

## Modern Methodology and Techniques Aimed at Developing the Environmentally Responsible Personality

Yelena V. Ponomarenko<sup>a</sup>, Bibisara A. Zholdasbekova<sup>a</sup>, Aidarhan T. Balabekov<sup>a</sup>, Rabiga I. Kenzhebekova<sup>b</sup>, Aidarbek A. Yessaliyev<sup>c</sup> and Liudmila A. Larchenkova<sup>d</sup>

<sup>a</sup>M. Auezov South-Kazakhstan State University, Shymkent, KAZAKHSTAN; <sup>b</sup>South-Kazakhstan Pedagogical University Shymkent, KAZAKHSTAN; <sup>c</sup>M. Saparbayev South-Kazakhstan Humanitarian Institute, Shymkent, KAZAKHSTAN; <sup>d</sup>The Herzen State Pedagogical University of Russia, St. Petersburg, RUSSIA

### ABSTRACT

The article discusses the positive impact of an environmentally responsible individual as the social unit able to live in harmony with the natural world, himself/herself and other people. The purpose of the article is to provide theoretical substantiation of modern teaching methods. The authors considered the experience of philosophy, psychology, pedagogy and sociology, based on the understanding of environmentally responsible personality development as a process. Research methods included dialectical, system-synergetic, ecological and humanistic, axiological, environmental, activity and personality-developmental approaches. The article contains five methodical points aimed at developing a comprehensive training program. The study provides definition of an environmentally responsible personality as a personality characterized by conscious implementation of his/her life activity in harmony with nature, with himself/herself and other people, which provides the possibility to develop modern educational aids, which can be used in the teaching and learning process.

### KEYWORDS

Environmental education, personality development, ecological education, comprehensive system, moral and ethical qualities

### ARTICLE HISTORY

Received 24 January 2016  
Revised 28 May 2016  
Accepted 29 May 2016

## Introduction

Development of a modern education model promoting patriotism and civic responsibility, active social position and healthy lifestyle is closely linked to the development of environmental responsibility in the younger generation (Kanke, 2003). Development of environmentally responsible personality is individual is of particular importance for graduates of educational institutions (Smith & Williams, 1999).

As a rule, environmental education is provided haphazardly and is limited to the transfer of knowledge and organization of environmental protection activities,

**CORRESPONDENCE** Yelena V. Ponomarenko ✉ odinzova2005@mail.ru

© 2016 Ponomarenko et al. Open Access terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>) apply. The license permits unrestricted use, distribution, and reproduction in any medium, on the condition that users give exact credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if they made any changes.



which contributes to the predominance of inappropriate perception of environmental problems as personality-significant educational patterns (Popova, 2016).

The environmentally responsible personality is regarded as a person able to live in harmony with the natural world, himself/herself and other people (Popova, 2016).

The system of environmental education has a positive impact on the development of environmental knowledge and skills (Khazykova, 2009), namely:

1. Correct human understanding of social norms;
2. Selection of a specific line of conduct;
3. Convinced need to protect nature;

The problem is that the students of high schools and universities practically do not participate in environmental activities; only 21% of these people are actively involved in such activities (Ministry of Education and Science of the Republic of Kazakhstan No. 0106RK00535).

Therefore, the methodology of environmental education as a system of knowledge about the starting positions, approaches, principles, methods, organization and construction of its theory and practice, needs to be updated (Harrison & McCaig, 2015).

### **Background Paper**

In the developed countries, achievement of environmentally responsible personhood is the key task (Kaplan, 2000). And in the post-Soviet countries (such as Kazakhstan), development of a responsible attitude to nature has long been studied only from the "man as a king of nature" standpoint; with this approach at hand, the education system rather deformed the personality, shifting the emphasis from the moral and ethical values to a purely pragmatic perception (Watt, 1971). Rules of human behavior towards nature were only declared, however, their moral content was not determined (Kostenkov, 1990; Parfilova, 2003).

