

THE RELEVANT ASPECTS OF NATURAL SCIENCE EDUCATION HUMANIZATION

Dear Readers!

It is obvious that the theories of Piaget and Bruner left some gaps in the assessment of the evolution of children's individuality. Naturally, it was noticed by such famous researchers as Maslow, Rogers, etc. who were the classics of psychology. From the viewpoint of psychology, self actualization, self-expression, etc. are notably crucial aspects while the educational process is approached as the pupil's intrinsic, controlled phenomenon. To some purpose, the Lithuania's National Concept of Education (1992) maintains that humanism is the assertion of human incomparable value, freedom of choice, and responsibility. As the reform of the Lithuanian educational system is still in progress more and more attention is focused on individual training and human values fostering. The present humankind has to solve a number of serious problems. Under the threat of the ecology catastrophe, concern for physical and spiritual health care is felt. All our relations with nature turn out to be problematic. **The establishment of a harmonious correlation between nature and society** becomes an important task. We cannot exclusively rely on knowledge and mind in any activity as these are not overall dimensions. We also understand having no opportunities to become the lords of nature. According to Nazarenko, ecology problems can be solved taking advantages of science and technology achievements. However, the dynamics of the process should become individual and public, high virtuous and ecologic culture (Nazarenko, 1993). A psychologist Asmolov proposes that the worst of it is that culture oriented towards benefit. Therefore, the humanization and socialization of natural science education is a relevant pedagogic problem.

Humanism, democracy and public spirit are the values common for contemporary school. The goal of the educational reform is to make a school the place of individual development rather than an institution of gaining knowledge. Different authors submit various concepts of humanization. Some of them (Rogers, 1969, Bills, 1981, DeHart Hurd, 2002; etc.) prefer humanization of the educational process, others emphasize teaching content alteration in terms of its humanization (A. Juška, 1991, Ch. Patterson, 1973, etc.) or stress natural schoolchildren's need to learn and knowledge (Butkienė, 1993; Lukšienė, 1993). Fostering scientific world outlook is also accentuated because its relevance to natural science humanization is undoubtedly considerable and contains resistance of moral values to pragmatics and materialization introducing such basic concepts as the earth, the forest and the lake which are alive as you and me (Ramančionis, 1996). The author thinks that natural science education is notably supported by the heritage of an ethnic culture which can be applied:

- trying to engage pupils in relating an expository subject to real life using different interpretations (customs, archaic village routine and works);
- giving a sense to objects and phenomena at spiritual value-based level (mythology, Baltic religion, folklore);
- as a means to see phenomena and objects (birds call imitation, traditional medicine, ethno cosmology, weather forecast);
- for natural science education (annual holidays, songs, games, dances, roundelays) (Ramančionis, 1996).



Humanization brings science closer to the humanistic criteria (Zakgeim, 1991). The author points out that the systems created by human being often backfire on themselves. Some authors (Rudenko, 1991, Kuznetsova, 1989, Zakgeim, 1991) perceive humanization as the “humanizing” of training aids. The educologists of this trend mainly see two ways to solve the problem:

1. “humanizing” of training courses (chemistry, physics, biology), i.e. the popularization of scientific ideas and theories, highlighting of historic evolution, etc.
2. renovation of training aids (text books, supplementary didactic material, etc.)

Other authors (Uktveris, 1997, Vaitkevičius, 1999, Šapokienė, 1995) find humanization as the perception of a harmonious interaction between human being and nature. According to Uktveris, “contemporary school is not ready to perceive and inspire the senselessness of consumerism, i.e. to lead a consumer way of life to the abyss that uncloses to humankind (Uktveris, 1997). Therefore, contemporary humanistic philosophy and other humanistic theories focus on the humankind difficulties highlighting global crisis scale and format (Aramavičiūtė, 1996). Natural science education performs a leading role in the process of an individuality creation. Yet ancient thinkers called a man “zoopolitikon” (Aristotle). However, sciences including natural science education are specific. The essential thing is a question of what sort of philosophy will be the basis for natural science education (natural science education is a subject of social knowledge; thus it is a subject of social sciences /educology/). Yet human being set up “over nature” using *extrinsic* (sensual) and *intrinsic* (reflex) methods (20th century natural science positivism) and even has become the lord of it. Meeting his biological requirements human being started reformation of nature itself disregarding for possible consequences. Humankind has survived a negative influence of various theories (racism, Nazism, Marxism, social Darwinism, etc.). A well known Lithuanian thinker Paškus stated that “Marx paid attention to the lack of bread, Freud – to the lack of sex and Frankl – to the lack of sense. A westerner has already been full of bread and libido but the questions of purport of life still worry. The signs of spiritual hunger seems to appear brighter and brighter (Paškus, 1992). The utopian ideas to create a “sterile” Gnostic instrument on the basis of natural science and biologic reductionism prevailed in the 20th century. G.Merkys maintains that an idea of constructive compatibility of various cognitive strategies is postulated in contemporary social research methodology (Merkys, 1997). Therefore, modern philosophical movements such as phenomenism, pantheism, etc. understand human being as a systemic unity of the body, psyche (*mind, emotions, volition*) and spirit (*trust, hope, love*). In this unity context is only possible natural science humanization.

Thus, considering the problems of phenomenological – hermeneutic natural science education (*the aspects of hypotheses generation, interpretation attempts, holistic approach towards an individual and society*) becomes righteous.

