

HPEPA 2019**Humanistic Practice in Education in a Postmodern Age 2019****UNIVERSITY STUDENTS LEVEL OF DEVELOPMENT AND
FEATURES OF ENVIRONMENTAL CULTURE FORMATION
ANALYSIS**

Artem Fortunatov (a)*, Vladislav Benin (b)

*Corresponding author

(a) Moscow State University, ul. Yunosty, 5, Moscow, the Russian Federation, art_fortunatov@mail.ru

(b) Bashkir State Pedagogical University n. a. M. Akmulla, ul. Oktyabrskoj revoljucii, 3-a, Ufa, RB, the Russian Federation, benin@lenta.ru

Abstract

The relevance of the research problem is due to the identification of the level of development and features of the formation of environmental culture of university students, as well as the correlation of this level with the level of self-esteem of students in the formation of environmental culture. 156 students of Moscow Humanitarian University and Magnitogorsk State Technical University named after G. Nosov took part in the study. Questioning shows a positive relation between the level of formation of ecological knowledge, the relation to the nature and ecological activity and level of development of components of ecological culture. Thus, students with a low level of environmental knowledge have a low level of environmental education. Students who have not shown interest in nature have a low level of environmental awareness. The revealed low activity in the field of ecological activity leads to a low level of interest in it. In contrary, students with a high level of development of these indicators have a high level of formation of environmental knowledge, as well as interest in relevant activities. The respondents have an adequate self-assessment of the level of development of ecological culture. The data obtained while diagnosing of students' self-esteem indicators coincide with the indicators revealed in the process of research of the level of development of their ecological culture. The obtained results can be used in the future in the development of special programs, models, as well as technologies for the formation of environmental culture among students of the university.

2357-1330 © 2020 Published by European Publisher.

Keywords: Components of ecological culture, ecological culture, self-assessment.

1. Introduction

To date, teachers have accumulated a wealth of experience in the formation and development of environmental culture of the younger generation. Fukami and Wardle (2005), Gruner (2007), Hammermann (1980), Lucas (1972), Odum and Odum (1953), Sousa (1984) and Wilson (1994) made a great contribution to the formation of ecological education.

Today all over the world there is an increase in the number of researchers whose interests affect the problem of formation of ecological culture. Thus, in the United States for the period from 1971 to 1980 394 theses on environmental issues were defended, in the period from 1981 to 1990 – 307 similar theses, from 1991 to 2000-1392 theses (Dillon, Brody, & Stevenson, 2013).

The best works in the field of environmental education were analyzed, summarized and systematized, resulting in a collection of dissertations on environmental topics for the period from 1970 to 2000 (Marcinkowski et al., 2013). This study was conducted by the research Commission of the North American Association for Environmental Education (NAAEE) with the support of the U.S. Educational Resources Information Center (ERIC), which is located at Ohio State University.

A significant contribution to the development of University environmental-oriented education was made by Bainer, Cantrell, and Barron (1997) and Engleson (1985). Engleson (1985) was the first to develop an eight-step method of forming ecological culture. His colleagues Bainer, Cantrell, and Barron, (1997) in the process of environmental education at the University proposed to apply an integrated approach, including interdisciplinarity, transdisciplinarity and multidisciplinary.

The problem of formation of ecological culture and its components is well studied in modern Russian pedagogical literature. Its motivational-value component was considered in the work of Nesgoraeva and Saveljev (2009). The study of Abdrashitova (2013) is devoted to the moral and aesthetic components of ecological culture; the value component is revealed in the article by Ryabova (2012); the cognitive component of ecological culture was considered in the work of Nesgoraeva and Saveljev (2010); the activity component is revealed by Polyanskaya and Khitsova (2015).

2. Problem Statement

We have made the following assumptions:

1. There is a relationship between the level of formation of environmental knowledge, attitude to nature and environmental activities of students, which affects the level of development of environmental consciousness, environmental activities and environmental education.
2. The level of self-assessment of students in relation to the development of environmental culture coincides with the level of development of environmental culture of students identified in the study.

3. Research Questions

In our study, we rely on the position that the study of any cultural phenomenon requires the allocation of its functions. In the philosophical and social sense, function refers to the role that a particular social institution performs in relation to the needs of the social system. Accordingly, the functions of culture should be understood as the role it plays in the life of society (Benin, Vasilina, & Zhukova, 2014).

