

**ORGANIZATION OF SPECIALIZED TRAINING  
AND ENVIRONMENTAL ACTIVITIES OF STUDENTS  
IN EASTERN EUROPEAN COUNTRIES**

**Melnychenko Ruslana<sup>1</sup>  
Sorochynska Oksana<sup>2</sup>**

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**Abstract.** The priority of the secondary education reforms in Ukraine and other Eastern European countries at the turn of the 20<sup>th</sup>–21<sup>st</sup> centuries was the specialized training at the senior level of secondary school. Specialized education is aimed at solving issues of the general level of culture and human education; preparing young people for life in the society and the environment; choosing the further direction of study at the university or professional education system; self-determination in the choice of future profession, sphere of activity.

Nowadays, an important condition of the human civilization existence is the ecocentric-oriented development of the society, when the growth in prosperity of mankind is not accompanied by the destruction of the environment and natural ecosystems. These processes are connected with the formation of an ecological world outlook and culture of the society members. Therefore, involving school-children in active practical environmental and research ecological-naturalistic work is another characteristic feature of the modern education.

*The subject of the study* is the organization of specialized education, environmental and ecological-naturalistic work in educational institutions in Eastern European countries. The methodology of studying the mentioned problems of specialized education and environmental work is based on dialectical and synergetic approaches. The most important philosophical principles of the research are natural philosophy, philosophy of humanism, ecocentrism and sociophilosophy. The general scientific methodology is based

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<sup>1</sup> Candidate of Biological Sciences,  
Associate Professor of the Department of Zoology, Biological Monitoring and Nature Conservation,  
Zhytomyr Ivan Franko State University, Ukraine

<sup>2</sup> Candidate of Pedagogical Sciences,  
Senior Lecturer of the Department of Zoology, Biological Monitoring and Nature Conservation,  
Zhytomyr Ivan Franko State University, Ukraine

on such universal approaches and principles as: systemic, acmeological, axiological, competency based and historical. Leading in the field of psychological and pedagogical research is a personal-activity methodological approach.

It is worth pointing out that schools in Eastern Europe have diverse educational programs and profiles. They are created by a combination of basic compulsory disciplines; enhanced studying of profile subjects; elective special courses and optional courses in accordance with the students' self-determination, their interests, life plans and abilities. In a foreign school, there are general, pre-professional and professional training programs. A common feature of the organization of secondary education abroad is the differentiation of learning by combining internal differentiation (according to abilities, level of mental development, successes in learning) and external differentiation (by interests and professional intentions). The senior school abroad is mostly separated, functioning as an independent type of educational institution. The general trends in the education of Eastern European countries are: compulsory basic 9-year education; differentiation of training at the upper secondary school, which lasts for the most part 3-4 years; separation of general (academic) and professional programs; the gradual expansion of the network and the direction of professional educational institutions.

In the scientific literature the concept of environmental and ecological-naturalistic work is distinguished as a kind of environmental activities. In our opinion, the ecological and naturalistic work of students is a form of cognitive activity, which includes students' mastering knowledge of the environment, gaining experience in solving environmental problems, involving in the organization, implementing environmental and research work, forming an ecological culture of the individual, socially-public experience and skills in various branches of agriculture. A characteristic feature of modern education in the countries of Eastern Europe is the involvement of students in active practical environmental and research ecological and naturalistic work. The increase in their efficiency is due to the use of new practical ecologically oriented educational technologies.

### **1. Introduction**

The current stage of development of Ukraine and other Central and Eastern European countries, their integration into the international economic, political and educational space require the introduction of systemic changes

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in the field of education. One of the priority directions of the Ukrainian school reforms is the transition to a specialized education aimed at realizing social and educational needs, life and professional plans of the students. The mentioned priorities are outlined by the State National Program “Education: Ukraine of the 21st Century” (1994), the Laws of Ukraine “On Education” (1996), “On General Secondary Education” (1999), “On Environmental Educational Concept of Ukraine” (2002), “Concepts of Specialized Education in High School” (2003, 2009, 2013), “On the Basic Principles (Strategy) of the State Environmental Policy of Ukraine for the Period until 2020” (2010), “On Basic guidelines of upbringing of 1-11 forms schoolchildren of secondary educational institutions in Ukraine”(2011), the Concept of the reform of the secondary school “New Ukrainian School” (2016).

