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**THE ROLE OF ENVIROMENTAL EDUCATION IN PROFESSIONAL TRAINING OF SPECIALISTS (CONCEPT OF SUSTAINABLE HUMAN DEVELOPMENT)**

**РОЛЬ ЕКОЛОГІЧНОЇ ОСВІТИ У ПРОФЕСІЙНІЙ ПІДГОТОВЦІ ФАХІВЦІВ (КОНЦЕПЦІЯ СТАЛОГО РОЗВИТКУ ЛЮДСТВА)**

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**ABSTRACT**

*The role of ecological education in the formation of sustainable development of society was investigated. Ecological problem is not only environmental but as well social and economic. Sustainable development requires an integrated approach between the economy and the environment. The current research is focused on the lack of well qualified specialists in the area of environmental safety. Considering the situation today, it is critically important to provide additional support for environmental-oriented institutions and organizations. Necessary actions are discussed and explored.*

*In countries where environmental culture is at a high level, is under constant state control and is placed in the rank of state policy, the population is much less exposed to stressful situations than in regions with weak environmental control. With a closer connection between society and nature, the development of skills to actively and purposefully use environmental knowledge is the most important task of environmental education. This task is faced by all levels of education and should be solved directly by society.*

*Environmental education, within the framework of education, contributes to a new human view of the environment, in particular, the integrity of the natural and artificial, combining the knowledge of natural and social sciences about the environment as the only and necessary living space of man, which can be preserved and multiplied with the systematic development of science and technology. However, environmental education can improve the quality of life of a person in a particular environment.*

*The author notes that environmental education and upbringing are psychological and pedagogical processes that form students' knowledge of the scientific foundations of nature management, imperative beliefs and practical skills, a certain orientation, an active life position on the protection, conservation and multiplication of territories of natural resources and culture is relevant in accordance with the modern scale of environmental changes that pose a real threat to human life.*

**Key words:** vocational training, future specialists, firm development, anthropogenic contamination, ecological formation.

**Relevance of the topic.** Due to the military events in the country the problem of providing high-quality and clean water resources for the needs of public utilities and agriculture, industry and other branches of human activity has extremely aggravated. There is a decrease of water supply in the vast majority of Ukraine's regions and the quality of drinking water is rather low. At the same time, water resources are used irrationally. The protection of surface and underground water sources is poorly organized. Therefore, the concentration of some pollutants in many rivers, lakes and other water bodies often exceeds the maximum permissible standards by tens and hundreds of times. The amount of pollutants entering the atmosphere from stationary sources is currently decreasing, while the amount of pollution from motor vehicles is increasing rapidly. Over the last 5-6 years it has become the largest environmental polluter in Kyiv, Transcarpathian and some other regions. Moreover, its contribution to total emissions into the atmosphere is constantly growing.

**Formulation of the goals (purpose) of the article, statement of the task.** The purpose of the article is to consider the importance of environmental education in the professional training of specialists.

**Analysis of the latest research and publications.** G.O. Bilyavsky, R.S. Furduy, I.Y. Kostikov, O.M. Chabanyuk, I.V. Bolyak devoted their works to the problems of ecology. The main causes of environmental pollution, first of all air pollution, are resource- and energy-intensive, outdated technological and environmental equipment, and, in some cases, the lack of treatment facilities and effective control of the activities of environmentally hazardous enterprises, as well as poor technological discipline. The implementation of environmental protection measures in Ukraine is negatively affected by the fact that economic instruments and levers to encourage enterprises, associations and firms to introduce environmentally safe, resource- and energy-saving technologies, new-generation treatment equipment, setting up normal treatment facilities, etc. are still not functioning properly (H.O. Biliavskyi, R.S. Furdui, 2018).

**Presentation of the main material of the research with full justification scientific results obtained.** The study of the dynamics of morbidity of the Ukrainian population, the most important demographic indicators for the last 20-25 years gives

grounds to assert: the negative impact of various environmental factors on human health is complex. Moreover, this influence tends to intensify and diversify, which must be taken into account when it comes to the negative environmental and social consequences of pollution and degradation of nature in general, in particular, of soils, water bodies, atmospheric air and food.