The research is also based on the work in the field of identification of components of ecological culture, published by Fortunatov (2015), Sitarov and Urekeshova (2017). In the course of the research conducted by the authors, the following components of ecological culture were identified: ecological knowledge, ecological-like activities, as well as values and relationships with the surrounding socio-natural environment. These components were used by us for selection of diagnostic methods of formation of ecological culture of University students. This actually served as the basis for the organization and conduct of the study, the results of which are presented in this article.

4. Purpose of the Study

The aim of the work is to study the level of formation of environmental knowledge, attitude to nature and environmental activities of University students and the level of development of their ecological consciousness, environmental activities and environmental education.

5. Research Methods

In the course of the study, we used modernized diagnostic techniques designed to identify the level of development of environmental culture: "Diagnosis of the level of environmental culture of the individual" by Kashlev and Glazachev (2000); test-questionnaire "Environmental culture of students" by Asafova (2002); test-questionnaire "Self-assessment of environmental culture" by Nogteva and Lushnikov (2004).

6. Findings

To answer the first assumption, the students were asked to answer the questions of two methods of diagnosis of the level of development of ecological culture: Kashlev and Glazachev (2000) and Asafova (2002). Let us dwell on their analysis in more detail.

"Diagnostics of the level of ecological culture of personality" by Kashlev and Glazachev (2000). In the process of identifying the level of environmental knowledge (figure 1), we obtained the following indicators: 12% of respondents have a high level of knowledge in the field of ecology; 34% - an average level; 54% - a low level.

The indicators regarding the value of nature and attitude to nature (figure 4) were as follows: 15% of respondents highly appreciated the value of nature and their attitude to it; 38% showed an average level of evaluation of its value; and the largest number of respondents - 47% - showed a low level.

Environmental performance indicators (figure 01) are as follows. 11 % of respondents positively assess and tend to engage in environmental activities; 27% show an average level of interest in environmental activities; more than half - 62% - show a low level.

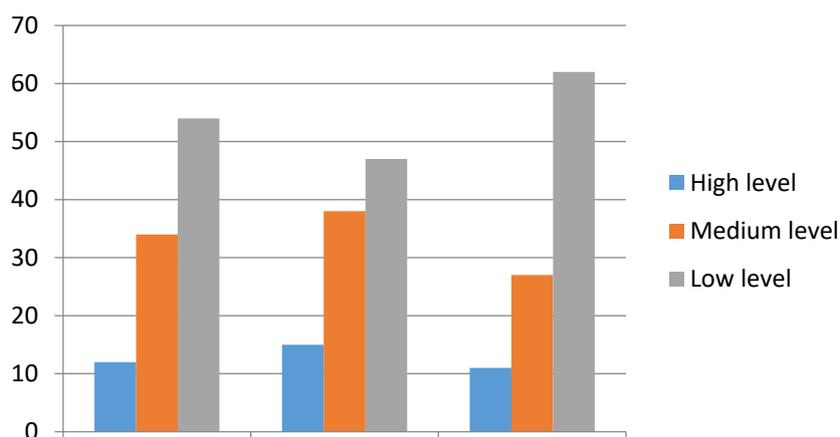


Figure 01. Indicators of the level of development of ecological culture of the student by S.S. Kashlev and S.N. Glazachev

In the process of identifying the level of environmental education (figure 02), we used the test "Environmental culture of students" (Asafova, 2002). The following indicators were obtained: 14% of respondents have a high level and have formed system of environmental interests, as well as pronounced practice-oriented knowledge in the field of ecology. 31% of the surveyed students showed an average level, which suggests that they have interests in the field of ecology and awareness of the need to interact with nature. 55% of the students had a low level of ecological culture, which implies a lack of interest in the problems of ecology, and knowledge about it is fragmented.

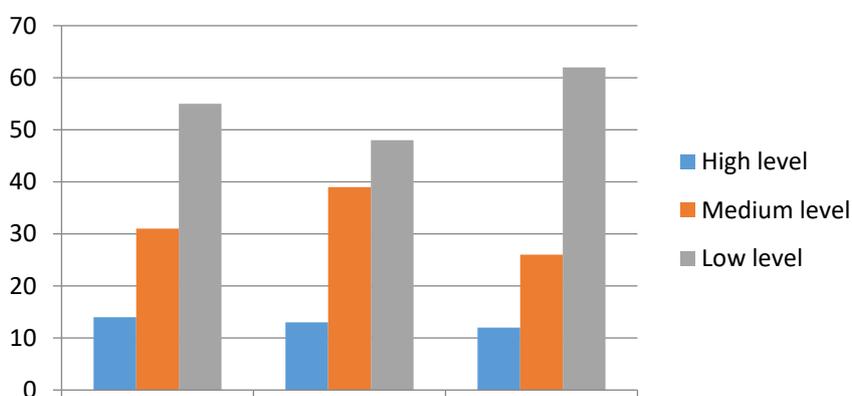


Figure 02. Indicators of the level of development of ecological culture of students on the test by E.V. Asafova