Changes in education often depend on the socio-economic level of countries. In the industrialized OECD member countries (the Organization for Economic Cooperation and Development, which includes the USA, Japan, Australia, South Korea, Norway, Sweden and most developed countries of the European Union), this process has started long ago. Modernization of education in these countries has a fast, well-studied character. Instead, in the post-Soviet republics and other Eastern European countries, fundamental reforms in the educational sector have just begun and these aspects remain inadequately studied.

In addition, the growth of population, natural resources depletion, energy difficulties, waste disposal problems, the degradation of the natural ecosystems functioning and other factors have led to the need for radical rethinking and harmonization of relations in the system “nature – man – society”. Today, an important condition for the existence of human civilization is the ecocentric-oriented development of society, in which the mankind welfare growth is not accompanied by the destruction of the environment and natural ecosystems. These processes are impossible without the formation of the ecological world outlook, culture and ecological competence of members of society, which are formed in the process of environmental education and upbringing of the younger generation. Therefore, the involvement of students in the active practical environmental and research ecological-naturalistic work is another characteristic feature of the modern education.

*The aim of the research* is to carry out a comparative analysis of the specialized training organization, environmental, ecological and naturalistic work in educational institutions of Ukraine and other Eastern European

countries. The objectives of the study are the following: the implementation of content analysis of categorical research apparatus; clarification of the basic concepts essence of “specialized training”, “environmental activities”, “ecological and naturalistic work”; outline and generalization of the content, structure, tasks, principles, forms and methods of their implementation in educational institutions in Ukraine and the countries of Eastern Europe.

## **2. Survey methodology**

Problems of specialized training organization, realization of environmental and ecological-naturalistic work; the preparation of pedagogical staff for their implementation in educational institutions requires comprehensive research at different levels of the methodology of scientific knowledge. Scientists consider the methodology as a conceptual statement of aim, content, research methods that provide the most objective, accurate, systematic information about processes and phenomena. The methodology is a scientific basis for explaining pedagogical phenomena and processes; introduction of the acquired knowledge into the practice of upbringing, training, education and human development [2, p. 9]. Most researchers note that the methodology of pedagogical science is multilevel and systematic. There are several levels of scientific research: 1) philosophical (fundamental); 2) general scientific; 3) specific-scientific (pedagogical); 4) a system of concrete methods and technologies [1, p. 15-48; 2, p. 193].

The philosophical methodology of studying the specialized training problem is based on the dialectical approach, the principles of development, the contradiction, the general connection of various external and internal factors of the problem under study. The most important philosophical principles of the study of specialized training are natural philosophy, philosophy of humanism, ecocentricism and sociophilosophy.

In recent decades, a synergetic approach is becoming increasingly significant in the basis of the methodology of the humanities, in particular, sociology, psychology and pedagogy. Synergetics is an interdisciplinary direction, which aims to learn the general principles of systems self-organization of different character – physical, chemical, biological, social; the theory of self-organization of chaotic processes and phenomena, of separate components of the whole [2]. This direction is the leading one in pedagogical researches of O. Vozniuk, V. Lutai, B. Preobrazhenskyi, G. Haken and others. After all, the modern system of education organization is multivar-

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iate, multidimensional, aimed at stimulating the right choice of the student of his educational trajectory, the professional and social future.

The general scientific methodology is based on universal approaches and principles for all sciences, among which scientists most often distinguish systemic, acmeological, axiological, competency based and historical. Systematic approach is the most common in modern scientific researches. From its point of view, training and education are considered as a system of interacting and interconnected components that has a certain hierarchy, integrity, plurality, multilevel, and their own components that are interconnected.

