
Socio-Psychological Factors that Contribute to and Impede the Process of Student Eco-Vocational Consciousness Formation

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Abstract

The relevance of the issue under study is caused by the need to form a new socio-psychological paradigm in the field of environmental education. It was clearly shown by the beginning of the new millennium, that the current environmental education is based on analytical knowledge of nature, which is pragmatically narrow and consumer-oriented, and therefore it could not fundamentally change the worldview of a significant part of the population. As a result, there is an objective need for a transition to a qualitatively new stage in its development. The purpose of the article is to determine the socio-psychological factors that contribute to and hinder the formation of eco-vocational consciousness of students. The study methods: The leading method for studying this issue is modeling, which allows considering the socio-psychological factors that contribute to and hinder the purposeful formation of eco-vocational consciousness structural components. The article identifies the main factors contributing to the process of eco-vocational consciousness formation: the need for a value orientation for the co-evolution of man and the biosphere; the ability of the individual of perceiving, experiencing and comprehension the relationship between the current environmental situation and occupational activities; the willingness of specialists to consciously implement environmentally reasonable occupational activities; public interest in the knowledge, transformation and maintenance of the environment in optimal condition and other significant factors. The factors that prevent the formation of eco-vocational consciousness are identified: the absence of a state customer for an ecologically-oriented vocational education; weak linkage of environmental training with vocational training; poor scientific and methodical provision of environmental orientation in vocational training, theoretical and methodical foundations for organizing the integration of environmental and vocational training; the need to coordinate and manage the system of electronic training, the creation of didactic complexes, appropriate methods. The data obtained in the work can be used in education to build effective educational programs for the development of eco-vocational consciousness; in practical psychology, in ecological psychology, as well as for further theoretical development of this issue.

Keywords: formation factors of eco-vocational consciousness, structural components of eco-vocational consciousness, integration of environmental and vocational training

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INTRODUCTION

Prerequisites for the development of eco-vocational consciousness emerged long before this time. Thus, in the second half of the 20th century, pedagogical science experienced processes of intensive formation: differentiation of scientific knowledge areas, clarification of the pedagogy philosophical foundations, its conceptual apparatus, and new integrative sciences developed: acmeology, valeology, axiology, andragogy, etc. (Ezhov et al. 2017, Firsova et al. 2018, Jaspers 2012, Kvon et al. 2018, Larionova et al. 2017, Lubnina et al. 2016, Mironova et al. 2017, Oborsky et al. 2018, Reimers 1992, Rubinstein 1957, Rudenko et al. 2015, Skrebets 1998, Zaitseva et al. 2017, 2018).

Since the 90s of the 20th century, the following trends have been traced in Russian education: the integration of Russian school and education into world culture, the restoration and further development of the traditions of the Russian school and education and, as the most significant phenomenon, the emergence of a new humanitarian education paradigm suggesting student-centered learning, creative assimilation of knowledge, which includes not only mastering the world knowledge, but also forming attitudes towards it (Danilov-Danil'yan 2001, Filatov et al. 2018, Gagarin 2000, Glazachev 1998, Petrovskaya et al. 2016, Potapova et al. 2018, Semenova et al. 2018, Shcherbakov et al. 2017, Yumatov et al. 2017). The essence of the current environmental crisis includes three main points: the rapid depletion of natural resources; rapid pollution of the environment (atmosphere, lithosphere, and hydrosphere); rapid increase in the number of population.

One should generalize the ways out of the environmental crisis proposed by many scientists:

1. Reasonable self-restraint in the use of natural resources, in particular energy sources;
2. Maintaining a dynamic balance between nature and man;
3. Formation of the ecological consciousness of the individual (Deryabo 1995, 1996, Ganzen 1989, Ivaschenko et al. 2008, Yasvin 2000, 2007).

