

ТЕОРЕТИЧЕСКИЕ И МЕТОДОЛОГИЧЕСКИЕ ПРОБЛЕМЫ СОВРЕМЕННОЙ ПСИХОЛОГИИ И ПЕДАГОГИКИ

THE ECOLOGICAL COMPETENCE OF FUTURE SPECIALISTS*

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The study aims at identifying the essence-functional and structure- and content-related particularities of future employees' environmental competence, as well as the conditions and factors of its development. It features the results of the theoretical and empirical analysis of the issue and outlines the prospects for future research.

Key words: environmental competence, future employee, conditions and factors of development.

Introduction. The topicality and importance of scientific understanding of the methods used for cultivating future employees' environmental competence, the specific scientific analysis of objective and subjective factors, the conditions and means of tailoring the educational process in universities are justified, firstly, by a growing number of environmental issues on a planetary scale and, secondly, by the social and cultural need to develop students' abilities, as well as their environmentally-oriented and humanitarian values. This calls for implementing personality-oriented, potential-building and health-saving educational techniques, ensuring robust personal and professional growth of future employees, using specific active methods of training personnel, along with the traditional ("knowledge-based") ones to solve the mentioned problems.

Problem statement. The study, the basic results of which this article represents, was aimed at identifying the essence-functional and structure- and content-related parti-

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cularities of future employees' environmental competence, as well as the conditions and factors of its development.

Results. First of all, the study finds that today the key approaches to developing the environmental competence of future employees are:

— the psycho-didactic approach (education promotes the actualization of reasoning and the content-related particularities of students' psychological development via studying a certain subject) [14; 15];

— the eco-psychological approach (education aims at creating a potential-building environment as a mixture of conditions, influences and opportunities for developing a personality existing in the social and geographical surroundings) [1—7; 14; 15];

— the competence-related approach as such (education aims at mastering relevant skills including students' personal attitude to them and the essence of profession) [1; 3; 7; 8—12];

— the akmeological approach (education aims at developing an individual progressively, holistically and optimally, as well as at one's self-actualization in the course of life); the study also maintains that the akmeological approach is the one integrating all the others by allowing both the use of their positive productive ideas and the understanding of the bases of developing future employees' environmental competence [5; 13].

By synthesizing, revising and expanding the existing research on the environmental competence of an individual the study covers the essential [1—12; 14; 15] (category-, function-, structure- and substance-related) distinguishing traits of environmental competence by defining the following terms:

— “environmental skills” as a mixture of interrelated personal qualities (knowledge, abilities and skills,) necessary for various professional activity types from the viewpoint of environmental feasibility, including environmental protection activity;

— “environmental competence” as an individual's ability to integrate environmental knowledge, abilities, skills and ways to use them in various professional activity types, an individual readiness to involve in environmental protection activity, expertise in nature conservation and solving environmental problems; at that, environmental competence is viewed as a part of an environmentally-oriented personality of a future employee being both a result of mastering key skills in the course of personal development (pertaining to culture, values and meanings, as well as personality development) and an integral personal quality. From the point of view of its structure and meaning this quality is reflected by the cognitive and reflexive components, as well as the ones related to the combinations of motivation and values, actions and behavior, emotions and will; and from the viewpoint of its functions it is defined by those pertaining to the mindset, methodology, environment, values, expectations, society, culture and profession.

In addition to this, the study also analyzes the environmental competence of future employees in the context of integrated psychological, pedagogical and akmeological background:

— as a linking element in the system of fundamental formations of an environmentally-oriented personality — an environmentally-oriented consciousness, environmental culture and environmentally-oriented mindset — that shows in the environmentally-oriented activity and fulfils functions related to the mindset, methodology, environment, values, expectations, society, culture and profession;

— as one of the fundamental types of professional competence that is inter-professional (ideally — supra-professional); as an immanent component of a high professional level that allows to analyze environmental issues within one's profession and also personal traits which enable an employee to exercise professional activities in the context of their environmental feasibility;

— as a basis of an environmentally-oriented mindset which determines one's values, ideals, attitude to nature manifested in various types of the environmentally-oriented activity which at its highest (ideal) level of development makes one an "environmentally-oriented individual within developing natural surroundings", within the joint harmonious and sustainable development of the "man (personality, activity) — nature (surroundings, habitat)" system. The principal conditions of experiencing such a development are fixed fundamental akmeological patterns and their conscious development.

The study identifies the criteria and relevant indicators for evaluating environmental competence; these pertain to:

— motivation and values (whether or not an individual is consistently interested in solving environmental problems, demonstrates the need to improve one's environmental knowledge, is motivated to exercise an environmentally-oriented activity (including professional activity), has significant environmentally-oriented values that are primarily personal, etc.);

— cognition (volume, awareness and quality of environmental knowledge; the level of mastering rational techniques of acquiring and processing environmental information, as well as the methods of taking environmentally-oriented decisions (also related to particular environmental situations) while exercising professional activities;

— actions (the readiness to transform the natural surroundings on the basis of one's expertise in using environmental knowledge; knowing how to outline and implement ideas relating to environmental feasibility via professional and other types of activities; the ability to find creative solutions for real environmental problems; expertise in environmentally-oriented activities, including nature conservation, etc);

— reflection (reflexive personality approaches; self-evaluation in terms of the attitude to nature and oneself as being an integral part of it; self-evaluation in terms of the readiness to exercise environmentally-oriented professional activities and in terms of its results, including personal social and professional experience; personal aspiration for self-education and development).