Most scientists consider personal and activity approaches as the leading methodological ones of psychological and pedagogical research, which are often combined in such a concept as a person-activity approach. It involves not just assimilation of new knowledge, but mastering the ways of this assimilation, creating situations that stimulate students to make their own discoveries. The use of personal and activity approaches allows taking into account the individual age-psychological peculiarities, interests, inclinations, attitudes, abilities and needs of students in order to create conditions for their development and self-realization in various activities [29, p. 154].

Thus, the interrelation of isolated scientific approaches ensures the effective organization of specialized training and environmental work in school educational institutions.

The source of our research is the study of laws, projects, concepts, statistical reports and other valid normative acts of the higher authorities of some Eastern European countries; official sites of the Education Ministries of Ukraine, Belarus, the Czech Republic, Slovakia, Poland, etc.; monograph and thesis research in the field of comparative pedagogy; scientific and educational literature, domestic and foreign periodicals. A special role has been played by The Network of Institutes and Schools of Public Administrations in Central and Eastern Europe (NISPAcee) and the SIGMA (Support for Improvement and Management in the General and Eastern European Countries) programs.

### **3. Specialized training as a scientific problem**

In the last decade, specialized training has become an important component of the education modernization in Ukraine and other eastern European countries, the main direction of reforming secondary education.

There are many approaches to understanding and defining the concept of “*specialized training*” today. Analysis of scientific articles, monographs,

abstracts of dissertations, methodological, pedagogical literature, normative state legislative documents (total 52 sources), allowed to highlight the essential features of this concept. To do this, we use a method of content analysis, on the basis of which we formulate the following concept definition of specialized training. Specialized training is a kind of differentiated, personally oriented education at the senior level of secondary education, which ensures maximum consideration of the interests, abilities and aptitudes of students, their professional, life and educational intentions through changes in the structure, content and organization of the educational process.

Specialized education has two groups of *goals*. The first of them is aimed at solving the issues of the general level of culture and education of the person, preparation of young people for life in the society and the environment. The second one also ensures the principles formation of the continuous professional training of students – the choice of further direction of education in a higher educational institution or system of professional education, self-determination while choosing profession, sphere of activity [10; 11; 18, p. 28].

Specialized training is based on a number of *principles*: social equilibrium; succession and continuity between pre-specialized training, specialized training and professional training; variability and flexibility; differentiation and individualization of education; diagnostic and predictive realization [10; 11; 15; 32].

There are various directions and education profiles. They are created by combining the *variant* and *invariant components* of typical curricula. At the same time there is a combination of basic compulsory subjects, disciplines, specialized subjects, which are well studied (variant part of the curriculum) with elective special courses, electives according to the students' self-determination, their interests, life plans, abilities. A profile of education forms secondary educational institutions depending on the production infrastructure of the region; personnel, material, informational, teaching and learning resources of the school, as well as taking into account the abilities, interests and wishes of students and parents.

#### **4. Comparative analysis of specialized training organization in Eastern European countries**

Mechanisms, ways and content of differentiation of learning, professional self-determination of students are topical issues not only for Ukraine. This is a global trend of education. The senior comprehensive school has a

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complex structure, characterized by a variety of educational tasks, organizational models, large volume and scientific richness of educational material.

Undoubtedly, each country has its own pedagogical experience, its traditions of building an educational system, organizing educational activities, due to national, cultural, geopolitical and social peculiarities. However, the analysis of foreign experience contributes to a deeper understanding of their own problems, correction of calculations and errors, the realization of all possibilities of the domestic system of education. That is why, in recent years, comparative studies, the branch of comparative pedagogy, which deals with the analysis of the organization of the educational process in different countries, has become important. The leading role in this field is played by researchers of the Laboratory of Comparative Pedagogics of the Institute of Pedagogy of the National Academy of Pedagogical Sciences of Ukraine under the direction of O. Lokshyna, devoted mainly to the analysis of the organization and content of education in the United States and Western European countries [16]. Nevertheless, it is rather significant to study the experience of educational policy of the Eastern European countries (the Czech Republic, Slovakia, Poland, Belarus, Lithuania, Latvia, Estonia, etc.), with which Ukraine has close geopolitical, historical and cultural ties.