In the study of the level of environmental awareness (figure 02), the following indicators were identified. 13 % of respondents have a high level of formation of values, beliefs and orientations about the system of human-nature relations. 39% of the surveyed students have an average level of consciousness, which implies a sufficient level of environmental knowledge, values and beliefs, but they are not always ready to implement them in practice. 48% of respondents showed a low level of environmental awareness, which implies the lack of formation of the above characteristics and indifference to the problems of interaction with the environment.

During the study of the level of interest in environmental activities (figure 02), the following indicators were obtained. 12% of students are positive about it and tend to be highly active in the organization and implementation of environmental activities. 26% showed an average level of interest in environmentally oriented activities and 62% of respondents showed a low level of participation in this type of activity, which indicates their passivity in relation to its implementation.

Analyzing the data that were obtained in the process of applying these techniques, it should be noted that the level of formation of environmental knowledge, attitude to nature and environmental activities directly affect the level of development of environmental consciousness, interest in environmental activities and environmental education. Thus, students with a low level of environmental knowledge have a low level of environmental education. Students who showed no interest in the relationship to nature have a low level of environmental consciousness. And the revealed low activity in the field of ecological activity leads to a low level of interest in it. Conversely, students with a high level of development of these indicators have a high level of formation of environmental knowledge and education, as well as interest in activities.

Summing up the results of our research with the use of methods to identify the development of ecological culture by Asafova (2002), Kashlev and Glazachev (2000), it should be noted that 12% of respondents (figure 03) had a high level of formation of ecological culture. These students are able to be aware of the surrounding socio-natural environment and themselves in it, thus enriching their inner world. They realize and understand the ultimate foundations of being and thinking of ecological culture as a whole. They have developed processes of self-knowledge, self-reflection of the past and anticipation of the future, their own environmental activities that contribute to their spiritual and intellectual development.

34% of respondents (figure 03) showed an average level of formation of ecological culture. Students develop emotional and evaluative judgments in the analysis of the facts of human and society interaction with the surrounding socio-natural environment. In their activities, they strive to preserve, see and know the beauty of the environment, while focusing on universal values and ecocentric approach. They have a high degree of readiness for environmental activities, which, however, are not always carried out.

And 54% of the surveyed students (figure 03) have a low level of formation of ecological culture. When analyzing specific problems and situations, these students find it difficult to apply environmental knowledge due to their low level of proficiency. At this level, the learning material is mechanically reproduced, knowledge is limited to the external features of the studied objects, and students are not able to operate with them. Students experience difficulties in the process of combining and transferring knowledge from one subject area to another. They have a lack of formation of ideas about the scientific picture of the world and, as a consequence, anthropocentricity in the process of interaction with the surrounding socio-natural environment.

To validate the second of the assumptions made by us and associated with the coincidence of the level of self-esteem of students in relation with the development of ecological culture with the development level of ecological culture of students, identified in the research process, the test "self-assessment of an environmental culture" by Nogteva and Lushnikov (2004) was applied .

In the process of studying the level of ecological and value knowledge (figure 04), we obtained the following results. 13% of respondents have a high level and have significant knowledge in the field of environmental problems. 33% have the system environmental knowledge on the standard required and are

able to translate it from one form to another. They classify and identify causal relationships, evaluate and understand the essence and logic of the training material, but at the same time are able to tolerate inaccuracies. 54% of students were found to have a low level of environmental knowledge, which suggests that when analyzing specific problems and situations, they find it difficult to apply environmental knowledge because of their low level of proficiency.



Figure 03. Level of formation of ecological culture of university students

In the study of the level of environmental-value relations (figure 04), the following indicators were identified. 16 % of respondents have a high level of environmental values. They try to prevent cases of abuse of socio-natural objects or environmentally inappropriate behavior, demanding the implementation of other norms of behavior in conditions of socio-natural environment. 39% of the students surveyed showed an average level of formation of environmental values and, as practice has confirmed, assign a leading role to spiritual and moral motives in environmental activities. When analyzing the facts of interaction between man and society with the surrounding socio-natural environment, they produce emotional and evaluative judgments. 45% of respondents revealed a low level of ecological and value relations. They have a predominant anthropocentric approach to the world, that is why the ecological value orientations are not formed, and rational consumer motives of behavior prevail.

