

Research of the students-metallurgist ecological consciousness dynamics during the educational process in National Metallurgical Academy of Ukraine



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Abstract

The results of monitoring the level of ecological consciousness of students- metallurgists in the period of study in National metallurgical academy of Ukraine are shown in the article. To solve this problem M. Rokich's techniques: "Dominant" and "Naturaphil" were applied. The data obtained can be used in the educational process to improve the efficiency of environmental education.

Keywords: METALLURGY, ECOLOGY, STUDENTS, ENVIRONMENTAL EDUCATION, ECOLOGICAL CONSCIOUSNESS, SYSTEM OF VALUES, NATURE

Increasing the ecological consciousness level of student is the main objective indicator of the efficiency of the university teaching staff towards the ecologization of education [1, 2]. Analysis of the level and trends of ecological consciousness changes allows you to quickly identify the advantages and disadvantages of the educational process and to implement measures to improve it. Therefore, the aim of this work was the monitoring of changes of ecological consciousness level of students-metallurgists during the studying in National Metallurgical Academy of Ukraine (NMetAU).

The results of research

Investigations were performed in several steps using various techniques. The methodology of M. Rokeach was used in the first step for the diagno-

sis the structure of students' value orientations system [3]. Detailed results of the research are given in [4]. The study showed that health, happiness in the family, interesting work are major in the system of value orientations of students, social acceptance and happiness of others are insignificant. The most important qualities to achieve the objectives for them are education, responsibility and honesty, the least important are intolerance to shortcomings, high demands and rationalism. The nature is attributed by students to secondary values.

In many ways, similar results were obtained when assessing the degree of priority of students' attitudes to the nature by express method "Dominant" [5] (Table.1).

Table 1. Average (a) and normalized (b) ranks of objects categories (diagnosis of by the "Dominant" method)

Object category	Main variant		Modified variant				
			Average rank of the object in terms			a)	b)
	a)	b)	Emotional	Informational	Practical		
Attitude towards myself	4.17	1	3.79	3.8	4.45	4.02	1
Education	4.21	2	4.89	3.94	3.78	4.2	2
Work	4.46	3	4.28	4.85	4.48	4.54	3
Material values	4.94	4	5.01	4.42	4.71	4.71	4
Morality	5.0	5	4.33	5.2	6.61	5.38	7
Nature	5.16	6	5.69	4.94	4.35	4.99	5
State	5.32	7	6.33	5.77	4.88	5.66	8
Relationship of man and woman	5.41	8	4.45	5.71	5.06	5.07	6
People around	6.33	9	6.23	6.37	6.68	6.43	9

124 students took part in the test, 67 of them were ecologists, 57 were of other specialties. In basic version the ranking of 9 objects categories was performed in order of their importance and then they were divided into groups with high, medium and low attitude dominance. In a modified version three series of surveys were carried out with ranking objects in emotional, information and practical terms, and then the average rank was calculated. As seen from

Table 1, the nature takes last place in a group with an average dominance attitude.

Diagnostics of the ecological consciousness level of students and its changes over the period of study was carried out by the "Naturaphil" method [5]. 180 people participated in the study, including 108 ecologists and 72 students of other specialties (Foundry production and Materials Science).

Diagnostics was carried out on the 4 major scales;

each consisting of 10 points (on principle "yes - no"). Perceptual-affective scale assesses the attitude to nature of aesthetic and ethical character; Cognitive - aspiration to its cognition; Practical - the perception of nature as a source of financial gain; Scale of actions - human activity to improve the attitude of surrounding people to the nature. Additional scale of naturalistic erudition shows the level of knowledge about nature.

The survey data were compared with the control keytable, the amount of points received for each scale

and then the ratio indicator of attitude to the nature as the sum of points on the four major scales were determined. The results were transferred into standard stanayny and T-points scales and indicators interpretation of attitude to the nature (from very low to very high) was carried out using a special table.

The results of diagnostics (Fig. 1) show that most of students-ecologists and students of technical specialties have an average level of intensity of attitude to the nature.

