

**LEASECON 2020**  
**International Conference «Land Economy and Rural Studies Essentials»****THE ROLE OF ENVIRONMENTAL EDUCATION IN  
SUSTAINABLE ECONOMIC DEVELOPMENT**

Elena V. Gryaznova (a)\*, Aleksey G. Goncharuk (b), Svenlana V. Pronina (c),  
Irina I. Borisova (d), Anna V. Khizhnaya (e)

\*Corresponding author

(a) Minin Nizhny Novgorod State Pedagogical University (Minin University), 1, Ulyanov str., Nizhny Novgorod, Russia,  
egik37@yandex.ru

(b) Minin Nizhny Novgorod State Pedagogical University (Minin University), 1, Ulyanov str., Nizhny Novgorod, Russia,  
aleksgon75@gmail.com

(c) Lobachevsky State University of Nizhny Novgorod, 23 Gagarina prosp., Nizhny Novgorod, Russia,  
proswet5@yandex.ru

(d) Lobachevsky State University of Nizhny Novgorod, 23 Gagarina prosp., Nizhny Novgorod, Russia,  
irenbor90@yandex.ru

(e) Minin Nizhny Novgorod State Pedagogical University (Minin University), 1, Ulyanov str., Nizhny Novgorod, Russia,  
xannann@yandex.ru

**Abstract**

The relevance of research on the role of environmental education in sustainable economic development is due to a number of provisions. Firstly, the economic sphere of society is a dialectically polarized ecological sphere. The economy as the main source of human life is aimed at meeting one's needs. Human needs are associated with the consumption of natural resources. The task of ecology is to protect, preserve and restore these resources. If the balance between consumption and restoration of natural resources is upset, then a systemic ecological and economic crisis sets in, in the situation of which modern mankind finds itself. Secondly, without a high level of individual and social environmental awareness, economic relations in society are built on the principles of capital gains and profits, irresponsible consumption of resources. Many countries are trying to restore the balance between the economy and the environment using different means and methods. However, each of the proposed concepts and models basically presupposes the presence of a multilevel and continuous systemically organized environmental education. In its implementation, each country faces a number of problems. In Russia, these problems basically coincide with the problems of those countries that previously switched to building models of a sustainable economy. But due to the specificity of the state structure and the economy itself, specific problems of implementing environmental education for sustainable economic development in our country exist.

2357-1330 © 2021 Published by European Publisher.

*Keywords:* Environmental education, economy, green economy, sustainable development



This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 Unported License, permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## 1. Introduction

The relationship crisis between the economic and environmental spheres of public life become especially relevant. The economy has influenced the ecology historically, starting with the very first forms of human farming - gathering and farming. With the development of the industrial economy, this influence grows exponentially. Today, in the era of information technology, a high degree of technologization of human activity, the detrimental impact of man on nature, unfortunately, is not decreasing, but increasing. This fact is due to the fact that, despite the transition to an information civilization, industrial technologies continue to be used and developed. This is quite natural. However, information technologies can and should help humanity learn to use the Earth's resources wisely and efficiently, especially those that are non-reproducible (Gryaznova, Vladimirov et al., 2020; Kozlova et al., 2020).

Within the framework of economic theories today, new concepts are emerging that are aimed at shaping sustainable economic development and preserving natural resources. The phenomenon of “green economy”, “smart economy”, “digital economy”, for example, which closely interconnected with the concept of sustainable development, is becoming widespread.

The green economy stands on the point that the economic and the ecological spheres are in an indissoluble unity and are dialectically interconnected (Caro-Ramírez, 2016; Stukalo et al., 2018).

The laws of dialectics lead to a number of principles of such interaction. Limited resources also require limitations in their use. When this balance is violated, contradictions arise between the economy and the environment, which can end in crisis situations. Emerging crisis states can be resolved both in favor of the environment and in favor of the economy. But neither of these extremes suits humanity, which in both cases will be doomed. Therefore, to restore the necessary balance, new concepts of the dialectical unity of economics and ecology are being developed. An example is the theory of "smart economy". It is based on intelligent technologies developed on the basis of information technology (Anttiroiko et al., 2014); (Sedash & Egorova, 2018).

