

THE PERCEPTION OF THREAT TO HEALTH ARISING FROM ENVIRONMENTAL ISSUES BY STUDENTS OF PDF MU BRNO

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Abstract: *The nature of environmental issues is not only reflected by damage to original wild nature somewhere far away or a decimated population of remote countries but also by the real health threats affecting every single individuals. Human health - representing value¹ for people regardless of their attitude to the nature- can be seen as a strong motivation for the prevention and reparation. A particular line of partial research examination arising from the answers of respondents comprising categories of health threats is presented by the author. The categories related to environmental issues are significant as confirmed by our analytical data.*

Keywords: *environmental education, protection of environment, education to health, threat to health, individual health, motorism*

The cross-curricular form is a common feature of recent czech *environmental education*. It is being carried out across the areas of education. On the other hand, *the education to health* takes on an educational form in czech curriculum. *Environmental education* - in accord with the recommendation of the *Framework Educational Programme* (original czech abbreviation: *RVP ZV*) - has become an integral part of the *Education to health* (as well as a part of other educational areas).

We very often encounter certain warnings arising from the research of the environmental education which are indicating that the environmental education as well as further education comprising the care for environment is ineffective in many cases because the highly sophisticated requirements are only accepted by conscious and altruistic individuals and are of no use for conformed personalities tending to turn to their own ego.

For instance, the tendency to give up the comfort of consumer way of life in favour of nature or in favour of other unknown people living in other part of the World is more or less not acceptable for a vast majority of population. It is also obvious that the education itself is not capable to change such a trend.

¹ The value is defined as a positive significance of an object for an individual. (Nakonečný 1998, p. 118)

The nature of environmental issues is not only reflected by damage to original wild nature somewhere far away or a decimated population of remote countries but also by the real health threats affecting every single individuals. It is also obvious that every man is interested to live in such an environment that is considered not to be obnoxious regarding our current hygienic norms for the noise, moreover the environment should also be aesthetically sound, the water should not be spoiled by nitrates, the exposure to the sun should not bring about an extremely high risk of cancer, the fish meat should not be contaminated with mercury, cadmium and finally there is also demand to breathe air without being polluted. It is not only the case of exotic countries wherein the damage to their environment is remarkable but it is also the Czech republic exhibiting a certain degree of damage to the environment.

Thus the phenomenon of the threat to individual health is one of the objectively perceived consequence of the damage to environment. The protection of environment is not only the platform for a certain part of population- philosophically complying with biocentrism² and/or ecocentrism³ but also for those who perceive the world from the anthropocentric point of view. The motivation arising from anthropocentrism is probably the most dominant in the area of protection of environment-stressing the fact that targeted protection of environment is indispensable for the man and the damage to environment can substantially influence the quality of life. The above noted is the base for so called sustainable development.

Human health - representing value⁴ for people regardless of their attitude to the nature- can be seen as a strong motivation for a conscious interest in the environmental issues and in prevention and reparation in that area not only for altruistic individuals but also for egocentric ones.

A partial research investigation carried out by the author of this article along with Hana Horka (2008) including a group of 163 students of PdF Masaryk University, was intended to reveal some relationships of students' attitude towards the protection of environment and the attitude towards the care of individual health. This article deals with a particular line of our research comprising the relationship of the environmental issues and the threat to individual health. This part of our research was represented by the below noted point:

„What are the threats to your health when living in a city?“ (three possibilities at least).

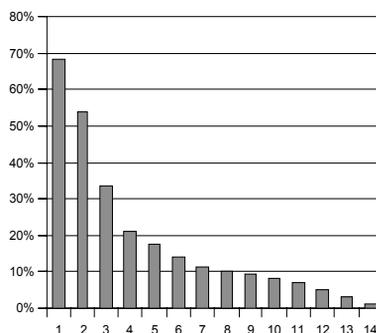
It was an open file wherein there were not any pre-defined options which could possibly influence and distort the content of the real opinions of our respondents. The written answers of the students involved were divided into the categories of „health threats“. The most frequent categories are listed below in the table:

² Biocentrism refers to the fact that living things have their own value, their value exists regardless of human existence and man is equal to all other living things (Kohák 1998).