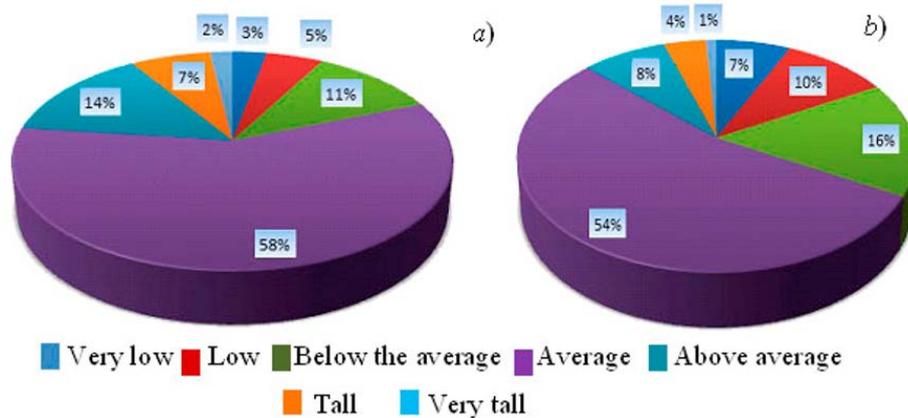


Figure 1. The level of attitude to nature students-ecologists (a) and students of technical specialties (b) (diagnostics by the method "Naturaphil")

At the same time ecologists have about 2 times higher percentage of the followings levels: very high, high and above the average, therefore, they have less percentage levels with low attitude to the nature.

Figure 2 shows the variation in ecological consciousness level of students during the learning process. Trend is positive on all scales; a close connection

between studying time and the level of components is observed: a correlation coefficient is 0.9 and 0.98, respectively, for the cognitive and practical scale; 0.84 and 0.86 for the scale of actions and naturalistic erudition; 0.92 on the generalized indicator, and only on the perceptual-affective scale it has a relatively low value of 0.62.

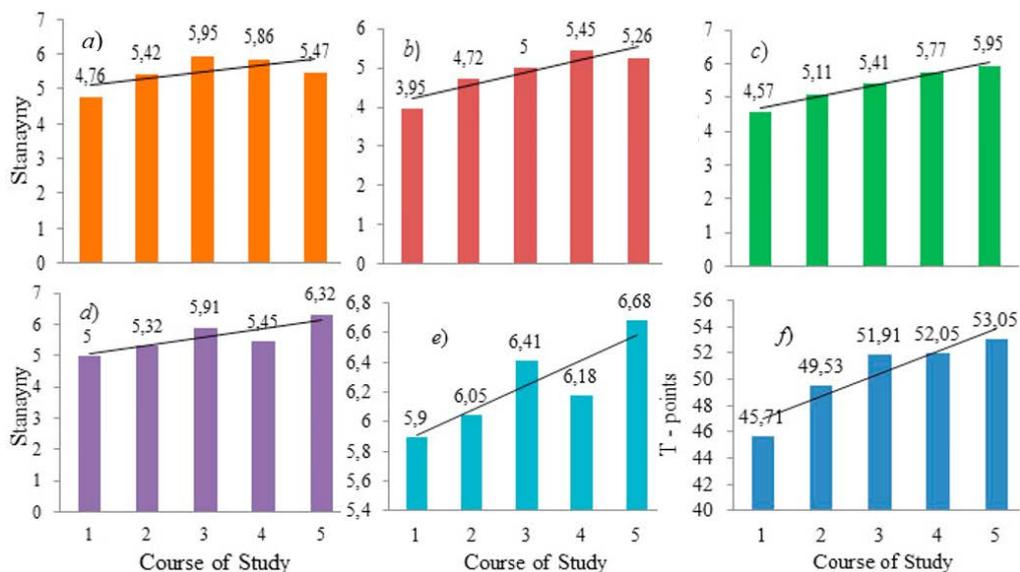


Figure 2. Changes in the intensity level of the subjective attitude to the nature of students of different courses: perceptual-affective scale (a), cognitive scale (b), practical scale (c); scale of actions (d), naturalistic erudition (e) and generalized indicator (f)

Conclusions

Formation of society ecological consciousness is one of the key conditions for the solution of environmental problems and sustainable development of the state. Environmental education of future professionals is one of the priority tasks of the higher school.

The studies have shown that students referred the nature to secondary values, due to the predominance in our society of ecological outlook of anthropocentric type.

The ratio of students-metallurgists to the nature is characterized by rank $5 \div 6$ out of 9, which corresponds to an average dominance. At the same time a higher rank has a practical aspect, then informational and emotional.

The majority of students have an average level of ecological culture, and besides ecologists have almost 2 times higher percentage of higher intensity levels of attitude to the nature than that of engineering specialties students. A high level on a scale of naturalistic erudition shows that students-metallurgists get high-quality environmental knowledge during the studying process.

Positive dynamics in the learning period and a high final level of all intensity components of the students' subjective attitude to the nature indicates the high-quality environmental training of specialists in the National Metallurgical Academy. In turn, environ-

mentally educated and competent professionals are able to effectively solve the problems of ecological safety insurance of metallurgical industry.

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