As a result of the deterioration of demographic indicators, first of all, a decrease in the growth rate and an increase in the level of morbidity, the population is ageing and temporarily loses the ability to work, and the costs of medical care are increasing. This significantly weakens the labour potential of the state. All this has a negative impact on reproductive processes both in the economy and in society.

It is not difficult to conclude that the ecological problem is not so much an environmental problem as a socio-economic one. After all, we are talking about normal living conditions and human health. Therefore, it is necessary to take decisive and urgent measures at all levels of management – national, regional and local. The global resource-ecological problem should be solved by each state depending on its natural, environmental and socio-economic peculiarities. (Sydorenko L.I, 2022).

Since the late 50s of the last century, scientists, politicians and public figures from many countries of the world have begun to realize that the demographic and socio-economic development of almost all countries, the ability of the Earth's biosphere to maintain ecological balance and provide an ever-increasing amount of life resources will run out. The necessity of a radical paradigm shift in the development of the terrestrial civilisation has become obvious. Otherwise, neither ecological and environmental measures, even complex ones, nor large-scale technical and technological innovations and strict economic mechanisms for regulating resource and environmental processes can ensure the normal functioning of the biosphere and its most important component – human society.

After all, sustainable socio-economic development of any country means functioning of its national economic complex and some conditions should be provided: meeting the growing material and spiritual needs of the population; rational and ecologically safe management and highly efficient use of natural resources; maintaining natural and ecological conditions, preserving, reproducing and increasing the quality of the environment and the natural resource potential of social production. In other words, sustainable development is economic growth that effectively solves the most important problems of life support of society without depletion, degradation and pollution of the environment.

It is difficult to agree with the researchers who believe that sustainable development is possible only for the entire earth civilisation for all countries together and at the same time. Individual countries, continents and territories are integral parts, peculiar subsystems of the Earth's biosphere and it is considered the only integral global system. However, it does not mean that they cannot solve the problem of sustainable development alone. They can and they should. Since, different countries, continents and territories have different levels of socio-economic and technical-technological development, anthropotechnogenic impact on the environment, use of natural resources and their pollution, etc.

As for Ukraine, the prospects for the implementing of the principles of sustainable development cannot be considered in isolation from the market reforms in the country. The transition to sustainable development of both the country and its

individual regions should take place in close interrelation with radical structural and technical-technological reorganisation of social production on the basis of accelerating rates of scientific and technological progress, in particular in the direction of comprehensive ecologisation not only of the basic sectors of the economy, but also of all spheres of human activity especially in the sphere of vocational education. All this things should be taken into account while creating training plans for future specialists.

The most important prerequisites for Ukraine's transition to a sustainable development model at the national and regional levels include:

- efficient and environmentally friendly functioning of the economy, which will allow achieving higher living standards of the population, the possibility of acquiring good education, including ecological education, solving social and resource-professional problems of society development;

- rational use, conservation and reproduction of natural resources, environmental protection as the main prerequisites for ensuring resource and ecological safety of present and future generations, maintaining ecological balance in the biosphere and, consequently, a clean and healthy environment;

- stabilization of the demographic situation and the number of population, the establishment of the principles of social justice in society that is the creation of a system of legal guarantees and an effective demographic policy to achieve the economic, social and ecological well-being of each family;

- expanding the scope of international cooperation in the sphere of effective solution of resource and environmental problems and tasks of sustainable development, increasing its effectiveness and efficiency, applying the latest world achievements of scientific, technological and socio-ecological progress in the national economy.

The necessity to overcome the acute resource-ecological crisis, to improve the environment and eliminate the causes of ecological disasters requires cardinal improvement of vocational education in all spheres of education.