³ Ecocentrism offers a broader view on nature, living things are understood as a part of a system (ecosystem) and individual fates, joys and pains of living things are submitted to the integrity of complex (Kohák 1998).

⁴ The value is defined as a positive significance of an object for an individual.(Nakonečný 1998, p. 118)

Students of Pdf MU; 158 respondents		
1	Smog – air pollution	68,4%
2	Automobile transport	53,8%
3	Stress – flurry	33,5%
4	Noise	20,9%
5	Wastes – contamination	17,7%
6	Lack of green zones	13,9%
7	Crime – violence	11,4%
8	Fast food	10,1%
9	Drogs – addictive substances	9,5%
10	Lack of body movements	8,2%
11	Industry	7,0%
12	Infections	5,1%
13	Xenophobic expressions or other crude expressions	3,2%
14	Obesity	1,3%



The most frequent qualitative variable is the category „ **the smog- air pollution**“– the second most frequent category is the **automobile transport** (crucially involved in the air contamination). Regarding all possible threats to the health , the students have selected as the most serious ones considering the urban life those categories which are inextricably coupled to environmental issues.

The category – **smog⁵ – air pollution** selected by 64,8 % of our respondents represent so called modal category. To breathe a fresh air is a legitimate requirement, but it is almost impossible to achieve it especially in so called „civilized“ cities due to industry, conventional ways of heating (solid fuels), illegal burning off the wastes, increased pollution and substantially due to heavy automobile transport.

The category – **automobile transport** – reached the frequency of 53,8 %. The negative influences of the automobile transport on human health can be divided into a few categories. The exceptional threat is represented by fatal injuries. In this regard the automobile transport is the most risky mode of transport. Regarding the pedagogical context, it is fruitful to note that almost one third of the victims of car accidents is represented by pedestrians and cyclists (almost one quarter of them are children!). It would be worth of trying to change this situation. It would mean to make such a kind of transport disadvantageous-e.g. rising the prices- and to invest the money into a more safer mode of transport e. g. railways (Keller 1998, p. 91).

Motorism is also one of the causes of wrong habits- just another health threat-leading to obesity and other health problems, especially in such cases when the owner has no other option to move from one place to the other.

Motoring (in spite of all good fates including catalysers) still comprises a serious health risk especially concerning the dangerous exhaust-gas emissions. The danger of the exhaust – gas emissions is inevitable, we cannot bypass them at all. They are present

⁵ Smog is classified as reductive (typical for winter season with inversions, carbon monoxide, sulphure dioxide, oxides of nitrogen, pollution etc.) and photochemical (typical for summer season especially in places with a frequent motoring), the sun is capable to split nitrogen dioxide and the free oxygen radicals having a toxic effect are subsequently formed.

in every street of cities and even in villages. We are endangered while moving outside, while on holiday, moreover they also penetrate into our houses (Horák 2000 p. 173).

There are several dangerous components of the exhaust gas e.g: nitric oxide (irritating respiratory system), carbon monoxide (avidly binding hemoglobin and decreasing the capacity of the blood to transfer oxygen), aldehydes and their derivatives (irritating mucous membranes of the eyes and the respiratory system-causing respiratory problems, moreover formaldehyde is a suspected carcinogen), partially burnt organic compounds-derived from carbon- may contain condensed aromatic hydrocarbons, so called PAH-polyaromatic hydrocarbons (toxic and carcinogenic substances), some acids, etc. (for comparison Horak 2000).

It seems rational to choose air pollution and automobile transport as the most serious health threats related to urban life especially regarding the nature of such a danger. On the other hand there is no active resistance related to the above noted threats especially considering individual motoring and polluted air in urban areas⁶.

Certainly, there are many cases concerning the activists as well as ordinary citizens, civil initiatives showing disagreement with the growth of motorism nevertheless there is no massive civil resistance against such a controversial phenomenon as the individual motorism presents.