Comparative analysis of the content of textbooks published by the same authors at different times confirms the fact that the target and the content side of environmental education are gradually revised (Bronfenbrenner, 1976; Ban et al., 2015). For example, S. B. Baysalov (1987) emphasizes the information regarding legal rights and environmental responsibility. Comparing the contents of this publication with the publication dated 1976 (Baysalov, 1976), it becomes clear that the value of responsibility in the field of environmental protection has increased significantly. Transparency in the field of legal protection of nature plays a positive role in the development of respectful attitude towards nurture in young people: "Not all people have the nurtured feeling of high moral responsibility for the preservation of animals, plants, water, air, soil" (Baysalov, 1987, p. 5). Thus, the moral aspect of responsibility for the environmental preservation takes the lead (Reardon & Nordland, 1994; Senkevich, 1991) and starting from 1990s, the social aspect of environmental liability is already considered in terms of circumstances that determine its moral and spiritual development: "Human environmental compatibility is almost identical to his/her personal qualities because any personality is the reciprocal reflection of existence in its entirety, and the ecological crisis is almost identical to the personal inner crisis"; therefore, one needs to move in two mutually supportive directions – "to restore order in the outer being (eidos) and in the inner one (soul)" (Kalmykov, 1999, p. 58). The latter requires finding the

meaning of the of environmental responsibility phenomenon in the human relationship to the natural world and to himself / herself as part of this world.

There are different approaches in pedagogical science to the understanding of environmental responsibility:

1. The measure of a conscious attitude of the subject to his/her freedom in the field of environmental protection (Reimers, 1994; Haiju, 2012);
2. Focus on the state of environment (Suravegina, 1983; Esa et al., 2014);
3. Ability to interact with the world when man prevents negative impact of his/her activities on the environment (Chernyavskaya, 2006; Kobori et al., 2016). Therefore, environmental responsibility is anyway identified with a responsible attitude to nature as environment (Jackson, 2015; Schweitzer, 1992).

Determination of approaches to the environmentally responsible character education and its precise definition will provide the possibility to develop a specific educational methodology, which will improve the ecological situation and increase social activity in the field of environmental protection.

### **Research purpose**

Development of learning methods aimed at the environmentally responsible personality formation in high school students

### **Research questions**

Determination of teaching methods forming the environmentally responsible personality and the way they affect personality formation.

### **Methods**

The authors consider the experience of philosophy, psychology, pedagogy and sociology, based on the understanding of environmentally responsible personality formation as a process. The dialectical, system-synergetic, ecological and humanistic, axiological, environmental, activity and personality-developmental approaches were used in the development of training strategies (Ponomarenko, 2008; Ponomarenko, 2010).

### **Data, Analysis, and Results**

Methodical basis of environmental education of schoolchildren lies in goal-setting. Goal-setting in terms of projected results should reflect a model of environmentally responsible personality, which takes into account basic trends in the education system development. This implies *the first methodological feature* of environmental education of schoolchildren. The authors of his research adhere to the following definition: the environmentally responsible person of a secondary school graduate is a personality able to organize his/her own ability to live in harmony with the natural world, himself/herself and other people.

The analysis of environmental components in the goal-setting of secondary school curricula reflects various spheres of relations in the system "man-society-nature": knowledge-based (determining the formation of special ecological knowledge), cognitive (developing cognitive processes and abilities), activity (forming skills and behavior in the environment), axiological and normative (defining human relationship to the natural world) and other spheres.



One should consider a full cycle of environmental information in terms of school education. All natural disciplines should include a number of concepts, such as "ecosystem", "environmental cooperation", "ecological contradiction", "ecological development", "environmental sustainability" and others. This represents *the second methodological feature* of environmental education of schoolchildren. Therefore, inclusion of all natural disciplines in the development of key environmental concepts will contribute to the formation of natural scientific picture of the world, not divided into physical, chemical, and other components. In turn, that will contribute to the effective development of environmentally responsible secondary school graduates.

*The third methodological feature* of environmental education of schoolchildren presents the problem of correct balance between the content of subjects and cognitive developments in the emerging environmentally responsible personality.

Consequently, problems in the field of environmental education of schoolchildren are caused by the mismatch between cognitive developments determined by the large-scale ecologization of education and knowledge offered by the national natural-science education system. The implementation of high-level environmental education is possible through the development of related activities, which have not been implemented in practice. Interactive teaching methods coordinate the efforts of teachers; one should provide their consistent contribution to the development of certain skills aimed at coordinating decisions of various groups of students. These methods can be introduced when teaching self-reflection, hypothesizing, predicting at the high school level, when students already possess relevant skills that could be used to solve causal problems. This implies the fourth methodological feature of environmental education.

Since effective planning of environmental education at school can ensure projected results, objectives should be considered only on the basis of these results; therefore the entire natural-science education should be reordered in accordance with the planned results, in pursuit of higher goals. This will ensure implementation of a system approach (the fifth methodological feature of environmental education process).

