

Training Future Teachers in the Context of Sustainable Development

Marzhan Orazgalievna Iskakova

Moscow State Pedagogical University,
Moscow, Russia

Abstract: The main functions of the environmental education of the future teacher ready to solve numerous environmental management problems, the problems of environmental protection, being able to adapt and to change in the market economy and in the period of transition of the society to the model of sustainable development are defined in the article. According to the concept of sustainable development of modern society the questions of the environmental education and training the future teacher are highly relevant. It is necessary to raise the level of the ecological culture of the future teacher through the effective system of environmental education in the process of vocational training. Environmental education is required to influence the personality directly in the process of the university study, forming spiritual and moral qualities and to prepare the future teacher for conducting educational work in the environmental education of the pupils. Environmental education is required to develop environmental and ethical norms and values, to develop professional skills in the future teacher and to form the way of life that is necessary to ensure the sustainable development of the region. In the environmental training and education of modern society state educational institutions and public organizations take immediate part, their mission is important – to educate and to train for the preservation of the Earth.

Key words: Environmental education • Ecological culture of the teacher • Sustainable environmental education • Ecologized educational environment

INTRODUCTION

At present environmental protection and rational environmental management move to the forefront and are the most important national and interstate tasks, the successful solution of which is inseparably connected with ensuring the high level of the educational training of the specialists in the given area. By rational environmental management we mean the system of activities that ensures the reasonable consumption of natural resources and their further effective production considering perspectives and development. The key factor in the expansion of the rational forms of environmental management states the presence of the territorial [1-4] and especially regional peculiarities.

It is necessary to analyze the genesis of the relationship of the man and nature expressed in the philosophical heritage of V.S.Solovyov who was one the first to write about “the triple relationship of the man to

nature: passive obedience to it in the way it exists, long struggle against it, the conquest of it and using it as an indifferent tool and, at last, establishing its ideal state – the state it should get through the man. Certainly, only the third positive attitude, in which the man uses the superiority over nature not for himself only but also for its improving, should be considered standard and definite”. [5].

“The boomerang effect” and the rules of the American scientist B. Commoner [6] should be recalled here: everything connected with everything; everything should be paid for; nothing passes without leaving a trace; nature knows best.

For Kazakhstan, that is considered to be among the most vulnerable countries according to the UN Rio Declaration 92, nowadays the priority of the environmental safety is one of the highest, without ensuring it the health of the nation and the possibility of survival for future generations will be endangered.

The Aral Sea technogenic disaster, the problems of the Caspian Sea, long-term nuclear tests at the Semipalatinsk polygon, heavy media launches from the Baikonur Cosmodrome, test sites "Kapustin Yar", "Azgir", "Sary-Shagan", the intensive development of oil and gas complex, extractive industry, ecologically unsafe activities of some foreign companies and a lot of other things created a tense environment crisis in the country [7].

In the studies of the Western pedagogues the ecological and the environmental crisis are differentiated and are used in different contexts. The ecological crisis is understood by them as the personal crisis, the cultural crisis, the crisis of consciousness that leads to the environmental crisis [8].

According to the concept of sustainable development of modern society the questions of environmental education and accordingly the formation of the ecological culture of the future teacher are highly relevant.

Environmental training and education are closely connected with the concept of "ecological culture". While studying the phenomenon of the "personal ecological culture" one should pay attention to such basic concepts as "culture" and "ecological". Each of these concepts has a lot of meanings.

The theoretical understanding of culture allows to distinguish two statements important for further analysis of the problem in question: culture is analyzed as a mechanism, regulating the person's behavior and activities and the person as a bearer of this culture.

Ecological culture as well as all culture in general is dialectically connected with social processes occurring today and is caused by the laws of their development. The ecological culture of the teacher as a social phenomenon is directly dependent on the diversity of the social relationships of the person as the real spiritual wealth of the person is totally dependent on the diversity of the real relationships.

Understanding culture as a social phenomenon allows to define one more essential feature characteristic for all its varieties. Ecological culture embraces the area of consciousness and mentality of the person.

Culture is a creative activity of the humankind in all spheres of existence and consciousness both past, reflected in these or those cultural values, present and future, based on the mastering the cultural heritage directed at the transformation of historical wealth into the interactive property of the person.

The analysis of the cultural definitions allows to distinguish the basic principles of ecological culture: firstly, ecological culture is a subsystem of general culture; secondly, ecological culture is both the result and the process of the transformation and improvement of the person.

Thus, ecological culture is an integral part of the spiritual world of the person, that is ecologically oriented consciousness, mentality and behavior, the basis of which includes humanistic value orientations and standards of the relationship with nature.

The basic components of the ecological culture of the person are ecological mentality, ecological consciousness, ecological beliefs, ecological self-consciousness, ecological worldview, ecological activities, the ideal of the relationship of the man with nature. For this reason N.N. Moiseyev believes that the formation of the ecological culture of the person should become an integral part of the activity of the educational system. The researchers of the innovation processes in the system of the continuous pedagogical education consider it one of the tendencies of development [9].