In the context of globalization and informatization, the economy of a particular country and the world as a whole acquires a complex structure, turning into a socio-technical system. The human intellect is no longer able to cope with the control of such a huge and complex organism. Therefore, artificial intelligence systems come to the rescue, which are designed to manage and control environmental and economic relations in socio-natural complexes (Stefanova, 2018; Sudarushkina & Stefanova, 2017). Alongside with that the researchers indicate it is necessary to take into account the principles of the dominant mechanisms to ensure the sustainable development of an innovative economy:

Economic mechanisms are a system of connections for the organization, functioning and regulation of sustainable innovative development of the economy, as well as methods and forms of integration interaction between education, science and business, one of the main goals of which is to improve the welfare of society (Krasota & Hasanov, 2020, p. 56).

But this does not mean that highly intellectual management of socio-natural complexes will save humanity from an ecological crisis. Artificial intelligence systems are very important in our life, but it is more vital, in our opinion, to raise the natural intelligence of each person and humanity as a whole to the proper level. It is about strengthening the role and quality of environmental education in every sphere of mankind activity (Gryaznova, Treushnikov et al., 2020; Malushko & Lizunkov, 2020).

## **2. Problem Statement**

This article explores the environmental education role in sustainable economic development. The authors emphasize the attention in the study to the implementation problems of the environmental education in Russia.

## **3. Research Questions**

The article is devoted to the observance of Russia' environmental education problems, which are the reason for the contradictions between the economic and environmental spheres of society in the frame of information civilization development.

## **4. Purpose of the Study**

The goal of the work is to analyze and systematize the problems of environmental education development and uphold its role in sustainable economic development.

## **5. Research Methods**

During the study, the most relevant home and foreign scientific works devoted to sustainable economic development, the development of the concepts of "green economy", "smart economy", "digital economy" as well as the environmental education development problems were studied. Based on the obtained material, the place and role of environmental education in sustainable development of the economy were studied. The main research methods were the method of dialectics and its principles, analysis, comparison, generalization.

## **6. Findings**

The twenty-first century is designated for many countries of the world as the century of serious economic problems. We mean by that not only the total invasion of information technologies, but also the changes in the trade relations models, investment policy and business. At the same time, many social relations have undergone transformations, exacerbating the problems of unemployment, a decrease in the income of citizens, etc. The root of the contradictions that arise when there is a clash of old and new economic relations lies in the system of professional education, which in our country turned out to be weakly integrated into the system of the world educational space. The measures taken to modernize education turned out to be ineffective in many ways. However, one of the most meaningful of them

turned out to be an unsettled system of continuous vocational education, during the creation of which there was a mechanical increment and a combination of the system of traditional education. Nevertheless, the new global economy requires the creation of such a potential of the education system, which is integrated with science and business, and does not exist separately from these phenomena of the social system (Potashnik & Khraban, 2016).

This pattern is explained, first of all, by the fact that education as a social institution is a basic element in the development of every sphere of social life, an integrator of all social relations. In this regard, a special role is assigned to vocational education, which involves not only all segments of the population, but also all types of professional activity. Vocational education is by its nature a cluster nature and cannot develop in isolation from economics, science and ecology.

Environmental education is no exception in this regard. It should be built on the principles of close interaction with economic education based on high innovative technologies. In addition, environmental education should be continuous, providing an opportunity for constant updating of knowledge and skills not only in the environmental knowledge sphere, but in the natural sciences, information technology and economics also.

Turning to the publications in which the analysis of the environmental education problems of Russia are considered, one can see that the main ones are associated with the educational reforms carried out in our country. So, for example, over the past decade, the system of higher education has undergone constant changes related not so much to improving its quality as artificially created bureaucratic requirements for documentation. For an ordinary teacher, this is manifested in the fact that every year he is forced to change the programs and all the methodological support for them, resulting in an endless stream of documents, the meaning of which is sometimes impossible to understand (Levakova & Arustamov, 2017).

The point is not even that the teacher's time is wasted, but that it is no longer enough for the most important thing - self-improvement of their professional activities. As a result, the quality of teaching falls sharply. In addition, in modern universities there has been a change in the quality of the load itself. On average, a teacher is forced to conduct classroom lessons almost daily 6 days a week, despite the fact that he is paid a 6 hour working day, which includes preparation for classes, the development of teaching materials, and mandatory participation in scientific activities. But on all this he is forced to spend his free time, being deprived of the opportunity to rest. The low salaries of teachers and instructors should be added to these problems (Mikhailova, 2017; Sinitsa, 2019).