The first of stage of empirical research looking into the issue of cultivating the environmental competence of future employees included expert analysis and problem evaluation, the second stage — surveying and task performing. Additionally, observation and interviews were also used.

During the expert analysis (conducted by 28 experts — teachers of environmental and eco-psychological subjects in universities) of modern future employees' environmental education it was noted that the environmental competence of a professional in the face of modern global environmental problems is a fundamental which is 37% inter-professional and 63% supra-professional, and that any profession today must take environmental issues into account; to achieve this, an employee must possess certain personal

qualities which will promote exercising his professional activity from the point of view of its environmental feasibility.

The expert analysis also highlighted that the cultivation of environmental competence can be effective only if the maximum amount of various environmental education forms is used, and an active shaping of an environmentally-oriented personality must be started as early as at a pre-school (83%) and elementary-school (17%) age; in addition, a greater continual environmental orientation of textbooks is required during education and upbringing (92%). The experts noted the importance of environmental education in its active forms in universities, in particular, the inclusion of students into various types of environmentally-oriented activities (during classes, extracurricular activities and independent work); the significance of a greater environmental orientation of universities in general, including the social as well as space- and object-related components (a more eco-friendly educational environment organized by specialization and natural surroundings included into the general educational environment).

The second stage of the study consisted of conducting a survey of future employees learning various professions at the environmentally-oriented MNEPU University. The survey covered 166 students (42% of them men and 58% women) aged from 17 to 19 (43%), from 20 to 22 (54%), from 23 to 25 (2%) and over 25 (1%). Of those polled, 32% were first-year students, 46% were third-year students, 22% were fifth-year students. The departments were represented in the following way: Department of Environmental Science — 16%, Department of Law — 18%, Department of Foreign Languages — 27%, Department of Economics, Management and Finance — 28%, Department of Political Science (Political Science program) — 11%.

The questionnaire contained 29 questions/tasks most of which can be categorized into five groups:

- 1) questions aimed at identifying the level of respondents' concern about environmental problems, environmental awareness (erudition in the field of natural science and ecology) and ways of obtaining the relevant information;
- 2) self-evaluation in terms of environmental competence;
- 3) evaluation of fellow students' environmental competence;
- 4) a task on highlighting key components of environmental competence as well as how it shows in the course of a future employee's professional activity;
- 5) questions/tasks related to indicating effective education forms that are used for cultivating environmental competence of a future environmental scientist.

The results of the survey are as follows.

1. A vast majority of respondents (92%) are interested in ecology against 8% who are totally indifferent to it; 19% of the former are men, 18% women. Three-quarters (74%) of students obtain information on environmental issues from TV and radio shows, 33% from newspapers and magazines, 21% from their peers and 16% from the Internet. Of those polled, 13% read ecology-specific literature; 32% believe that the coverage of environmental issues by the mass media is insufficient. Most (52%) think that, although environmental problems can be seen in the news, these appearances are only formalities, and episodic ones at that. A vast majority are concerned about air and water pollution

in the Moscow region and Russia in general, 43% are worried about felling, 36% about land pollution, 31% about biodiversity loss, 28% about forest fires. Concerning the consequences of an ecological crisis, the biggest worry proves to be bad food quality (for 51%) and waste disposal (for 46%). Although many students do not indicate interest in environmental issues, all of them think about the reasons for an ecological crisis: only 3% marked “not sure” as an answer. Specifically, 55% of respondents believe it is environmental pollution, 34% think rampant resource consumption is to blame (of the latter, 36% link it to a lack of effective environmental legislation, 28% to the man’s utilitarian approach to resources). Hence, a vast majority are concerned about environmental issues to some extent. The relevant information is mainly obtained from TV and radio shows. Over half of the respondents believe environmental problems are only covered formally and episodically.

2. Students’ opinion concerning their own environmental competence is quite high: 5% consider themselves “highly competent”, 24% “rather competent”. Half of the polled believe they are “fairly competent”, 10% marked “rather incompetent”, and only 4% think themselves “highly incompetent”. As expected, the numbers vary by department: 52% of the Department of Environmental Science students consider themselves “highly competent” while 28% of those attending the Department of Law believe they are “rather incompetent” (largest share compared to other departments).

Meanwhile, 74% of the students questioned would like to expand their knowledge of environmental science, and it is more typical of women (80% against 63% for men). The difference by department regarding this question is very pronounced: 97% for the Department of Environmental Science, 67% for the Department of Economics, Management and Finance, 52% for the Department of Law, 84% for the Department of Foreign Languages, 67% for the Department of Political Science (Political Science program). It should be noted that the higher the level of environmental competence, the stronger the wish to expand one’s knowledge on the matter. However, of those indicating high environmental competence, only 9% continually self-educate on the environment and nature conservation, while 78% do so from time to time and 13% never deliberately look into these issues.