In our opinion, it is necessary to take into account the formation of an eco-vocational consciousness of specialists. Eco-vocational consciousness is understood as integral mental education, reflecting the interaction of a specialist and Nature, which is based on eco-vocational knowledge, self-awareness as part of Nature

and a comprehension of the surrounding world through the prism of eco-vocational attitudes towards it, where the leading attitude is the positive attitude to the rational use of natural and human resources, intentions, ensuring environmentally and professionally reasonable activities for sustainable development and co-evolution of man and nature) (Cherdymova 2013). Thus, the transition to the sustainable development of the human community is the only way to save modern civilization from destruction (Sangadzhiev et al. 2013). There is a need to bring the norms of the environmental law of the Russian Federation in line with the norms of international law, which implies the development and perception of the most effective international concepts and ideas in the field of environmental protection by Russian science and law. Due to historical, scientific and educational reasons, Russia in this regard, despite its insufficient economic development, occupies a prominent place in the international arena. This is determined to a large extent by the existing system of environmental education. Environmental education is a continuous multi-stage interdisciplinary pedagogical process, which is still far from being implemented in modern educational institutions. The eco-vocational orientation introduces a new complex of philosophical, methodological and psychological-pedagogical ideas to education, which are designed to update its traditional system, to determine the activity main direction of the university, the University of the Future (Ju et al. 2017, Kryukova et al. 2017, Leontiev 1991, Nechaev 1997, Panov 2006, 2011, Zinchenko 2009)

In his work, academician Zverev (1994) writes: "The acuteness of modern problems of interaction between society and nature has set a number of new tasks for education, which are called upon to prepare the young generation that is able to overcome the consequences of negative human influences on nature and take care of it in the future. Menshikov (1988) also points to the need to form an eco-vocational consciousness: "... it should be not just about acquiring environmental knowledge, but about the desire and ability to consciously use this knowledge both in the interests of man and in the interests of social development." The development and formation of an eco-vocational consciousness is largely promoted by a continuous environmental education, the task of which is the formation of the eco-vocational imperative of a citizen's holistic worldview. To form environmentally conscious vocational behavior, an ecological style of thinking, it is necessary to overcome consumer attitudes towards natural resources, to awaken civic initiatives of the population, to transform

ideas about the inexhaustibility of natural resources, to form responsibility for the environment as an integrated system, the human society of which is an integral part. (Cherdymova and Sorokina 2013) One should mention, first of all, the properties and phenomena of the natural environment among the objective prerequisites of personal attitudes to the natural environment.

Social factor is the attitude of society to nature, affecting the position of the individual. Knowledge of the society experience not only expands knowledge, but also enriches the use of economic and moral-aesthetic environmental assessments. Comprehending its material and spiritual value, the person is more aware of the need to take care of its saving (Cherdymova 2013, Medvedev and Aldasheva 2001).

Psychological and pedagogical factor in the formation of environmental orientation is the process of education and training, during which they master socially valuable relationships and actions. Forming student positive attitude towards the environment is a purposeful process (Faleeva et al. 2017, Khapay 2009, Shagun et al. 1994).

Socio-psychological factor is the personal attitude to the natural environment, its own environmentally-oriented human activity, in which the goals of the individual and the collective, the relationship of the significant other to nature and society arise, appeared and are realized.

MATERIALS AND METHODS

The Study Methods

In the study process the following methods were used: the study of scientific and regulatory materials, forming psychological and pedagogical experiment, analysis and synthesis of psychological and pedagogical experience, psychological and pedagogical simulation and projecting, survey, questioning, interview, observation, testing, expert assessment; psycho-diagnostic methods; mathematical, statistical methods and methods of computer data processing.

The Experimental Base of the Study

For the experimental work the 1st, 3rd and 5th course students have been chosen. Students were divided into 4 groups: humanitarian, natural science based, economic and technical. The first group included students of the humanities area (46 people from the 1st course, 42 people from the 3rd course, 36 people from the 5th course), the second group included students of the natural sciences field of study (48 people - 1 course,

41 people -3 course, 42 people -5 course), the third group included students of the economic field of study (51 people -1 year, 53 people - 3 year, 48 people -5 year), the fourth group included students of technical field of study (34 people - 1 year, 46 people -3 year, 46 people - 5 year).

The Research Stages

The issue study was carried out in three stages:

At the first stage - the organizational and preparatory stage - the state of the issue was studied in the theory and practice of environmental training development for university students and its integration with vocational training; a conceptual model was developed for integrating environmental and vocational training of university students; a set of diagnostic techniques was developed.