The formation, development and reforms of the structure of Polish education are the subject of scientific research by A. Gaidzits [6], T. Levovytskyi [14], S. Mieshalskyi [20], Y. Moos [23], V. Pavlenko [25] and others. L. Fira with co-authors [5], L. Pasechnikova [24] studied the Czech education system. In addition, a number of statistical materials, projects, explanations, normative acts of government bodies are found on the official websites of Education Ministries of different countries [3; 13; 21; 28].

In most economically developed countries there is the International Standard Classification of Education (ISCED), the initial classification of which is an educational program. Educational programs are classified according to the levels (from 0 to 8) and branches of education [17, p. 62]. According to another classification, according to the degree of focus on obtaining professional qualifications, foreign schools distinguish general, pre-professional and professional programs [9, p. 19-20; 17].

The general tendency of organizing secondary education abroad is a combination of *internal level differentiation* (by abilities, level of mental development, IQ test, etc.) and *external differentiation* (by interests and professional intentions, through in-depth study of a number of subjects

and training courses). In many European countries active research on the problem of talented children continues; programs for the search, selection, development, organization of learning gifted students are maintained [1, p. 26-127].

The senior school abroad is mostly separated from the basic school; it functions as an independent kind of educational institution. There differentiated learning can be based mainly on two principles according to a meaningful approach (or combine both): 1) *integration* – the organization of training takes place in different directions and profiles in a single school structure through the introduction of different courses, curricula, departments, sections, modules of training; 2) *segregation* – the organization of training in different types of schools specializing in the introduction of certain academic or professional learning curriculum.

Differentiated learning at a senior foreign school can be constructed according to two models: 1) *flexible*, elective, which involves the free choice of subjects among a number of compulsory subjects; 2) *inflexible*, selective, in which the choice of one or another direction of study is carried out according to clearly de-fined educational programs [16; 26]. The second type prevails in Eastern Europe.

Differentiation of training implies the existence of various options, profiles, and directions of training. However, in the opinion of the teachers-comparativists, they can be reduced into two: 1) *academic*, which prepares students for higher education; 2) *professional* and *technical*, which is aimed either at entering the labor market, or getting further technical education [16].

The main trends in the progress of educational content in developed countries are: standardization; humanization; enriching with new scientific achievements and modernization; optimization of the relation between social and humanitarian and natural-mathematical components; adaptation to the needs of a multi-ethnic and multicultural society [16].

It should be noted that in most European countries the students' age of graduation from high school is 18-19, and sometimes 20 (except Spain, Hungary, where they complete their studies at the age of 16-17). The percentage of students who choose this level of education, without stopping at grade 2, differs from country to country. Only 65% of 17-year-olds study at high school in Greece, 70% to 80% in the UK. At the same time, in Finland, the Czech Republic, Belgium, this figure is 95 – 100% [16].



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Among the countries of Eastern Europe, Poland experienced significant changes. In 1999, there was a serious educational reform, which was aimed at improving the quality of education; increase in the number of Poles with secondary and higher education; formation of pupils' skills of self-education; improving their social and professional adaptation; competence in the field of information technology and knowledge of foreign languages. Among the important changes should be noted: the introduction of compulsory education up to 16 years; providing final examinations of diagnostic, prognostic, professional orientation function; the restructuring of professional education and the introduction of specialized training [6; 7; 14; 25]. The reform was implemented in stages by the Education Ministry of Poland (Ministerstwo Edukacji Narodowej) [25, p. 55–58]. Initially, the 6-year elementary school (*szkoła podstawowa*) and the 3-year gymnasium (*gimnazjum*) began to function. In September 2002, a number of schools of post-gymnasium type (*szkoly ponangimnazjalne*) were founded – basic professional schools, general and specialized lyceums, technical schools where students were trained during 2-4 years. The differentiation of the content of secondary education in Poland takes place at the last degree of education through the operation of three-year lyceums of several types:

1) General or academic lyceums (*liceum ogólnokształcące*), which provide good preparation for students from leading subjects and specialized disciplines studied in depth. There are humanitarian, biological and chemical, physical and mathematical and basic secondary education lyceums [7]. After graduating from the lyceum, students pass final matriculation exam (*matura*), which at the same time is the admission to higher educational institutions in the country [23; 25].