This disastrous situation has a particularly strong effect on disciplines that require constant retraining and self-training from the teacher. These include, for example, computer science, natural science, economics. Environmental disciplines can also be classified as such. Ecology is a complex of sciences about the relationship between living organisms and their habitat. In modern conditions, it includes knowledge not only about advanced technologies of natural and technical sciences and their possible impacts on nature, but also knowledge about the application of information technologies for sustainable development. In addition, ecology is closely interconnected with all types of human activities: medical, managerial, pedagogical, scientific, physical education and economic in particular. All this creates rather difficult conditions for the formation of a high ecological culture of a modern person.

The experience of continuous environmental education is widely used in world practice (Ilyin & Ursul, 2019; Thornton et al., 2019).

Our country has also developed systems and methods of continuous environmental education for sustainable development (Baranova, 2019; Ekzaryan & Mazaev, 2017).

It provides for the formation of an ecological culture from a very early age and throughout life. However, even in this case, Russian education faces a number of serious problems.

One of the first stages in the system of continuous education is preschool education. Most often, teachers of children's educational institutions point to the problems of environmental education associated with contradictions between what they teach children and the reality that children are surrounded by. The modern design of playgrounds, for example, consists of artificial rather than natural materials. Many kindergartens fell short of the expectations in given the children the opportunity to observe the nature in their own territories. Modern parents prefer to spend their children's leisure time not in squares and parks which are mostly poorly equipped but in shopping and entertainment centres (Demikhova & Chebotareva, 2018; Gazina, 2017).

The most serious problem is still the personnel issue in preschool educational institutions (Ennanova, 2015; Pritulyak, 2015; Zherbakova, 2018).

A number of reasons caused that. And one of the most important as we see it - teacher' low salaries. Graduates of pedagogical universities and colleges do not go to work in their specialty (Kurbatova et al., 2020). But even those who choose this profession are faced with serious methodological difficulties in the implementation of ecological education of children. The circle is closed, and the problems of higher education in the training of teachers and educators are moving to the most important, basic level - preschool and primary education (Nemova et al., 2020).

A high level of environmental knowledge is required from a modern teacher and educator, which requires constant professional development and mastering of a whole complex of rapidly changing knowledge, on which such a multifaceted modern scientific complex as ecology rests.

## **7. Conclusion**

The study showed that the role of environmental education in sustainable development of the economy is pictured in the intellectual potential formation of the economy, first of all. Without such type of potential, not even the highest intellectual technologies will be able to ensure the stable development of economic systems. Environmental education is aimed at shaping environmental awareness in every member of society. In modern conditions of technologization of society, every inhabitant of the planet Earth should be aware of the possible negative consequences when using technical objects, during uncontrolled consumption of natural resources.

Environmental education in modern society can no longer be fragmentary, as it was in traditional society. Information technologies introduced into economic systems enable a person not only to manage economic processes, increasing their efficiency and intensity, but also to actively destroy natural resources, upset the balance in ecological systems, acting on a grand scale.

The formation of a high environmental consciousness of a person should be built on continuous and systemic environmental education from the earliest years and continue throughout life. The state itself

and educational institutions in particular are responsible for creating an effective education system, which is not on paper, but in practice is aimed at implementing environmental activities and cooperation with science, business and the economy.