At the second stage - theoretical and experimental, a structural-functional model of environmental and vocational training integration and the technology of its use in the higher education system were developed. The factors hindering the formation of eco-vocational consciousness were revealed.

At the third - analytical and generalizing stage, the results of empirical approbation of the study theoretical provisions in the field of eco-vocational education were generalized and systematized; recommendations for the introduction of a coherent level of integration of environmental and vocational training of different training profiles' students were developed.

RESULTS

Summarizing all the above mentioned, it can be assumed that the convergent level is the first stage of eco-vocational training, characterized by a one-sided orientation; accordingly, the relationship suggests the emergence of bilateral relations between modular integration units; reciprocal level of integration of environmental and vocational training means deepening and expanding these relations, transferring them to a higher level of partnership and corresponds to the second stage of eco-vocational training; the coherent level of integration expresses the moment of *coupling* of interacting modular units of environmental and vocational training, the emergence of *integration nodes*, putting together the necessary elements for this type of synthesis, this is the final stage of eco-vocational training, the most important feature of which is the emergence of a fundamentally new integrity that cannot be reduced to a sum of its components – eco-vocational consciousness of the individual.

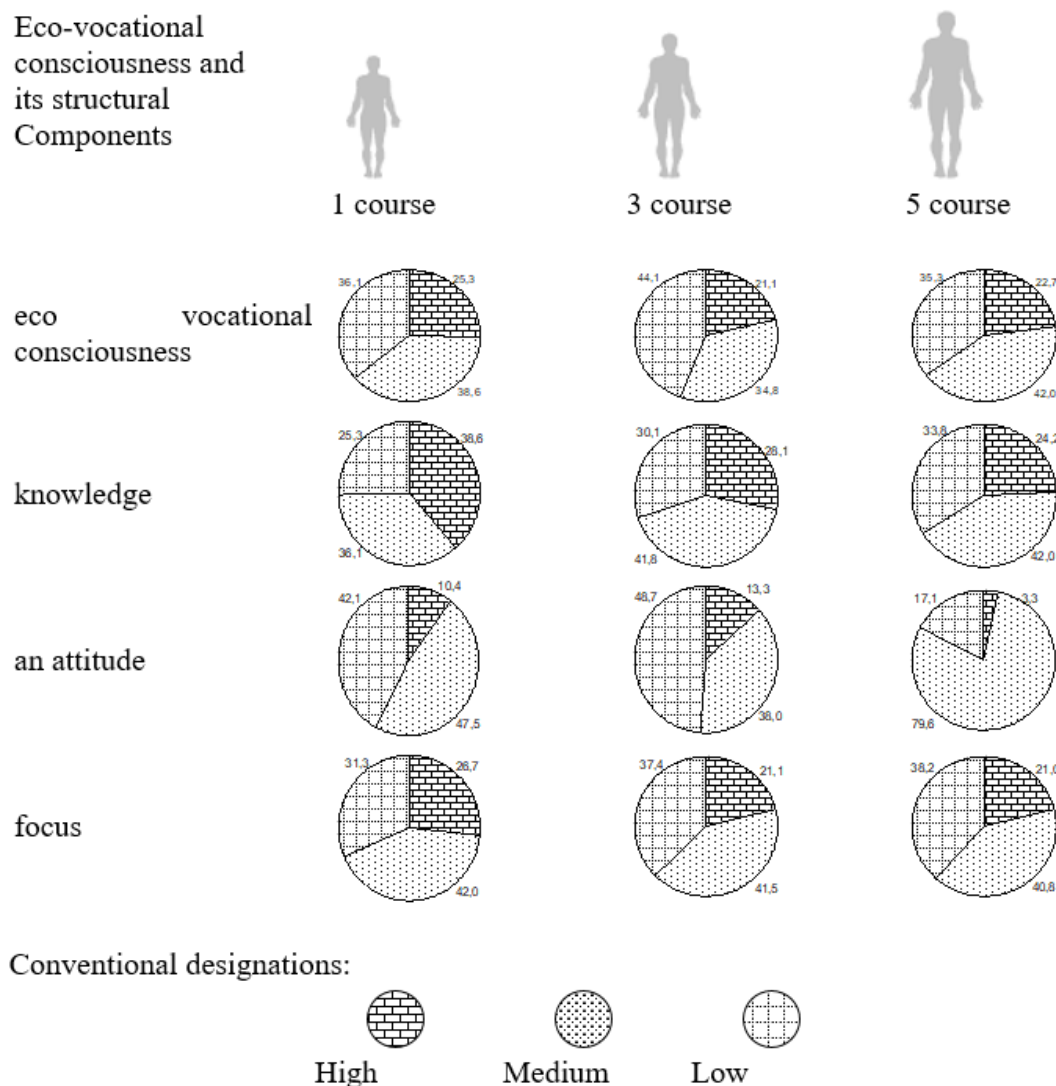


Fig. 1. Developmental levels of eco-vocational consciousness and its structural components in students

Table 1. Integrating environmental and vocational training

Levels of integration of environmental and vocational training	Content of integration of environmental and vocational training	Stages of formation of Eco vocational consciousness
I level Convergent	Cognitive	Stage I - the formation of knowledge
Level II Reciprocal	Value-motivational	Stage II - the formation of attitudes
Level III Coherent	Orientation Conative	Stage III - the formation of attitudes and intentions

Coherent level, like the two previous levels, is characterized by the property to include elements of other integration levels. The main feature of this level of integration is a direct targeted focus on obtaining an applied social and psychological result.

These methodological concepts' transferring into socio-psychological realities provides for building a socio-psychological model for integrating environmental and vocational training from a convergent to a coherent level with a splicing effect.

In the course of the study, the following features in the formation of student eco-vocational consciousness were established: there is a decrease in the indicators of eco-vocational consciousness from course to course: the greatest formation of eco-vocational consciousness is observed among first-year students. Moreover, among first-year students, this result is explained by the formation of such an indicator of eco-vocational consciousness as eco-vocational knowledge, whereas among students of the 3rd and 5th courses, the highest degree of formation was found in the indicator of eco-