2) Profession-oriented lyceums (*liceum profilowane*) – institutions of the high secondary education, aimed at not only providing students with general education, but also creating the conditions for further professional education and entrepreneurial activity. The training is carried out mainly in four areas: economic and social (21%), techno-technological (17%), artistic (9%) and agricultural (6% of specialized educational institutions). Moreover, each of them has its own profiles, and there are a lot of them at Polish lyceums: electronics, electromechanics and electrical engineering, clothing design, environmental work, forestry, wood processing, services, business, etc. [7]. After graduating from the profession-oriented lyceum, the graduate

can receive professional qualifications within 0.5-1.5 years or pass the certification exams and receive higher education.

There is also a professional secondary education that provides the graduate with a speciality and the ability to skilled work. It is implemented in institutions of two types:

1) technical school (*technikum*) – institutions of professional secondary education, which, along with general education and the opportunity to pass exams for admission to the university, teach the profession for 4 years.

2) Two-year professional schools (*szkoły zawodowe*) – institutions of professional secondary education that provide young people with access to the labor market by providing qualifications in a particular profession (shop-assistant, gardener, hairdresser, car mechanic, chef, etc.). Graduates of these schools, however, can also get a maturity certificate after an additional 2-year education in a lyceum or three years in a college [6; 7; 23; 25].

However, in the opinion of government officials and ordinary Poles, the re-forms of 1999 have not fulfilled their functions. Expectations from the introduction of gymnasiums as independent schools of a new type have not been justified, due to unfinished reform of lyceums, demographic and financial problems, professional schools of no prestige [6; 14; 20]. That is why, since September 1, 2017, a new educational reform has started in Poland [3]. The most important changes in Polish education are: compulsory education from 7 to 18 years old; the introduction of a 8-year elementary school (*szkoła podstawowa*); abolition of gymnasium education; increase in the length of education at the upper secondary level; strengthening the professional orientation of education. After the end of the 8-year school, a student can continue education in the institutions of the academic (general education lyceum) or the professional direction (technical school, branch schools), and all of them give the right to take the certification exams (*matura*).

That is, since 2017, the following institutions have been operating in the upper secondary school of Poland: a 4-year secondary school (*liceum ogólnokształcące*), where basic subjects are studied and there are 4-7 hours for studying subjects at an expanded course; 5-year technical school, mainly economic or technical, 2nd and 3rd year branch schools of the 1st and 2nd grades (*3-letnią branżową szkołę I stopnia, 2-letnią branżową z szkołą II stopnia*).

In 2001, the Government of the Czech Republic approved an order of the national program of the education development in the country, the so-called

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“White Book”. It has become an integral part of the strategic planning of the socio-economic development of the Czech Republic, in which education and human resources development were considered as priority areas [13]. The basic compulsory secondary education in the Czech Republic is acquired by pupils aged 6 to 15 at the 9th year of school (*základní škola*), which consists of two levels – elementary (5 years) and incomplete secondary (4 years). Higher secondary education in the Czech Republic receives more than 93% of the population, that is, the entire period of schooling lasts 13 years, and ends with its Czech youth at the age of 19. There is a daytime, evening, part-time and combined forms of higher secondary education, academic (general education) and professional education.

Many Czech students study in gymnasias (*sekundární vzdělání*), where they receive a thorough academic education with the possibility of entering the university after completing final graduate exams for full-time secondary education (*maturita*). Moreover, there are private and public gymnasium, as well as 4-, 6- and 8-year. That is, pupils can get gymnasium education after the 5th, 7th or 9th grade of the basic school depending on their academic abilities, on the basis of entrance examinations in 2-4 subjects. Differentiation of education is carried out by combining compulsory (specialized and basic) and selective (optional) subjects. There are also specialized schools (artistic, sports, with in-depth study of foreign languages).