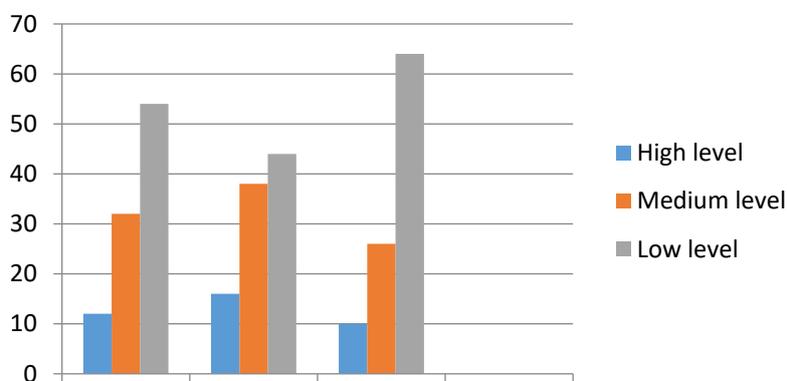


Figure 04. Indicators of the level of development of ecological culture of students on the test by E.Ju. Nogteva and I.D. Lushnikov

In the course of the study of the level of environmental-value activity (figure 04), the following data were obtained. 10 % of respondents have a positive attitude to such activities and tend to show high activity in them, which is based on extensive positive practical experience of environmental activities. As a rule, these students have an active life and civic position in relation to eco-friendly activities, which manifests itself in thrift, humanity and responsibility towards nature. 26% of students showed an average level of activity in this type of work, which is manifested through their participation in practical environmental activities, but most often at the request of others, although sometimes, occasionally, they can take the initiative. 64% of students showed a low level of environmental-value activity, which indicates that they have no desire to participate in such activities on their own initiative.

Based on the results obtained, we identified the following level of formation of ecological culture among students (figure 05).



Figure 05. Level of formation of ecological culture of university students

12% of respondents had a high level of formation of ecological culture (figure 05). Students choose the universal value of nature, the self-worth of life and health as a personally significant reference point and they are convinced of the need to protect them and optimize relations in the system "man-society-nature". They are aware of their role and purpose in nature, motivate their activities and behavior by needs to know and preserve the beauty of the natural environment, they focus on the ecocentric approach.

34% of respondents showed an average level of formation of ecological culture (figure 05). These students play a leading role in environmental protection activities for spiritual and moral reasons. When analyzing the facts of interaction between man and society with the surrounding socio-natural environment, they produce emotional and evaluative judgments, and by their activities aim to see, know and preserve the beauty of the environment, while focusing on universal values and ecocentric approach.

The majority of the students surveyed (54%) have a low level of formation of ecological culture (figure 5). When analyzing specific problems and situations, they have a predominant anthropocentric approach to the world, because of which ecological value orientations are not formed, and rational consumer motives of behavior prevail; there is no motivation for eco-like activities, inaccurate value judgments are noted. When performing actions and activities in relation to the surrounding social and natural environment, personal interests dominate. There is no emotional response to environmental problems.

7. Conclusion

Thus, our assumption that the majority of the surveyed students have an adequate level of self-esteem in relation to the development of environmental culture is confirmed. The data obtained in the process of diagnostics of ecological culture and revealed in the process of self-assessment of students coincide with the indicators revealed in the process of research.

Summing up the above, it should be noted that the low level of development of elements of ecological culture leads to low indicators in respect of elements dependent on it. It should be noted that the level of formation of ecological culture among students is rather low, which suggests the need for its further formation and development.