On the other hand, Ukraine is in need of large-scale reconstruction and modernisation of the entire outdated and backward material and technical base for training specialists to operate in society. Harmonisation of all activities should be based on the environmentally safe technologies, non-waste or low-waste closed production cycles that allow for the integrated use of mineral resources and minimise or fully recycle pollutant emissions into the environment.

Taking into account the importance of solving acute resource and ecological problems, it is advisable to focus the efforts of research institutions and scientific and technical workers not only on the development of new generations of treatment facilities, methods of purification of harmful emissions and effluents (although this issue is still on the agenda) but also implementation of measures on ecologisation of technological processes, the introduction of resource-saving and environmentally friendly types of equipment and technology, methods of organizing production, forms of management and the introduction of ecological education in all educational institutions at all levels, etc.

Consequently, there is an objective need to create a unified state system of management, regulation and control of compliance with resource and ecological standards, restrictions and requirements for natural resource use and environmental conditions. But important tasks should be performed by experienced specialists (N.L. Mahura, 2012).

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The existence and proper functioning of monitoring stations which conduct continuous observations of the state of the natural environment and its individual resources is a prerequisite for a purposeful and scientifically based approach to solving sustainable development problems. In addition to monitoring stations of the national level, at least several dozen stations of regional and local importance should operate in each region. All of them should monitor atmospheric air pollution and concentrations of sulphur gas, nitrogen oxides, hydrocarbons, determine the acidity of atmospheric precipitation, etc. Such work should be carried out on water, land, forest resources, fauna and flora.

Finally, another key problem is the development of a new resource-ecological strategy of socio-economic development of the state, a particular region and oblast, the definition of national, regional and local priorities when transferring the national economic complex to a model of sustainable functioning. Such a strategy should be based on:

- an environmental priority instead of an economic one
- a rational combination of market and state economic and administrative tools and levers of regulation of resource and environmental relations, that is, the relationship between society and nature;
- optimal and mutually coordinated application of methods of sectoral and territorial management of natural resources and environmental protection, shifting the center of gravity and responsibility for solving resource and ecological problems to local authorities and management;
- integration of resource-ecological and economic approaches to the development and location of productive forces into a single ecological-economic approach through the development and application of ecological and economic norms, indicators, standards and requirements in economic activities;
- an accurate definition of national, regional and local resource-ecological priorities based on the prediction of socio-economic development and the main directions for solving resource-ecological problems.

It is quite clear that reducing the negative impact of pollution on human health is impossible without large-scale resource-ecological, ecological-economic and ecological-social research in the country. Considerable attention should be paid to the development and practical application of environmentally safe and energy-saving technologies and technical means in industry and agriculture, transport, etc. It is a question of creating such technologies that significantly reduce or nullify emissions of harmful substances into the air and water bodies. At the same time, it is reasonable to accelerate the development of effective methods for measuring and recording anthropotechnogenic pollution of the atmosphere and water bodies using the most modern technical means, especially laser technologies.

A promising direction of resource-ecological research is the systematic study of biochemical aspects of the impact of industrial and agro-industrial wastes and emissions on environment, reproductive, restorative and assimilative processes in nature and human health. On the one hand, an important role in solving actual resource and ecological problems can play new biotechnological methods of wastewater treatment, drinking water treatment and extraction of valuable substances and components from industrial and agro-industrial wastewater. On the other hand, a great

role can play scientific and scientific-technological developments aimed at significant increase of self-reproducing, self-repairing and assimilating functions of soils, water bodies, especially rivers and lakes (Motorna L., 2016).

However, stating the danger posed by pollution and waste to present and future generations will not eliminate the causes of the deep resource and ecological crisis that has affected almost the entire territory of Ukraine. Finally, it is necessary to make it compulsory to implement resource-ecological laws and standards, to comply with relevant criteria and restrictions in all sectors and spheres of the economy. A new ecological and economic thinking must be formed, which is the most important prerequisite for a successful transition to civilised market relations, on the one hand, and the transition of the national economy to a sustainable development model, on the other. Without such thinking among the general population it is impossible to rely on the creation of a highly effective, socially oriented and environmentally friendly structure and model of the national economic complex in our state.