However, only the teacher, being the bearer of ecological culture, can influence the ecological consciousness of pupils. So the conclusion arises that the problem can be solved only when the organization of the vocational training of the teacher regardless the profile will allow to form ecological culture in pupils.

In the ecological culture of the person the system of values is directly expressed connecting it with nature and society and thus illustrating its involvement in the system of global public relations. The formation of the ecological culture of the person contributes to the harmonization of the "man-nature" system [10].

The goal of environmental education and training is to form the noospheric thinking of the person who is able to live in harmony with himself or herself and the environment.

The main tasks of environmental education and upbringing in the system of higher pedagogical education are the formation of ecological mentality; getting deep systematic knowledge and notions about the basis of sustainable development of society and nature; the formation of the skills of multidimensional analysis of environmental problems, a complex approach to ecological tasks solving on the basis of interdisciplinary knowledge from all the areas of modern environmental science; thorough the development of the person including cognitive, creative and emotional

abilities; the development of the student's activities in the area of environmental protection; the psychological and pedagogical preparation of students for the environmental education of the broadest population strata.

The areas of environmental training are as follows: the creation of the multilevel system of higher education and its integration with the training system of highly qualified personal, the creation of the unified methodical complex "the Bachelor degree - the Master degree - the Ph.D. degree" with interconnected programs of environmental education: interdisciplinary, monodisciplinary and multidisciplinary; consistent and systematic ecologization of traditional disciplines of the general education ensuring environmental knowledge sufficient for making responsible decisions and respect for nature; the ecologization of specialized disciplines oriented towards the formation of the ecological style of mentality of a future specialist; the generalization of the existing experience and the development of new ecologized programs; the creation of corresponding program and methodical supply implementing the principle of the interconnection of global, regional and local in the content of environmental education [7].

The peculiarity of environmental education of the future teacher is the unified pedagogical system consisting of two interconnected subsystems:

- Environmental education of students in general;
- The preparation of the future teacher for the environmental education of pupils that does not only prepare them for independent pedagogical activities in the given direction but influences similarly their personal development as well.

The environmental education of the students of the pedagogical university is carried out directly (by influencing the person) and indirectly (through the process of vocational pedagogical training).

Let Us Analyze the Given Subsystems: The environmental education of the future teacher is a unified pedagogical process based on the relationship of the subjects of education and directed at the study of the target, meaningful and process characteristics of education.

The structure of the environmental education of the future teacher corresponds to the structure of pedagogical process in general and environmental education in particular, including target, meaningful, organizational, functioning, evaluative and resulting components.

The second subsystem of the environmental education of the university students includes the preparation of the future teacher for the environmental education of pupils. This training gives the possibility of the indirect mediate influence on the formation of the ecological thinking and beliefs of the student that increases the pedagogical effect of the first subsystem – the environmental education of the future teacher.

The essence of this training as a specially organized and consciously carried out activity of teachers and students is mastering social and pedagogical experience by the future teacher in the environmental education of the growing generation, mastering relevant knowledge and the formation of skills on the basis of active work.

The formation of the readiness of the future teacher for the environmental education of pupils is considered to be the goal of this training.

The basis of the preparation of the student for environmental education includes pedagogical patterns, the definition of which is based on the analysis of the connections existing between the components of the system of the environmental education of the future teacher.

As both the goal and the result of the future teachers training in this direction is the formation of the readiness for the environmental education of pupils, it seems possible to use the ideas of the praxiological activity theory to identify the internal laws of the given subsystem.

Relying on this theory we distinguish the following pedagogical patterns of training students for the environmental education of pupils:

- The level of readiness of the future teacher for the environmental education of pupils depends on the quality of knowledge, sufficiency of its connection with life, practice. Knowledge is an integral component of education in general and vocational education in particular. The process of the preparation of the future teacher for the environmental education of pupils includes providing students with the knowledge of methodological, theoretical, methodical, technological character. The student in the process of study at the university gets the knowledge about the methodological basis of the pedagogical process, its patterns, principles, ways of the analysis and the transformation of the pedagogical environment; about the theory and the methods of educational work and environmental education.

Acquiring knowledge that is relevant to the requirements of society is the basis of the process of vocational and pedagogical training of future teachers. The irrelevance of the acquired knowledge and the peculiarities of modern life make it useless;

- The level of the future teacher readiness for the environmental education of pupils depends on the degree of their involvement in different types of activities. Mastering professional knowledge does not ensure success of pedagogical work. To ensure it, it is necessary to have skills, based on the theory, that are formed only during practical activity.

The more diversified are the activities of the student the more effective is the formation of the necessary skills. That is why the process of the future teacher training for the environmental education of pupils is based on activities of different types, forms and content;

- The effectiveness of the future teacher training for the environmental education of pupils depends on the degree of integration of its elements at all levels, coordination of pedagogical influence at cognitive, emotional and behavioral levels;
- The effectiveness of the future teacher training depends on the diversity of forms and methods of the educational process. The use of different organizational forms, methods of teaching and education contributes to the development of the student's interest to corresponding activities. The interest has positive influence on the volume increase of knowledge, its depth and thoroughness.