Personal motor-car has been integrated into the society not only for providing a comfortable and fast means of transport (in larger permanently jammed urban areas it would lose such an advantage) but also for other qualities. The possession of a personal vehicle means a certain social status (for comparison Keller 1998). The effect of permanent advertisement devoted to fantastic cars but also respectful authorities behind the wheel lead us to conclusion that the possession and the use of a car is not only trouble free but also desirable. For young generations, the possession of a car means a certain target on the way to the adulthood and the independence. The demand to review such a mode of transport is perceived as a dangerous radicalism intended to dispute inalienable civil right to use a car up to an unlimited extent.

Environmental education (it is necessary to note that the transport as one of the topics has been introduced into the cross curricular theme of Environmental Education Of Curricular Documents RVP ZV) has an arduous task ahead comprising the transport. Some experiments devoted to the influence of environmental education on human behaviour have shown that certain piece of knowledge of environmental issues can influence the behaviour of people in so called „modest area“ (Young, A. Duncin, J. Frank, N. Gill, S. Rotham, J. Shenot, A Shotkin a M. Zweizig, 1993). Such an area is also characterized by sorting wastes and purchase of ecofriendly products. On the other hand, in so called „arduous area“ especially concerning the transport, the experience reflecting the knowledge of environmental issues has not been demonstrated (Diekmann, Preisendörfer 1992 In Pfligersdorffer 1993).

In spite of a lot of good cases it is hard to expect that people will give up personal vehicles which are considered valuable for them. In the other words, the cars represent some negatives (especially in global dimension) but also the positives (especially in

⁶ It can only be considered hypothetically as the group of students involved in our investigation cannot be described as a representative sample of population and the trials to infer the data on population would be troublesome.

local dimension). It is not easy to condemn individual motoring taking into account existence of necessary/forced mobility referring to such situations when the public transport is not available and the personal vehicle is the only option. Such problems related to a lack of public transport are often caused by a highly active automobile lobby (srv. Sanne 2002, s. 277).

It has been shown that the knowledge of environmental education and proenvironmental attitude are not directly linked to their action (this fact is not very optimistic for environmental education⁷). The research conducted by D. Scott a F. Willits (1994) was aimed at relationship between proenvironmental attitude and behaviour in Pennsylvania. It was shown the respondents proved to have solid proenvironmental attitudes but insufficient proenvironmental behaviour. Other studies have shown that the positive attitude may have a positive influence on the behaviour in the area of the care for environment but it can only take place under special conditions: disappearance of significant barriers (Gardner, Stern 2002, p. 76). The motoring as a social phenomenon certainly represents significant barriers. The judgement of „restrained“ (especially american) experts on environmental issues seems to be correct: it is naive to demand on society to limit individual transport voluntarily. It is necessary to focus on technologies providing the cars more ecofriendly, less damaging to health and securing sustainable development in global dimension. Nevertheless even ecofriendly cars will still need to utilize more dense network of highways and will cross the landscape.

Beside the solutions based on advanced technologies there are certain social mechanisms influencing man. In other words the teacher would not conform with the view that education in the area of care for the environment would be gummy and therefore useless and the only solution would be based upon new technologies and legislative. A positive significance for proenvironmental behaviour can undoubtedly have construct of social norm (for comparison Franěk 2002) and social support (for comparison Claxton 1994). The society forms certain norms (undergoing changes historically and are also different depending on a given culture or subculture). The norms are socially significant if the are generally accepted and form a frame wherein the human behaviour takes place. The behaviour in accord with the norms is accepted by the society positively whilst refusal or breach of the norm is criticised. In order to obey social norms it is necessary to convert them into personal ones (so called internalisation, for comparison Franěk 2002)..

If the environmental education is aimed at proenvironmental behaviour then one of the partial target of environmental education is to form specific proenvironmentally oriented norms and subsequent internalisation.