**Conclusions and prospects for further research in this direction.** The conducted analysis demonstrates that Ukraine is in dire need of a consistent government policy aimed at implementing the principles of sustainable socio-economic development in the real practice and social life.

In industrialised countries have been introduced an effective system of ecological responsibility in order to reduce environmental pollution, rationalise the use of natural resources, large-scale application of ecologically safe, energy- and resource-saving technologies. The principal of the system: “If you pollute or use nature irrationally – you pay!” In addition, these countries have legislated strict economic and administrative sanctions against those entrepreneurs and commodity producers who do not comply with existing ecological regulations, standards, requirements and restrictions. In particular, the amounts of economic sanctions are set in such a way that it is more profitable for enterprises and other production structures to adopt environmentally safe, resource- and energy-saving technologies than to continue polluting the environment and using natural resources irrationally and wastefully.

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### АНОТАЦІЯ

*У статті розглянуто роль екологічної освіти у формуванні сталого розвитку суспільства. Проблеми екології не тільки екологічні, але й соціально-економічні. У наш час модернізації середовища з величезними масштабами та іноді непередбачуваними наслідками рівень екологічної освіти, виховання та*

культури населення визначає не тільки сутність держави, а й умови економічного благополуччя та здоров'я нації. В країнах, де екологічна культура перебуває на високому рівні, перебуває під постійним контролем держави і ставиться у ранг державної політики, населення значно менше зазнає стресових ситуацій, ніж у регіонах зі слабким екологічним контролем. При більш тісному зв'язку суспільства з природою, розвиток вмінь активно і цілеспрямовано використовувати екологічні знання становлять найголовніше завдання екологічної освіти. Це завдання стоїть перед усіма ланками освіти і має вирішуватись безпосередньо суспільством.

Екологічна освіта, в межах навчання, робить внесок у новий погляд людини на навколишнє середовище, зокрема, цілісність природного і штучного, поєднуючи знання природничих і суспільних наук про середовище як єдиний і необхідний життєвий простір людини, який можна зберігати та примножувати при систематичному розвитку науки і техніки. Однак, екологічна освіта може поліпшувати якість життя людини у конкретному середовищі.

Враховуючи значимість екологічної освіти, слід визначити її природу і завдання. З огляду на те, що захист і поліпшення середовища потребують включення в цю діяльність широких мас населення різного віку, рівня освіти і різної професійної орієнтації, екологічна освіта повинна бути пристосована до всіх цих категорій населення, розвивати в них розуміння необхідності підтримувати екологічну рівновагу в середовищі, що оточує людину, і запобігати небезпеці, що може загрожувати людині в разі його порушення.

Сучасні дослідження зосереджені на нестачі висококваліфікованих фахівців у сфері екологічної безпеки. Сталий розвиток вимагає комплексного підходу між економікою та навколишнім середовищем. З огляду на сьогоденну ситуацію, надзвичайно важливо забезпечити додаткову підтримку екологічно орієнтованих установ та організацій, саме тому зростає потреба у кваліфікованих фахівцях. Автором зазначається, що екологічна освіта та виховання — це психолого-педагогічні процеси, що формують знання здобувачів про наукові основи природокористування, імперативні переконання та практичні навички, певна орієнтація, активна життєва позиція щодо захисту, збереження та множення території природних ресурсів і культури є актуальним відповідно до сучасних масштабів екологічної зміни, які становлять реальну загрозу життю людей.

**Ключові слова:** професійна підготовка, майбутні спеціалісти, розвиток фірми, антропогенне забруднення, екологічне формування.

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## THE PROBLEM OF DEVELOPING DIGITAL COMPETENCE IN FUTURE HISTORY TEACHERS

### ПРОБЛЕМА ФОРМУВАННЯ ЦИФРОВОЇ КОМПЕТЕНТНОСТІ МАЙБУТНІХ УЧИТЕЛІВ ІСТОРІЇ

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