Development of the environmentally responsible personality is a special process determined by two reasons. Firstly, responsible attitude, as opposed to responsibility, is not always a stable characteristic of the personality and therefore can not serve as the main criterion for the development an environmentally responsible personality. Secondly, identification of environmental responsibility with a responsible attitude to nature, in fact, restricts the development environmentally responsible organization of high school student activities aimed at studying the laws of nature and nature protection (man himself, people around him or the entire society are not included into the concept of environmental responsibility). Therefore, it is clear that educational work planning and evaluation of its results often become absurd: environmental education is considered successful if a person plants a tree, cares about the world, protects animals; however, a concert put on by young people at an orphanage, or their assistance in renovating the house of a war veteran are regarded as patterns of moral education. Time passes, but the ecological and moral types of education are still distanced. Keeping in mind years of pedagogical experience, the authors of this paper would like to note that different perception of social, civic and environmental responsibility in the theory and practice of education is quite common.

One should argue that the reason lies in the stable perception of ecology solely within the biological science. Based on the traditional understanding of the environment, it should be recognized that it contains "no sign of humane relations priority among species as well as no sign of preference given to *Homo sapiens* as one of these species" (Marfenin, 2000). Of course, nature objects refer to the subject-matter of ecology; however, ecology is not limited to them. Modern understanding of ecology is significantly different: ecology is regarded as a developing multi-theory, as a set of disciplines, exploring human interaction as an individual (biological species) and personality (social actor) with the surrounding natural and social environment (Akimova, 1988). Priority of social aspects of ecology and socio-ecological approach give social and moral characteristics to environmental responsibility.

In turn, this attitude can't but affect the concept of environmentally responsible personality. According to Aristotle, when talking about the nature or the essence of things, we answer the question of what it is and it is not the question of qualities of this thing or the question of how big it is (number) (Aristotle, 1997). In other words, revealing the essence of the concept, one need to allocate a sign that acts as the outstanding feature under particular circumstances. The authors of this study believe that such a feature is presented by the integral character.

The concept "responsibility" in the philosophical sense has various meanings – virtue, attitude, unit value, etc. V.A. Kanke (2003) indicates the growing role of responsibility, noting the demand for its "maximization" in terms of all possible perspectives, both temporary, and universal: "The responsibility imperative states: act so as to ensure prosperous future to the integral unity, to which you belong" (Kanke, 2003, p. 273). The integrated nature of responsibility, the expressed "not only as the diversity of individual attitudes towards the world, but also as their unity, integrity, synthesis", was highlighted by A. P. Sidelkovsky (1988). N.L. Galeeva specifies a number of questions, which a person is forced to answer by building his/her own system of values: what to know, how to think and what to believe in order to ensure non-destructive character of human activity (professional, communicative, self-understanding and self-development) (Galeeva, 2001). By studying these and other ethical concepts, one should recognize that responsible behavior is a projection of human integral values of responsibility as the main motive of actions on one's own vital functions.

The human unseen presents a special reality. Modern philosophical concepts imply the following: the purpose of man is his/her desire for unity and harmony; human essence implies both controversial and constantly harmonizing relations between people; the natural and the human can not be reduced to the biological essence, since they contain the infinite cosmos. Human attitude towards nature characterizes his/her attitude to himself/herself, to other people and to the entire society. In this endeavor, deep evolution and environmental ethics reveal moral foundations referring to the development of environmental responsibility as a value.

These concepts are similar with regard to the fact that interaction in the system "man – natural world" should be based on deep ethical grounds, understanding and recognizing the value of any life. In this respect, A. Schweitzer argues that human worldview can't be formed only upon learning the world. This scientist-humanist believes that ethics presents the "unlimited responsibility for everything that lives" (Schweitzer, 1992). A. Schweitzer's teaching enriched the theory of environmental education with the simple and wise rule: teaching children



"the ethics of reverence for life" means their upbringing in terms of "infinitely great responsibility for relations with other people" (Schweitzer, 1992, p. 224).

Therefore, modern philosophy of education formed methodological orientations: environmental responsibility is not just a quality or attribute for the environmentally responsible personality, it has already been formed as an integral value, which harmoniously includes such key values as homeland, nature, family, work, health, etc. Based on this understanding, it is expected that environmental responsibility is manifested in everyday life – at school, at work, during communication, recreation, etc., not only in studying nature and its protection. The integrated nature of the environmental responsibility value allows formulating the concept of eco-responsible person: the unconditional acceptance of the value of any life; love for nature, love for homeland; solid moral foundation, acknowledgment of responsibility, acceptance of the system of human values; understanding the importance of healthy lifestyle; intellectual development; well-developed civic-mindedness, etc.