## References

- Anttiroiko, A.-V., Valkama, P., & Bailey, S. J. (2014). Smart Cities in the New Service Economy: Building Platforms for Smart Services. *AI and Society*, 29(3), 323-334.
- Baranova, N. V. (2019). Continuous environmental education as an element of the concept of sustainable development. *Actual problems of vocational education*, 2(15), 9-13.
- Caro-Ramírez, E. E. (2016). Economía ecológica. [Economy of Ecology] *Paradigmas de la economía*, 20(2). <https://doi.org/10.18800/kawsaypacha.201901.004>
- Demikhova, L. Yu., & Chebotareva, I. V. (2018). Modern problems of ecological education of preschoolers. *Regional education: modern trends*, 1(34), 101-105.
- Ekzaryan, V. N., & Mazaev, A. V. (2017). Creation of a system of continuous environmental education as a basis for the transition to a sustainable development model. *Izvestiya vysshikh uchebnykh zavod. Geology and exploration*, 1, 74-79.
- Ennanova, L. F. (2015). Problems of professional competence of teachers in the preschool education system. *Problems of modern science and education*, 2, 45-47.
- Gazina, O. M. (2017). Study of the problem of environmental education of preschoolers at Moscow State Pedagogical University. *Pedagogical education and science*, 6, 128-131.
- Gryaznova, E. V., Treushnikov, I. A., & Goncharuk, A. G. (2020). The role of information culture in the formation of a cultural ideal. *Perspektivy Nauki i Obrazovania*, 1(43), 379-388.
- Gryaznova, E. V., Vladimirov, A. A., Maltceva, S. M., Goncharuk, A. G., & Zanozin, N. V. (2020). Problems of Virtualization and Internetization of Social Space. *Lecture Notes in Networks and Systems*, 91, 119-124.
- Ilyin, I. V., & Ursul, A. D. (2019). Towards a Sustainable Global World. *Journal of Chinese Philosophy*, 46(3-4), 224-235. <https://doi.org/10.1111/1540-6253.12387>
- Kozlova, E. P., Garina, E. P., Romanovskaya, E. V., Andryashina, N. S., & Egorova, A. O. (2020). Transformation of economic systems under the conditions of technical and technological complexity of transformed processes: organizational and management decisions. *Lecture Notes in Networks and Systems*, 129, 140-149.
- Krasota, T. G., & Hasanov, E. A. (2020). Dominating principles of economic mechanisms in the system of ensuring sustainable innovative development of the economy. *Siberian financial school*, 2(138), 56-60.
- Kurbatova, A. S., Bicheva, I. B., Ivanova, N. V., Zaitseva, S. A., & Krasilnikova, L. V. (2020). Career guidance problem as a systemic problem in Russian society. *REVISTA INCLUSIONES*, 7, 158-173.
- Levakova, I. V., & Arustamov, E. A. (2017). On artificially created problems of natural science and environmental education in universities. *World of Science*, 5, 5, 20.
- Malushko, E. Yu., & Lizunkov, V. G. (2020). The system of electronic education as a tool for increasing the competitiveness of a specialist in the digital economy. *Vestnik of Minin University*, 8, 2(31), 3.
- Mikhailova, E. A. (2017). Problems of financing education at the present stage. *Bulletin of the educational consortium of the Central Russian University. Series: Economics and Management*, 9, 100-102.
- Nemova, O. A., Vagin, D. Y., Sineva, N. L., Yashkova, E. V., Zhulkova, J. N., & Trostin, V. L. (2020). Vocational and Career Orientations of the Students at Secondary Vocational Schools of Nizhny Novgorod. *INTERNATIONAL JOURNAL OF APPLIED EXERCISE PHYSIOLOGY*, 9, 2, Pages: 31-37.
- Potashnik, Ya., & Khraban, G. (2016). Selection of innovation and investment projects taking into account their impact on the profitability of the enterprise in the post-project period. *Vestnik of Minin University*, 1-1. <https://vestnik.mininuniver.ru/jour/article/view/132/133>.

- Pritulyak, L. N. (2015). Features of the formation of professional competence of future educators of DNZ. *Baltic Humanitarian Journal*, 2(11), 71-74.27.
- Sedash, T. N., & Egorova, D. A. (2018). Green Economy and Smart Cities: Using European Experience in Russia. *Financial Life*, 3, 14-18.
- Sinitsa, A. L. (2019). Salary in general education in the regions of Russia. *Population*, 2, 78-90.
- Stefanova, N. A. (2018). The concept and general principles of the formation of clusters of the digital economy in Russia. *Azimuth of scientific research: economics and management*, 7, 1(22), 237-241.
- Stukalo, N., Krasnikova, N., Steblianko, I., Meshko, N., Simakhova, A., Gaponenko, Golovko, L., Dzhur, O., Dzyad, O., Don, O., Zhylenko, K., Zinchenko, O., Krupskiy, O. P., Lytvyn, M., Makedon, V., Michaylenko, O., Privarnikova, I., Redko, V., Sivenko, V., ... Sardak, S. (2018). "Green" economy: from global concept to reality of local development. Dnipro: Seredniak T.K. Publ.
- Sudarushkina, I. V., & Stefanova, N. A. (2017). Digital economy. *Azimuth of scientific research: economics and management*, 6, 1(18), 182-184.
- Thornton, S., Graham, M., & Burgh, G. (2019). Reflecting on Place: Environmental Education as Decolonization. *Australian Journal of Environmental Education*, 35, 3, 239-249.
- Zherbakova, N. A. (2018). The readiness of teachers to design a health-saving educational environment for a preschool educational organization. *Baltic Humanitarian Journal*, 7, 2 (23), 231-234.