The distinguished patterns allow to formulate the principles of the training the students of the pedagogical university for the environmental education of pupils: scientific character, consistency and succession, the connection between theory and practice, the interaction of the general, particular and individual in the content and methods of training, the unity of the educational and developmental results of education, the optimal combination of reproductive and productive activities, the creation of positive emotional background corresponding to the character of the motivational activity. The given principles reflect the pedagogical patterns of training the future teacher for the environmental education of pupils.

The correspondence of the educational content to the requirements of modern society, spirality and

algorithmicity belong to the principles reflecting specific appropriate connections of the preparation of students for the environmental education of pupils.

These principles are caused by the essence and tasks of environmental education in modern conditions and the peculiarities of training students for this direction of educational work.

Defining the principle of relevance of the educational content to the requirements of modern society is caused by changes in all areas of life of society, in the system of education, conceptual approaches to education and upbringing of the growing generation. This principle is realized in the process of mastering by the students the main concepts of modern theory of environmental education, practical skills, the techniques of pedagogical interaction with pupils at the level of professional mastery.

The principle of spirality means the combination of linearity and concentricity principles of writing educational plans and programs and is realized in educational process so that future teachers at first get to know the main principles of environmental education, acquire elementary pedagogical skills and then step-by-step broaden the knowledge on the basis of the interconnected study of the subjects of cultural, psychological and pedagogical cycles, improve pedagogical skills, necessary for the environmental education of pupils.

The principle of algorithmicity presupposes the study by the future teacher of different algorithms of the pedagogical activity relevant to different pedagogical situations. To make it possible in the process of training the lessons are provided where students learn to solve pedagogical tasks with tight and then stochastic algorithms, to role-play the situations with changing conditions that demand the use of stochastic and heuristic algorithms.

The structure of training students for the environmental education of pupils corresponds to the structure of the concept of "readiness for the pedagogical activity" and the general characteristics of the system of the future teacher vocational training and includes several interconnected components, reflecting the types of training: moral and psychological, methodological, theoretical, methodical, technological.

The content of moral and psychological preparation of the future teacher for the environmental education of pupils is defined taking into consideration the essence and the structure of the concept of "moral and

psychological readiness” and includes the formation and the development of the attitude towards ecology, the positive motives of educational activities of the students in the process of training, the main cognitive processes of students, the self-regulation skills of the emotional condition of the future teacher.

The methodological preparation of the future teacher includes providing knowledge of methodological character and presupposes mastering the knowledge that corresponds to four levels of methodology. The first group includes philosophical knowledge, the second one includes general scientific knowledge; the third group consists of specific scientific knowledge; the fourth group includes the knowledge about the methodology and techniques of the pedagogical research.

The theoretical preparation of students for training pupils presupposes mastering the knowledge about the unified pedagogical process.

The methodical preparation of future teachers for the environmental education of pupils presupposes providing them with knowledge about the content, forms, methods and means of the given direction of educational work.

The technological preparation of the students for the educational work at school includes the development of qualities important both for the personality and for the profession as well as skills, methods and techniques of the realization of methodological, theoretical and methodical knowledge.

The effectiveness of the preparation of students for the environmental education of pupils is ensured by the realization of the combined conditions, the definition of the content of which is based on the analysis of the tasks that are set for schools and higher educational institutions by modern society, peculiarities of environmental education in modern conditions and the preparation of future teachers for the given type of work as well as goals of training.

On the basis of it, two groups of pedagogical conditions may be distinguished which contribute to the formation of moral and psychological aspect of the readiness of the future teacher for this type of activity: the combination of different stimuli motivating the students for the active educational and cognitive activity in the process of training; the use of different forms of organization of educational and cognitive activity; the creation of positive emotional atmosphere at the lessons; organic interconnection of the subjects of pedagogical cycle and special disciplines in the process of

preparation; conducting special classes for the development of attentiveness, imagination, speech, skills to manage the emotional state etc.

To the second group belong the conditions contributing to the formation of the scientific aspect of the readiness of future teachers for the environmental education of pupils: the combination of educational, cognitive, practical and independent practical work of students in the process of training; providing the continuity of training before the university and at the university.

Thus, the environmental education of students of the pedagogical university is a multifaceted, dynamic, multistage process, which can be studied from different points of view. The social requirements of society to the system of education today include both the requirements to the ideal type of the person and the tendency toward the international cooperation in establishing the priority of general human values.

Social requirements are greatly influenced by the achievements of modern science which strengthen the unity of the Man and the Universe.

Under the new conditions the goals and the tasks of education, the tasks and the functions of the teacher change significantly and consequently change the basic professional and pedagogical values; the orientation of the professional development and the ideological basis of the person are expressed.

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