Vital activity is regarded as the aggregate of all forms of human activity. Aspirations include not only motives and needs, knowledge and skills, abilities and know-how, but also concrete, expected and approved human actions. Aspirations contribute to human self-education, formation of morality, faith, emotional sufferings, creativity, intellectual effort and reflexive abilities.

Philosophical understanding of the term "consent" is the key one in the aforesaid concept: human aspiration to consciously exercise his/her ability to live in harmony with the nature world, himself/herself, other people will lead to self-improvement, since any person being involved in a multi-subject interaction and dialogue, in co-creation with other people, social groups and natural systems, will inevitably produce his/her own forms of activity, behavior, thinking, and, moreover, will seek to harmonize them with others. In this case, the concepts "I want", "I can" and "I should" will be synthesized in a single system, providing integrated value of environmental responsibility.

## Discussion and Conclusion

Thus, the process of environmental education of schoolchildren has the following methodological characteristics: goal-setting as the projected results reflects a model of environmentally responsible personality, taking into account trends in the development of key elements of education system; all natural sciences are involved in the development of basic ecological concepts; the authors analyzed and solved the problem of correlation between the content of school subjects and cognitive developments in the emerging environmentally responsible student personality; the introduction of interactive training methods takes place at the high school level in teaching self-reflection, hypothesizing, predicting; school natural-science education is rebuilt on the basis of system approach in accordance with the planned ecologization results. Implementation of relevant methodology will promote successful development of environmentally responsible personality in high school graduates.

G.N. Karopa (1995) emphasizes the following features of human environmental responsibility:

- 1) Formation of interest in social ecology and contemporary environmental issues;
- 2) Development of socially valuable motives of the individual attitude to nature;

3) Disclosure of the universal value of nature;

4) Development of ecological, moral and ecological knowledge, relevant skills, generalized principles and patterns of behavior and activity in the natural environment;

5) Direct involvement in nature protection activities.

Formation of interest is a very important condition for the development of environmentally responsible personality, however, in item 5 G.N. Karopa (1995) did not describe in which way people would be involved in these activities, because if this involvement is based on imperative influence, one can not be sure that a person will feel real responsibility.

Thus, summarizing the results of philosophical and terminological analysis of definitions, such as "personality", "responsibility", "ecology", clarifying public and social requirements to modern graduates of educational institutions, as well as original experience, it should be emphasized that the environmentally responsible personality – is a personality focused on conscious implementation of his/her own ability to live in harmony with the natural world, himself/herself and other people. Understanding the value of nature will not only improve the environmental situation, but also raise the level of culture and consciousness of man as an integral part of the living world.

### Implications and Recommendations

The developed methodical features will foster comprehensive environmental responsibility of high school graduates, providing the possibility to reshape the educational process in accordance with modern requirements related to the development of the environmentally responsible personality.

The study provided definition of an environmentally responsible personality as a personality focused on the conscious implementation of his/her own ability to live in harmony with nature, himself/herself and other people, which allows developing modern training books that can be applied in the teaching and learning process.

### Disclosure statement

No potential conflict of interest was reported by the authors.

### Notes on contributors

**Yelena V. Ponomarenko** holds Doctor of Pedagogy at M. Auezov South-Kazakhstan State University, Shymkent, Kazakhstan.

**Bibisara A. Zholdasbekova** holds PhD in Pedagogy at M. Auezov South-Kazakhstan State University, Shymkent, Kazakhstan.

**Aidarhan T. Balabekov** holds PhD in Pedagogy at M. Auezov South-Kazakhstan State University, Shymkent, Kazakhstan.

**Rabiga I. Kenzhebekova** holds PhD in Pedagogy at South-Kazakhstan Pedagogical University, Shymkent, Kazakhstan.

**Aidarbek A. Yessaliyev** holds Doctor of Medical Science at M. Saparbayev South-Kazakhstan Humanitarian Institute, Shymkent, KAZAKHSTAN.

**Liudmila A. Larchenkova** holds Doctor of Pedagogy at The Herzen State Pedagogical University of Russia, St. Petersburg, RUSSIA