In addition, after the basic school in the Czech Republic, you can continue to study in professional institutions that are quite popular, because apart from full secondary education, they also give a professional qualification or speciality [5; 13; 24]. These are: 1) conservatory (6-8 years of study); 2) secondary technical schools offering training in universities and obtaining a technical speciality; 3) secondary professional schools, which provide qualification in many fields (business, pedagogy, industry, forestry, hairdressing, landscape design, health care, agriculture, veterinary medicine, winemaking, etc.). There are two-year programs with the further development of the profession at the workplace and 4-year programs, which combine theory and practice throughout the period [5; 13; 24].

A similar educational system operates in Slovakia. Training lasts 13 years. There is a compulsory elementary 9-year school of 2 degrees (4 + 5 years). Differentiation of education is carried out by teaching subjects at various levels of complexity and supplemented by a system of elective subjects (up to 35% of academic time); Students undergo psychological testing,

which helps to make further educational and professional choices. From 15 to 19, adolescents can continue their studies in high school, gymnasium (according to examination results) or professional specialized schools [4].

In post-Soviet republics – Belarus, Ukraine, Russia, the duration of studies at secondary education establishments is 11 years old, the youth finish school at 17-18. The general education direction is singled out, with separate elements of differentiation and profiling of the study (by studying some subjects at an advanced level) and professional secondary education.

In particular, there is three-level secondary education in Belarus: primary (grades 1-4), general basic (5-9 grades) and general secondary education (grades 10-11). Elements of specialized education are implemented through the study of certain subjects at an advanced level. And there can be formed either relatively homogeneous classes (the same subjects at advanced level for all students), and heterogeneous (different combination of subjects of basic and advanced levels for different students). By enrollment on a competitive basis, there is training at high schools, gymnasium-boarding schools, gymnasia-colleges of arts (from 5th grade) and lyceums (from the 10th form). In addition, Belarus has a system of professional education (412 qualifications, about 30 thousand specialities in professional schools and colleges) and secondary specialized education (about 170 specialities). In general, in 2016-2017 64.9% of Belarusian schoolchildren continued their education in secondary education, 16.7% – in professional educational institutions, 17.8% – in institutions of special secondary education, mainly colleges, branches of higher education establishments [21].

Education in Ukraine has repeatedly undergone reformation over the years of its independence. One of the key areas for educational change was the introduction of specialized education at the upper secondary school (10-11 grades) by combining invariant basic and profile subjects with selective (elective courses, electives) in 2003 [10]. Today, specialization of training is carried out mainly in grades 10-11 (sometimes from grades 8-9) in natural and mathematical, social and humanitarian, philological, sports, technological areas, within which a lot of teaching profiles are selected, which are selected and formed by educational institution. In fact, nowadays there are various forms of specialized education realization: specialized senior classes in multi- and single-level educational institutions; classes with in-depth study of subjects at primary school; specialized boarding schools; profile groups in intercity primary schools; educational complexes;

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educational institutions of a new type – lyceums, colleges, gymnasia, etc. [11]. In addition, there is a network of professional educational institutions: professional schools and colleges. In 2017, the website of the Education Ministry and Science of Ukraine approved the standards of professional education of 62 specialities.

However, starting from 2018, first-graders will study for 12 years. Gradually, the structure of education [12] will change. Thus, full secondary education will have three stages: 1) elementary school with duration of training 4 years; 2) basic secondary education – 5 study years, which will be carried out in gymnasia; 3) specialized secondary education – 3 study years. At the end of the 9-year school, the children will pass final exams, which can be used to choose two courses of study at the third level of secondary school – academic or professional. Academic orientation will take place with in-depth study of individual subjects in academic lyceums – individual educational institutions. Both the content of the curriculum and the level of complexity of its study can be chosen. The professional orientation will be realized through a network of professional lyceums and colleges. Students will be able not only to receive general education, but also a profession. It should be noted that graduates of the lyceums of both orientations after completing secondary education will complete the state final certification in the form of external independent assessment. In the case they pass it successful, they will have the right to enter the university [12, p. 20-23].