3. While considering their own level of environmental competence rather good, students of all departments have a propensity to treat their fellow students more critically. This is especially true for those attending the Departments of Law and Political Science.

4. Speaking of the components of environmental competence, as well as their manifestation in the course of professional activity of a future employee, 61% of students prioritize environmental knowledge, 60% environmentally reasonable behavior and, in particular, following environmental norms. Almost half of respondents (47%) believe that environmental competence implies environmentally-oriented activities. Continual self-education on environmentally-related issues as a part of environmental competence is indicated only by 15% of students.

5. A vast majority (81%; only future environmental scientists were questioned on this) consider that traditional university education today is the most effective method of training professionals in environmental science and nature conservation. Among other

forms of education, 37% listed professional consulting services over the Internet, 30% using continual self-education techniques, 15% short seminars on topical environmental issues, 11% distance learning, 7% non-traditional forms of education; 4% of the polled did not indicate any. However, almost every student questioned believes that the modernization of the professional education system requires a greater connection between theory and practice via an increased number of trainings and business games related to modeling future professional activity, as well as a greater attention to organizing internships.

Synthesizing the theoretical and empirical research allowed to devise a systemic description of environmental competence of future employees engaged in various professions which includes the cognitive and reflexive components, as well as the ones related to the combinations of motivation and values, actions and behavior, emotions and will; with an addition of psychological qualities, skills and development determinants.

The cognitive component is a system of environmental knowledge (related to the mindset, natural sciences, legislation and practice) as a basis for the development of an environmentally-oriented personality.

The reflexive component is an adequate self-esteem regarding one's attitude to the natural surroundings, habitat and life in general; a high level of reflexive culture allowing to adequately perceive one's own readiness to exercise an environmentally-oriented professional activity, as well as its results and social and professional experience.

The component relating to motivation and values is a mixture of interests, needs and values motivating an environmentally-oriented professional activity.

The component relating to actions and behavior is an ability to put one's environmental knowledge to professional practice in general, using it to solve particular environmental problems and to actually improve the environmental situation; it is also one's personal experience of environmentally-oriented activity.

The component relating to emotions and will is one's attitude to nature, to global and regional environmental problems from the viewpoint of emotions and will; the conscious or subconscious unity with nature, its harmony and holism; a feeling of joy from experiencing nature's harmony and a feeling of suffering from the damage its beauty takes.

The fundamental personal and professional qualities of an environmentally competent employee are environmentally important personal qualities — humaneness, empathy, thrift, responsibility, initiative, adherence to one's principles; general personal qualities — self-discipline, responsibility, commitment, reflexivity, self-efficiency, internality; intellect; focus, memory, social and perceptual abilities, introspection; personality potential; ability to empathize in all types of relations with nature, including those occurring in the process of exercising professional activity and undergoing professional education; complex personal abilities related to exercising certain activities (perceptual, communicative, ability to learn, etc.).

Based on the results of the study conclusions were made regarding the conditions and factors of development of future employees' environmental competence.

The general conditions are an active inclusion of future employees into various types of environmentally-oriented activity (which will facilitate the discovery and optimal manifestation of the creative side of their psychic); the organization of environmentally-oriented akmeological surroundings which will stimulate the development and self-development of students' environmental competence.

Among the most important factors are special training for university teachers to assure effective environmental education at all personnel training stages; a complete individual teaching style for all teachers, as well as their reflexive and analytical skills and creativity used for developing it; a non-formal approach to environmental education achieved via preliminary understanding on the part of the teacher of the environmental education algorithm (i.e. the teacher will need to determine whether achieving the set goals will help to cultivate a student's environmental competence, as well as the manifestation and development of the student's conation; the teacher will also need to define the role of the used akmeological and teaching techniques in cultivating this competence).

Conclusions. The study defines the essence-functional and structure- and content-related particularities of future employees' environmental competence, as well as the possible conditions and factors of its development. The prospects of further research are outlined. They are related to practical tests of the mentioned factors and conditions which will require modeling the environmental competence for various professional fields and introducing an environmental component to the job description; identifying the psychological particularities inherent in the activity of an environmental scientist, as well as the criteria and levels of his/her professionalism, the types of professional competence, the relevant personality qualities; profiling professional fields from the viewpoint of environment; researching the cultural and technological issues pertaining to the environmentally-oriented decision-making process.

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ЭКОЛОГИЧЕСКАЯ КОМПЕТЕНТНОСТЬ БУДУЩИХ СПЕЦИАЛИСТОВ*

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В исследовании определены сущностно-функциональные и структурно-содержательные особенности экологической компетентности будущих специалистов, условия и факторы ее развития. Представлены результаты теоретического и эмпирического изучения проблемы, намечены перспективы дальнейших исследований.

Ключевые слова: экологическая компетентность, будущий специалист, условия и факторы развития.

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