Bearing in mind the structural functionalism of sociologist Talcott Parsonse, the individuum is determined by the norms. „The individuum can refuse the values and the norms but it is unlikely because they have already been internalised by him during the process of socialisation.“ (Montoussé, Renuard 2005, p. 68). Breach of social norms may lead to a variety of forms of „social ostracism“ while the society chastens individuals refusing the norms. Regarding the environment it would be beneficial to introduce

⁷ If we recognize the thesis that the paradigm of environmental education rests in focusing on a target and the target of environmental education is proenvironmental behaviour. Environmental education is focused on the targets represents a dominant stream of environmental education. (srv. Činčera 2009).

certain forms of ostracism for some ways of behaviour in the environmental area e, g, ignoring the requirements for waste sortings (some TV spots clearly shows that not sorting waste is awkward), use of unsuitable fuels for household heating or overuse of individual transport for purposes inadequate to the burden on environment.

As so called „environmental categories“ the following terms were selected by students : **noise** (20,9 %), **wastes-contamination** (17,7 %), **lack of green zones** (13,9 %) and **industry** (7 %).

It is obvious that our respondents still perceive danger arising from environmental issues. Environmental education is undoubtedly one of potential instruments for a long term resolution of environmental problems. It is fairly interesting (but also very positive) to notice that in spite of the fact that the protection of environment is in conflict with influential social as well as economical interests recently, the environmental education has meanwhile become a solid part of curriculum of all levels of education in our country. Thus while there is a rush to build up the motorways and to advertise exceptionally advantageous production and purchase of vehicles the pupils are learning according to the curriculum about more economical ways of transportation and the insecurity of personal vehicles influencing human health, landscape and global climate.

Evident advisability of existence of environmental education in curriculum is apparent in the case of those indicators of damaged environment which cannot be overseen. It is obvious that those indicators we suppose to present an acute or a direct threat.

In order to achieve our original goal – to contribute to health issues in relation to environment, it is necessary to note one point in our questionnaire wherein the students were asked to select from a scale of twenty suggested values the five of the most important values (possession, money, good studying results, good friends, good relationship, individual health , clean environment, a lot of holiday, no stress, good relation in the family, feeling of security, good results in sport, quaranteed accommodation, career, acceptable political situation, spiritual balance, individual look) and to align them according to their importance. The modal category is represented by individual health (50 % of all students placed the individual health on the top among the other values). For our experimental sample the category of individual health is very important (other researches also show that people highly appreciate their own health).

If the health has become priority of vast majority of population and simultaneously the environmental issues have been perceived as the cardinal threats to health then the environmental education has a great potential. Nevertheless we cannot suppose that people confronted with their own interests in individual health will give up comfort and certain consumption patterns of behaviour in favour of the environment. Such an assumption would be very naive (for comparison Librová 2003, p. 20). The submission of behaviour to the health threats may have psychological influence on the principle of rational selection, showing human tendency to act only in an individual interest. If the context of the education to the health will point to health risks related to a steadily progressing ecological crisis then the arduous task to provide environmental and economical and sustainable way of life and could look advisably for all.

Some media, representative of political life, marketing and other social and power structure time to time attempts to doubt the significance of the care for environment as there is not enough empirical data available which could support the advisability

of the care for the environment. It does not seem that the facts have been manipulated. On the other hand there is a lack of arguments in case of a direct threat on individual health which is perceived as a priority.

ENVIRONMENTÁLNÍ PROBLÉMY JAKO ZDRAVOTNÍ HROZBA Z POHLEDU STUDENTŮ PDF MU V BRNĚ

Abstrakt: Povaha environmentálních problémů má nejen tvář vzdálené zdevastované divoké přírody a zdecimovaného obyvatelstva ve vzdálených státech, ale i tvář v podobě zcela reálných zdravotních hrozeb, které se týkají každého jedince. Na lidské zdraví jako hodnotu¹ pro lidi bez ohledu na jejich postoje k přírodě, můžeme nahlížet jako na silnou motivaci k prevenci a nápravě. Autor v článku představuje jednu linii dílčího výzkumného šetření, která se vztahuje ke kategorii zdravotních hrozeb, které byly vytvořeny z odpovědí respondentů. Z analýzy pak vyplývá, že významné jsou zejména kategorie, které souvisí s problematikou životního prostředí.

Klíčová slova: environmentální výchova, ochrana životního prostředí, výchova ke zdraví, zdravotní hrozba, vlastní zdraví, automobilismus.