Thus, the general trends in the education of Eastern European countries are: compulsory basic 9-year education; differentiation of training at the upper secondary school, which lasts for the most part 3-4 years; selection of general (academic) and professional directions; the gradual expansion of the network and the orientation of professional educational institutions.

### **5. Organization of environmental work in schools in Eastern European countries**

In scientific literature, the concept of *environmental work* is distinguished as a kind of environmental activity. A retrospective analysis of the source base shows that the issue of nature conservation has passed the stages in its development from its understanding as a complex of measures aimed at preserving certain natural areas intact (1913), to the awareness of the need for rational use, reproduction of all natural resources, protection of the environment in general, from pollution and destruction, conserva-

tion of objects and phenomena of nature (mid-20<sup>th</sup> century.). Environmental protection work is carried out on the basis of a combination of natural and environmental knowledge, emotional and value attitude to the environment, established norms and rules of environmentally adversarial behavior, practical skills and abilities of the individual [8]. Also scientists distinguish such form of work as ecological and naturalistic, which has become more widely distributed in schools and out-of-school educational institutions.

In our opinion, the *ecological* and *naturalistic work* of students is a form of cognitive activity that involves mastering the students' knowledge of the environment, gaining experience in solving environmental problems, involvement in organizations, implementing environmental conservation and research activities, shaping the ecological culture of the individual, socially -public experience and skills in various branches of agriculture (floriculture, forestry, horticulture, mushroom growing, beekeeping) [29].

The aggravation of contradictions between the consequences of human activities and the state of the environment, as well as the need for the formation of environmentally competent young people, led us to more detailed study of the peculiarities of the organization of nature conservation, ecological and naturalistic work in Ukraine and Eastern European countries.

Several models of the organization of environmental education and environmental work are currently distinguished in foreign countries, in particular: *epistemological* (Eastern European countries), *epistemological-activity* (countries of Western Europe), *cognitive-value* (Asian countries: Japan, China, Korea, Thailand); *informational-personal* (Great Britain); *abstract-declarative* (post-Soviet countries); *educational-ecological* (Scandinavian countries) [27, p. 169].

The epistemological model of the organization of environmental education and environmental work of students is widespread in Eastern European countries, in particular, Poland, Romania, Belarus, and others. Its purpose is to form a system of scientific knowledge, views and beliefs that ensure a responsible attitude of the person to the natural environment. In this regard, the content of environmental education and environmental work is formed in the areas of environmentalization, humanization and is based on an interdisciplinary approach. The abstract-declarative model is common in post-Soviet countries. The main features of this model are: the discrepancy of the environmental situation with the capabilities and efforts of society; universality and abstractness of intentions; lack of a specific addressee;

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orientation towards false concepts or outdated knowledge; mismatch of purpose and means. However, a significant number of scholars tend to think about the imperfection of these models. Therefore, in most developed countries of Western Europe (Germany, France, Belgium, the Netherlands) they adhere to an epistemological model of environmental education, which, in addition to cognitive activity, includes elements of practical work aimed at protecting the environment [27; 33].

In foreign pedagogy, the idea of continuity, the succession of environmental education and the upbringing of the younger generation and the environmentalization of the learning environment (the state of the school building, the grounds around the school) in terms of its protection is widely implemented. This leads to the inclusion of nature protection subjects in the curricula [31].

In particular, in Poland in the 70's of the 20<sup>th</sup> century special subjects were introduced: "Nature Conservation", "Society – Natural Environment", in the process of studying which students received knowledge on the use of natural resources, the role of man in the environment, and also developed communication skills with nature. The Academy of Sciences in Poland published a methodological manual "The Nature Conservation Guide" [22, p. 27].