vocational focus. The 3rd year students revealed a low level of formation of eco-vocational knowledge, eco-vocational attitude and eco-vocational intention. The monitoring carried out after the introduction of the socio-psychological model of integration of environmental and vocational training showed that the level of formation of the eco-vocational consciousness increases significantly. This indicates, in our opinion, that future specialists will have a more objective self-assessment of their own level of eco-vocational intention.

The experiment conducted within the framework of the socio-psychological model of environmental and vocational training integration developed by us influenced the development of the eco-vocational consciousness and its structural components, monitoring showed that the level of eco-vocational consciousness increases significantly:

- comparing the results on the components of the eco-vocational consciousness, one can see that the best indicators are for students of technical and humanitarian nature;

- The integration of environmental and vocational training to a greater extent influenced the development of the cognitive and conative components of the eco-vocational consciousness. Moreover, these components are more developed among the students of humanitarian and technical orientation of training;

- value-motivational and orientation components have the tendency to positive development. The greatest development of the value-motivational component was observed among the students of natural science orientation, and the orientation component among the students of natural science and technical orientation of training;

- the greatest splicing of environmental and vocational training, as part of coherent integration implementation, is observed among the students of the 5th year from the humanitarian group, students of the 3rd course of the natural science group and students of the 5th economic course and students of the 1st year of a technical orientation.

DISCUSSIONS

The emergence of global and local environmental problems is primarily associated with socio-economic factors, and therefore their solution should be carried out not only by technical means, but also by reorienting

the values, attitudes and behavior of individuals and groups in relation to the nature.

Since the beginning of the twentieth century socio-ecological factor has become the leading one determining the need for the formation of environmental awareness. The socio-ecological contradiction is *the collision between the growing influence of technical means, the transformative actions of people and the adaptive reactions of the environment, primarily the adaptive reactions of the biosphere*, in other words, it is the imbalance. The socio-economic contradiction concerns mainly the society itself. This is a contradiction between the desired goal of increasing efficiency and the actually existing (practiced) methods of intensification. Ecological and economic contradiction arises in the course of environmental measures taken to prevent damage, which reduce the economic efficiency of the particular production.