References

- Abdrashitova, N. V. (2013). Model formirovaniya npravstvennogo i esteticheskogo komponentov ekologicheskoy kultury studentov [Model of formation of moral and aesthetic components of ecological culture of students]. *Vestnik Kazanskogo gosudarstvennogo universiteta kultury i iskusstv*, 2, 95-100. Retrieved from <https://www.elibrary.ru/item.asp?id=20289709>
- Asafova, E. V. (2002). Vospitanie i diagnostika razvitiya ekologicheskoy kultury studentov [Formation and diagnostics of students' ecological culture development]. *Report on scientific and research work "Development of upbringing system model in a higher educational establishment (in the Kazan State University)"*. Retrieved from http://old.kpfu.ru/infres/nikolaev/2002/gl2_3_3.htm
- Bainer, D. L., Cantrell, D., & Barron, P. (1997). Professional Development of Environmental Educators through Partnerships. *Paper presented at the Annual Meeting of the North American Association for Environmental Education*, 8, 15-19.
- Benin, V. L., Vasilina, D. S., & Zhukova, E. D. (2014). Kulturologicheskaya kompetentnost subjekta professionalno-pedagogicheskoy deyatel'nosti: ucheb. posobie dlya studentov i prepodavatelej vysshej shkoly [Culturological competence of the subject of professional and pedagogical activity: manual for students and teachers of higher education]. Moscow: Izd-vo Pero.
- Dillon, J., Brody, M., & Stevenson, R. B. (2013). *International Handbook of Research on Environmental Education*. NY and London: Routledge.
- Engleson, D. C. (1985). A guide to curriculum planning in environmental education. *Environmental education curriculum development task force. Bulletin*, 6094, 103.
- Fortunatov, A. A. (2015). Funktsii ekologicheskoy kultury: analiz opredelenij [Functions of ecological culture: analysis of definitions]. *Znanie. Ponimanie. Umenie*, 4, 110-117.
- Fukami, T., & Wardle, D. A. (2005). Long-term ecological dynamics: reciprocal insights from natural and anthropogenic gradients. *Proceedings of the Royal Society of London, Series B. Biological Sciences*, 272.
- Gruner, D. S. (2007). Geological, ecosystem development, and local resource constraints on arthropod community structure in the Hawaiian Islands. *Biological journal of the Linnean Society*, 90, 551-570.
- Hammermann, W. M. (1980). *Fifty years of resident outdoor education: 1930-1980: Its impact on American education*. Martinsville, IN: American Camping Association.
- Kashlev, S. S., & Glazachev, S. N. (2000). Pedagogicheskaya diagnostika ekologicheskoy kultury uchashchihhsya: Posobie dlya uchitelya [Pedagogical diagnostics of the ecological culture of students: teacher's manual]. Moscow: Gorizont.
- Lucas, A. M. (1972). *Environment and environmental education: Conceptual issues and curriculum implications* (Doctoral dissertation). Retrieved from <https://eric.ed.gov/?id=ED068371>
- Marcinkowski, T., Bucheit, J., Spero, V., Linsenhardt, C., Engelhardt, J., Stadel, M., ..., & Guzmon, K. (2013). 5: Selected trends in thirty years of doctoral research in environmental education in Dissertation Abstracts International from collections prepared in the U.S. In R. Stevenson, M.

- Brody, J. Dillon, & A. Wals (Eds.), *International handbook of research on environmental education* (pp. 45-62). Washington, DC: American Educational Research Association and Routledge.
- Nesgoraeva, N. S., & Saveljev, V. G. (2009). Motivatsionno-tsennostnyj komponent v ekologicheskoj kulture studentov vuza [Motivational and value component in the ecological culture of University students]. *Omskij nauchnyj vestnik*, 5, 143-146.
- Nesgoraeva, N. S., & Saveljev, V. G. (2010). Formirovanie kognitivnogo komponenta ekologicheskoj kultury studentov vuza v protsesse praktiko-orientirovannoj obrazovatelnoj deyatel'nosti [Formation of cognitive component of ecological culture of University students in the process of practice-oriented educational activities]. *Vestnik Zabajkalskogo gosudarstvennogo universiteta*, 1, 39-44.
- Nogteva, E. Ju., & Lushnikov, I. D. (2004). Razvitie ekologicheskoj kultury uchashchihsya [Development of the ecological culture of students]. Vologda: IZ Viro.
- Odum, E. P., & Odum, H. T. (1953). *Fundamentals of ecology*. Philadelphia: W.B. Saunders Company.
- Polyanskaya, E. I., & Khitsova, L. N. (2015). Ekomuzej kak sposob formirovaniya deyatel'nostnogo komponenta ekologicheskoj kultury [Eco-museum as a way to form the activity component of ecological culture]. *Vestnik universiteta*, 2, 302-305.
- Ryabova, S. S. (2012). Tsennostnoe otnoshenie k prirode kak komponent ekologicheskoj kultury [Value attitude to nature as a component of ecological culture]. *Izvestiya Rossijskogo gosudarstvennogo pedagogicheskogo universiteta im. A.I. Gertsena*, 4, 245-250.
- Sitarov, V. A., & Urekeshova, L. (2017). Students ecological awareness development on geography lesson in the Republic of Kazakhstan. *Regional science inquiry*, 2, 187-196.
- Sousa, W. P. (1984). The role of disturbance in natural communities. *Annual review of ecology and systematics*, 15, 353-391.
- Wilson, R. A. (1994). *Environmental education at the early childhood level*. Washington, DC: North American association for environmental education.