Polish teachers are trying to conduct studying of ecological disciplines outside the school rooms. Common lessons are in the objects of the nature reserve fund and local parks. Mastering the basic research skills, the Polish schoolchildren participate in the assessment of the state of the environment within the framework of the project "School education for the future of the Earth". They take samples to determine the level of pollution of the air, water and soil in the local forest, near the highway, railways, landfills [19, p. 214].

In Poland, interactive methods using computer training programs are actively employed: "Earth day games" (which allows you to trace the life cycle of the animal and its relationship with other species); "The adventure of vermin the worm" (involves mastering waste management strategies, recycling basics, biohumus formation in a school garden). The series of games "My American farm" acquaints them with technical devices of soil treatment, creation of protective forest bands along the river [19, p. 215].

Since 1993, Belarusian students take an active part in long-term research projects "My native land" and "Brestchina My Best". Their purpose is to

form a love and careful attitude towards nature in the younger generation; studying protected areas of Brest region; mastering practical skills and skills in field conditions, etc. Since 2004, under the guidance of scientific staff, Belarusian students study the flora and fauna of the National Park “Belovezhskaya Pushcha”, in particular the Red Book species [34].

In the schools of Bulgaria, environmental issues are included in the content of individual educational disciplines, in particular, “Motherland Studies”, “Natural History”, “Geography”, “Chemistry”, “Physics” [31]. As from the 80's and 90's, the Green Patrol teams have become very popular in Bulgaria, helping state bodies to restore and preserve nature. For the improvement of environmental education and environmental work in the educational institutions, the following forms of work are used: meetings and conversations with known ecologists, independent environmental observations, individual reports, lectures, diaries, exhibitions, creative studios, circles, excursions, expeditions, camps and detachments, students' forestry and hunting farms, brigades, clubs, labor actions [22, p. 28].

An analysis of the organization of nature conservation work in Eastern Europe has shown the diversity of the forms of work used. Increasing the effectiveness of environmental work among young people mostly leads to a departure from traditional methods of learning and use of relatively new (elements of play, games, dance flash mobs) [30]. For example, in the schools of Slovakia, environmental (eco-educational) trainings that promote the creation of the microcosm (“problems in miniature”), where the problem solving occurs almost in reality, have become widespread. In addition, during the training work, Slovak teachers use the “hands – head – heart” principle, the essence of which is that “hands” are what you can do (make), “head” is the knowledge and experience acquired, “heart” is the feelings that accompany the training process. During environmental training, students learn to use their own knowledge and actively share their experiences with others. Training courses in Slovakia are aimed at developing a route and story on the environmental track, writing a press release to the media, familiarizing with environmental ethics. Participants of ecological trainings receive a certificate, for example, “Forest Guides” according to the results of the final tests [30].

Consequently, a comparative analysis of the organization of environmental activities of students in Eastern European countries has shown that it is carried out in various forms. However, in the Ukrainian educational



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system, more attention should be paid to innovative forms and methods of work that contribute to the students' independent thinking and finding solutions to problems of nature conservation.

### 6. Conclusions

An important area of modernization of the secondary education of the Eastern European countries at the turn of the 20<sup>th</sup>–21<sup>st</sup> centuries was specialized education. Specialized education is aimed at solving issues of the general level of culture and human education; preparing young people for life in the society and the environment; self-determination in the choice of profession, field of activity. The general tendency of organizing secondary education abroad is a combination of internal differentiation (on the abilities, successes in learning, level of mental development) and external differentiation (by interests and professional intentions, through in-depth study of a number of subjects and training courses). The senior school abroad is mainly separated from the main school, it functions as an independent kind of educational institution. The general trends in the education of Eastern European countries are: compulsory basic education; differentiation of education at the upper secondary school; selection of general (academic) and professional directions; gradual expansion of the network of professional educational institutions.

Another characteristic feature of the modern education is the involvement of students in active practical conservation and research ecological-naturalistic work. Increasing the effectiveness of environmental work among young people in Eastern European countries results in the use of new, practical, environmentally-friendly educational technologies.

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