Pre-eminently the humanization of natural science education means the raise of values in the educational process

Yet human being perceives aesthetical, ethical or other values only when exceptionally subtly minded. The perception of nature as a value is primarily delimited the material interests. Aesthetical values are versatile and serve everyone. Perceiving and cherishing ethical values and moreover, following them is a more difficult task. A human educational process is a marvellous one as it is able to point out the subtle features of human mind and soul. From this standpoint, natural sciences teaching at school are very auspicious. In this case, the humanization of natural science education can be understood as an undivided action of the basic education principles in the training process. The humanization of natural science education (as indicated in the matrix) is only effective when implementing the systemic expression of these principles in the educational process.



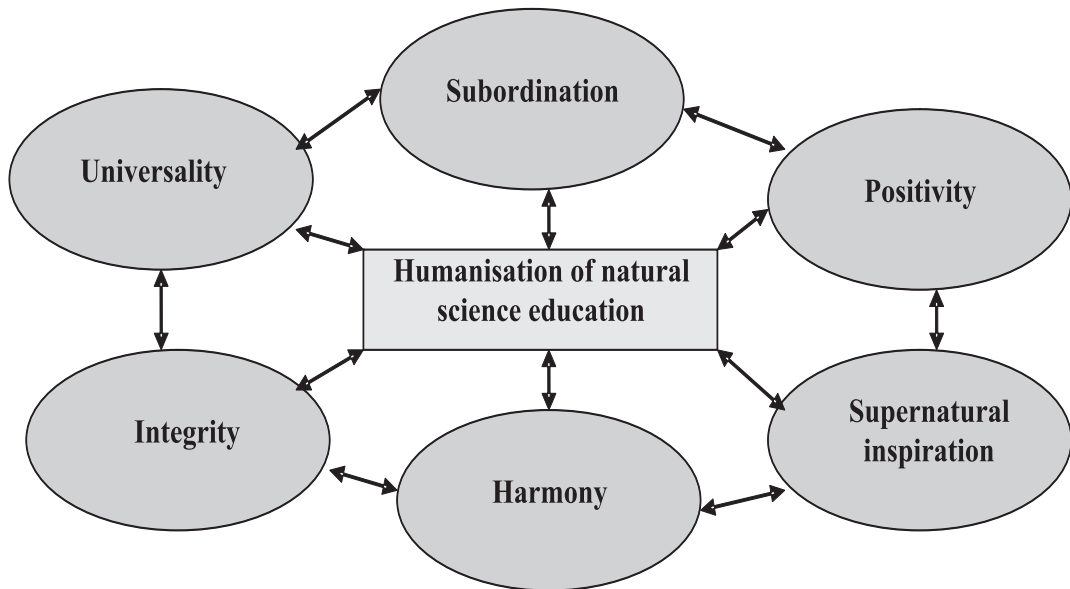


Figure 1. The matrix of the humanization of natural science education (Lamauskas, 2003).

Another important aspect of the humanization of the educational process is that we need to pay close attention to responsibility sustaining and ability to predict possible negative outcomes (in nature and society).

Facing the problem of humanization three aspects should be emphasized:

- the child in the family (living conditions, human/ unhuman relations among family members, parents' attitude towards school and their position on the educational methods used in the family, etc.);
- the child at school (the teacher's figure, his/ her professional competence, the understanding of goals, activity, the correlation between students and teachers, a sense of fear, constant tension in the classroom or self-confidence and mutual respect, formalism/ in-formalism teaching natural sciences etc.);
- the child in society (socialization, society's value orientation towards nature, active child's interaction with a natural/social environment, etc.). A spontaneous interest of the world study is typical for him/her as s/he is opened to new information (Skvorcov, 2002).

School and family education closely correlate and are interdependent. Teaching natural sciences obliges:

- to frame a concept of nature as a value in the child's (pupil's) consciousness;
- to promote deliberate, exemplary behaviour in nature;
- to stimulate an intense students' environmental activity.

The following practic solutions of humanization of natural science education can be highlighted:

- training courses should include such topics as an energy crisis, air and water pollution, solid waste utilization, food resources and healthy diets, the impact of drugs, nicotine, alcohol and cosmetics on human organism, science and technology progress and the quality of life, revolution in natural sciences (for instance, biology), etc.;
- to apply different forms of individual work with students, e.g. designing, games, imitation, field practice, etc. According to Piaget, games are the most important factor in the child's socio-cultural development; to refuse such methods of teaching as testing



- animals (demonstration, preparation, etc.);
- every child has to be involved into the intense activity of natural history whetting a wish to know and research and preaching a healthy way of life in a protected environment (explaining the outcomes of negative social phenomena such as alcohol, drugs, etc.). When participating in the activities of natural history we should avoid emphasizing the utilitarian (pragmatic) aspect of research. A well known educator Ruzgas proposed that children often damaged nature only because their humanistic approach had not been developed – they did not understand the importance of nature to human being, did not perceive its beauty, etc.

Thus, contemporary school cannot be the only educational institution that trains the young generation for life – it has to be life itself. The child should not have felt being under an obligation and trying to escape from it. In conclusion we can maintain that:

- the subjects of natural sciences have to help the child to accept the concept of healthy way of life;
- the unity of perceptive and practical activities is a very important condition for humanization, We have to integrate the scientific knowledge of the interaction of the system Nature -Human Being – Society;
- human interrelationship among people should be fostered.
- natural science education ruins the formed ethnic natural outlook independently of national culture and changes value-based orientation (Ramančionis, 1996).
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The essence of the natural outlook is a peaceful human life with nature.

Finally, we can clearly emphasize that natural science education should be much more “humanized” than up to now. Let’s keep this topic open.

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Vincentas Lamanuskas

Editor-in-Chief of JBSE