Today, the *greening* of all spheres of public life is vital. And, above all, of course, a person himself should be ecologized in all areas of his/her occupational activity: in production, in everyday life, in upbringing and education. The environmental problem has a number of such features that are very important to take into account in the process of environmental training and education of people.

Leading experts in the field of environmental education note that it is important to carry out the formation of a responsible attitude of the individual to the natural environment based on a number of psychological provisions: to take into account the interrelation of activity and consciousness in developing attitudes towards the environment; conditionality of the level of formation of ecological consciousness and culture of behavior in nature through the dynamics of activity, age development of the personality.

In the unity of its three foundations: ecology, ecological psychology and pedagogy, which are integrated within the framework of ecological psychopedagogy, environmental education can be effectively carried out. From the standpoint of environmental psychopedagogy, the goal of environmental education is the formation of an eco-friendly personality. An eco-friendly person is a person with an eco-centric type of ecological consciousness.

The value orientation of environmental education and eco-vocational training, in particular, on the co-evolution of man and the biosphere as a psychological and pedagogical factor is considered in the works of

many famous scientists. The concept of sustainable development not only was not rejected, but found its development in many works, and today it is accepted by many analysts essentially as the main and non-alternative new civilizational development paradigm. The understanding of the concept of sustainable development itself and the assessment of the role of education in the implementation of this concept have changed. Today, Sustainable Development of the Human-Society-Nature is understood as social development, in which its natural basis is not destroyed, the living conditions created do not entail human degradation, and social-destructive processes do not develop to the extent that threatens the safety of society.

CONCLUSION

Of all the variety of factors that adversely affect the quality of environmental education, the most significant ones, in our opinion, are the following:

- Lack of purposeful and consistent state and regional policies on environmental orientation in the vocational training of university students;
 - lack of state and regional educational standards of environmental orientation at all levels of vocational training, ending with post-graduate education, including professional retraining and advanced training of employees of enterprises, institutions and government bodies;
 - Lack of a state customer for environmental-oriented vocational education;
 - Weak linkage of environmental training with vocational training;
 - Poor scientific and methodical support of environmental orientation in vocational training, theoretical and methodical foundations in the organization of the integration of environmental and vocational training;
 - The need to coordinate and manage the system of eco-vocational training, the creation of didactic complexes, appropriate techniques;
 - the lack of a quality system of eco-vocational training, including forecasting goals and results, technological support, the formation of not only eco-vocational knowledge and skills, but also attitudes, focuses, intentions, personal, spiritual, and civilian qualities of future professionals;
 - Unsatisfactory training of pedagogical and scientific personnel of the eco-vocational training system;
 - Weak (and often negative) role of the mass media in environmental awareness, education and upbringing of students;
 - Insufficient adaptation and use of international experience in the field of environmental orientation of vocational training.
- In our opinion, the main factors contributing to the process of formation of eco-vocational consciousness are:
- The need for the value orientation of eco-vocational training on the co-evolution of man and the biosphere;
 - The ability of the individual to perceive, to experience and to understand the relationship between the current environmental situation and occupational activities;
 - Eco-vocational readiness of specialists to consciously implement environmentally appropriate occupational activities for the purposes of sustainable development and the coevolution of man and nature;
 - Public interest in the cognition, transformation and maintenance of the environment in optimal condition;
 - changing personal attitudes towards the natural environment, own ecological-oriented occupational activity of a person, in which the goals of the individual and the collective arise, are realized and implemented, the attitude of the significant other to nature and society;
 - increasing man-made and anthropogenic pressures on humans and the natural environment, expanding the range and level of hazards of the modern world, as a biosocial factor;
 - changes in science and technology, aimed at the development of research on natural and man-made hazards, the development of methods to reduce the negative impact of man on the natural environment;
 - environmental education implemented in the country as a key social factor of changes aimed at the sustainable development of the Human-Society-Nature, while environmental education is declared the main means of harmonizing man and nature, and that

is where the resource is implemented which is realized in the subsequent occupational life of a person; – one’s own ecological-oriented human activity, in which the goals of the individual and the collective, the attitude of the significant other to nature and society arise, are realized and implemented.

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