## References

- Akimova, T. A., & Haskin, V. V. (1988). Ecology. Moscow: Nauka.
- Aristotle. Writings. (1997). In 4 Volumes (Vol. 2). Ed. by V. F. Asmus. Moscow: Thought.
- Ban, N. C., Boyd, E., Cox, M., Meek, L. C., Schoon, M., & Villamayor-Tomas, S. (2015) Linking classroom learning and research to advance ideas about social-ecological resilience. *Ecology and Society*, 20(3), 89-93.
- Baysalov, S. B., & Ilyashenko, L. V. (1976). The Law and Nature Conservation: 100 Q & A. Alma-Ata: Kazakhstan.
- Baysalov, S. B., & Ilyashenko, L. V. (1987). 200 questions and answers on nature protection. Alma-Ata: Kaynar.
- Bronfenbrenner, U. (1976). The experimental ecology of education. *Educational Researcher*, 5(9), 5-15.
- Chernyavskaya, O. M. (2006). Formation of ecological responsibility in school children through ecologically oriented educational environment: PhD thesis. Chelyabinsk.
- Esa, N., Hashimah, Y., Nooraida, Y., Mahamad, H. I., & Mardiana, I. A. (2014) Enhancing Students' Ecological Thinking to Improve Understanding of Environmental Risk. *Sustainable Living with Environmental Risks*, 265-272.
- Galeeva, N. L. (2001). This is not a matter of the subject "Ecology". *Ecology and Life*, 4, 41-44.
- Haiju, J. (2012). Ecological Moral Education: Foreign Development Trends and the Future Trend of China. *Social Sciences in Nanjing*, 3, 20-24.
- Harrison, N., & McCaig, C. (2015). An ecological fallacy in higher education policy: the use, overuse and misuse of 'low participation neighbourhoods'. *Journal of Further and Higher Education*, 39(6), 793-817.
- Jackson, M. G. (2015). From practice to policy in environmental education. *Southern African Journal of Environmental Education*, 20, 97-110.
- Kalmykov, A. (1999). Introduction to environmental psychology. Moscow: MNEPU.
- Kanke, V. A. (2003). Ethics of Responsibility. Moscow: Logos.
- Kaplan, S. (2000). New ways to promote proenvironmental behavior: Human nature and environmentally responsible behavior. *Journal of social issues*, 56(3), 491-508.
- Karopa, G. N. (1995). Towards a methodology aiming at environmental education of schoolchildren. *Questions of psychology*, 1, 69-73.
- Khazykova, T. S. (2009). Environmental responsibility of the personality: the nature and structure. *Bulletin of Pyatigorsk State Linguistic University*, 2, 46-52.
- Kobori, H., Dickinson, L. J., Washitany, I., Sakurai, R., Amano, T., Komatsu, N., Kitamura, W., Takagawa, S., Kouama, K., Ogawara, T., & Miller-Rushing, A. J. (2016). Citizen science: a new approach to advance ecology, education, and conservation. *Ecological Research*, 31(1), 1-19.
- Kostenkov, A. (1990). Environmental education of schoolchildren. Barnaul: Altai publishing house.
- Marfenin, N. N. (2000). Humanism and ecology. *Ecology and Life*, 5, 6-10.
- Ministry of Education and Science of the Republic of Kazakhstan. No. 0106RK005355.
- Parfilova, G. G. (2003). Ecological education of younger schoolboys in the family: PhD Thesis. Kazan, KSU, 173 p.
- Ponomarenko, E. V. (2008). Philosophical and psychological analysis of personality development laws. Yekaterinburg: UralSPU.
- Ponomarenko, E. V. (2010). Theoretical and methodological bases of environmentally responsible personality development in secondary school graduates: PhD thesis. Almaty.
- Popova, I. (2016). Concept and structure of ecological education of personality in the system of educational activities. *Bulletin of G. S. Skovoroda Kharkiv National Pedagogical University. Philosophy*, 1(46), 151-165.
- Reardon, B. A., & Nordland, E. (1994). Learning Peace: the promise of ecological and cooperative education. Albany: SUNY Press.
- Reimers, N. F. (1994). Ecology: theories, laws, rules, principles and hypotheses. Moscow: Young Russia.
- Schweitzer, A. (1992). Reverence for life: translation rom German. Moscow: Progress.



- Senkevich, V. M. (1991). Ecological Education: Integration of Scientific Knowledge and Figurative Representations. *Soviet Education*, 33(1), 47-54.
- Sidelkovsky, A. P. (1988). Criteria, methods and techniques of learning and development of environmental attitudes in pupils. Stavropol: Publishing House of the Pyatigorsk State Pedagogical Institute.
- Smith, G. A., & Williams, D. R. (1999). Ecological education in action: On weaving education, culture, and the environment. Albany: SUNY Press.
- Suravegina, I. T. (1983). Responsible attitude towards nature as a feature of the comprehensively developed personality. *Environmental Education at schools in CMEA states*, 40-47.
- Watt, K. (1971). Ecology and Natural Resource Management . A Quantitative Approach. Wiley.