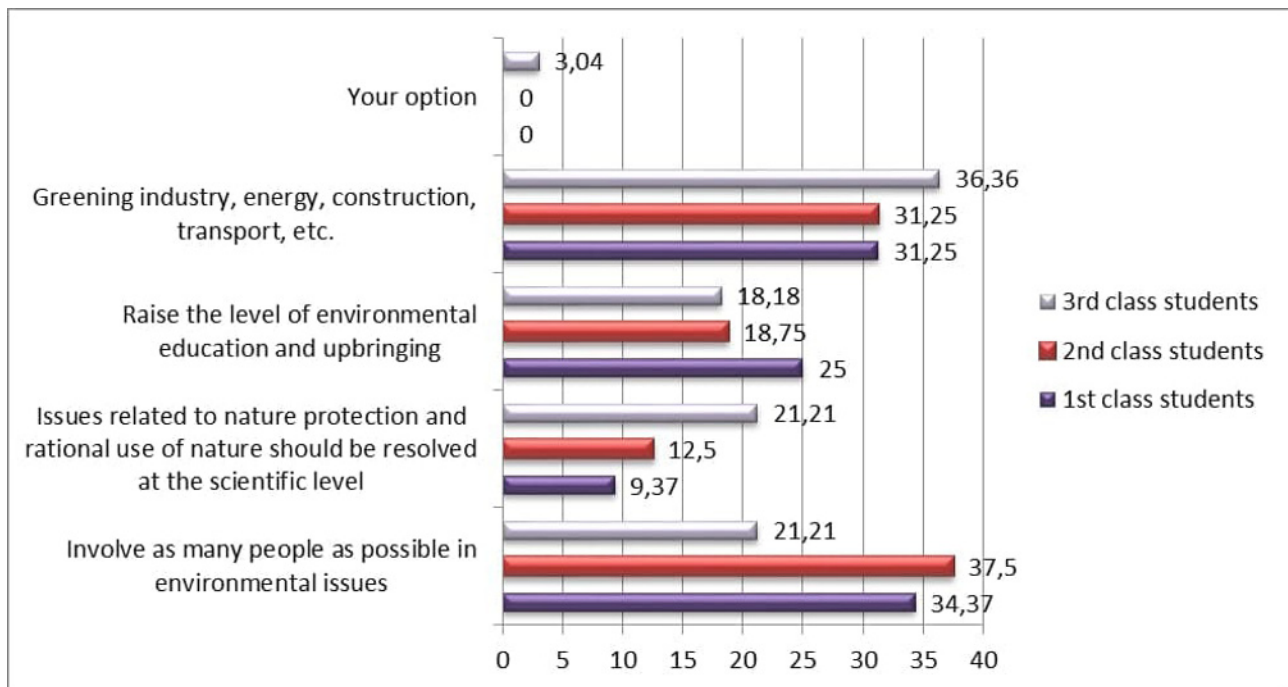


Figure 5. Answers to question about ways to optimize the interaction in the system “man – nature”.

- systematic introduction of ecological material to all training courses for future primary school teachers;
- formation of professional skills and abilities to cover and explain ecological tasks of different levels;
- development of a system of values regarding nature and personal responsibility for the state of the ecological;
- activity approach to the process of development of ecological consciousness of future primary school teachers.

In our opinion, in order to develop the ecological awareness of future primary school teachers, it is necessary to constantly maintain the connection between the ecological, humanitarian and natural sciences components of higher education.

One of the important tasks of higher pedagogical education should be the formation of future primary school teachers of ecological consciousness of the ecocentric type. After all, consciousness determines human behavior, its activities, ecological culture, which, in turn, will lead to the proper level of development of our country. Ecological consciousness forms an active civic position of the future specialist, because the future primary school teacher cannot be indifferent to the ecological (both natural and social) in which he/she exists.

Education should not stop at the stage of simple awareness (learning), but go to the complex and problematic processes of education, purposeful formation of personality. Therefore, it is very important in the pedagogical activities of higher education teachers is the use of such forms and methods of work that would allow, despite the imperfection of educational programs, as much as possible to ensure the formation of students' ecological awareness. At present, the values of life, the search for ways and means of human survival in the face of progressive

deterioration of ecological and social situation come to the fore. “The ecological aspect of the scientific worldview can be nurtured if knowledge of nature and human interaction with the ecological are transformed into personal beliefs, and beliefs are transformed into action” [24, p. 90].

As a result of ecological education and upbringing of future primary school teachers, reliable, theoretically confirmed knowledge of nature and thinking is formed. This is gradually gaining argumentative expression in the knowledge system, which makes it possible to regard ecological knowledge as a means of implementing ecological activities in the professional sphere, is the basis for ensuring the rights of future generations to decent living conditions.

5 Conclusion

The tasks of ecological education and upbringing of future primary school teachers go beyond the study of only theoretical issues. It is important that ecological knowledge is transformed into relevant beliefs. This process also includes the education of moral attitude to nature, including the formation of ecological knowledge, the development of ecological thinking, the ultimate goal of which is to ensure morally perfect and environmentally sound behavior of future primary school teachers, which is one of the conditions of society's transition to sustainable development.

It should be noted that in the process of society's attitude to nature between society and nature there are changes in public consciousness, which reflect the current ecological situation. Ecological consciousness of student youth is realized in relation to the natural ecology, determines the appropriate behavior and activities. In addition, the unity of ecological consciousness and ecological

activity is the basis of ecological culture of the individual. Therefore, the development of ecological awareness of future primary school teachers is one of the priorities of modern education. At the same time, developing ecological awareness, we develop students' ecological competence, which we define as the ability to solve ecological problems in professional activities, personal attitude to the ecology and willingness to be responsible for the consequences of their activities in this ecological.

Further research in this area is related to determining the components of ecological awareness of future primary school teachers, which will require adjusting the syllabi of educational components of bachelor's programs in primary education. Methods and ways to improve the ecological awareness of future primary school teachers also need to be improved.

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