

HEALTH EDUCATION IN THE ENVIRONMENTAL CONTEXT

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Abstract: *The author points to the overlap of health promotion and environmental protection in the system of education. She specifies it on the aims and focus of the content of both environmental education and health education. The health motives of environment protection have become inspiration for investigations focused on the issue of “putting one’s health at risk as a consequence of environmental influences”.¹ The chosen phenomena (nature vs. recreation, nature vs. transport, nature vs. physical or sports activities) are illustrated on examples of results of the investigations. Finally, the contribution for the theory and practice of health education and environmental education is described with an emphasis on the transformation of education towards biophile focus.*

Key words: *environment, biophile education, environmental education, quality of life, health care, nature, culture, health education, health*

The quality of the environment as a significant aspect of health

Environmental education represents a basic strategy for the accomplishment of positive changes in the environment as well as a tool for securing sustainability of the world. Environmental protection is an integral part of environmental education and adverse changes in environmental protection limit the quality of life. As implies from a number of studies, the quality of the environment represents a basic determinant and regulation device of health. The fact is that leading a healthy lifestyle does not mean only elimination of health risks for humans, but contribution to the health of the environment as well. These claims are supported by the ecological-social model of health, which follows the conditionality of health by the natural and social environment, or, in the integrated conception of health, dealing with the consequences between human health and the health of the physical environment and nature.

It is indisputable nowadays that the environmental crises lies not only in endangered plant and animal species, but is “*an external symptom of the crises of mind and soul*” (Koger; Winter 2009), or “*the great crises of perception*” (Abram 2008), which means a certain inability of an “overcivilised human” to perceive nature in an adequately clear way.

¹ Results of investigations are a part of studies conducted in the research project School and health 21 between 2008 and 2010.

Therefore, the questions related to education, or building a relationship towards nature, are raised again, especially as regards the nature component, threatened by the development of civilisation and contemporary lifestyle. It is expected that these questions may help restore the disturbed reciprocity between humans and nature, whose consequence is according to D. Abram (2008, p. 139) “*the inability of humans not only to give back what they have taken, but in many cases also the inability to perceive and decipher what nature is trying to convey*”. What are the implications for education? Primarily it is the respect for the fact that genetic dispositions of humans come from the natural environment and nature provides mental and physical health to humans. Consequently, education regulates the surplus of artificial cultural information a person is exposed to. It teaches individuals to recognise significant information, work with it, it allows to bring in new forms (to in-form), or, as said by D. Abram (2008, p.139), “to leave an echo in a person”.

In our investigation we relate two important subsystems to the system of education and these are environmental education and health education.

The overlap of health promotion and environmental protection in education

The overlap of health promotion and environmental protection arises from the characteristic features of environmental education, which stresses adequate **understanding of relationships and connections among the components of the environment**, complex expression of mutual conditionality of organic and inorganic nature, amongst organisms themselves, relationships between human activity and its products and nature, including the **identification of undesired consequences of human transformational activities**, leading to devastation and endangering of natural qualities of water, air, soil, plants and animals resulting in **risks** not only for human **health** but for the existence of life on Earth as such. Learning about and understanding this context is reflected in a responsible relationship towards the environment, in ecologically-friendly **lifestyle** and behaviour which supports health (Horká 2005, p. 26).

By means of content analysis of the aims of environmental education we draw a conclusion that they are in many aspects compatible with the intentions of health promotion. In the cognitive area there are common key units: understanding the relationships between humans and nature, consequences of human activity on the environment including the possibilities of lessening, restricting or even eliminating the consequences, or possible risk factors for health; understanding one’s responsibility in environmental protection related to the care for one’s own and other people’s health; reduction of unnecessary human needs and unjustified demands based on the complex understanding of the value of nature.

On the cognitive-emotional level it concerns the acquisition of ethical principles of action and behaviour (as superficial, consumer and unethical way of life encourages human selfishness and hinders emotional, theoretical and value rehabilitation of nature etc.); understanding the aesthetic value of nature; striving for thriftiness, frugality, consideration, responsibility. In the cognitive-motor area there are skills and habits necessary for everyday desirable conduct of a citizen with an

emphasis on healthy lifestyle and decision-making in favour of health promotion and sustainable development.

The development of a competence of a “cultural protector of health and the environment” (Švec 2004, p. 29), requires the skill to understand the existing mutually causal, spontaneously operating relationships in the environment and influencing the quality of care for the environment and health as well. Based on it an individual can evaluate, consider risks and benefits and act according to that and also accept responsibility for the consequences of their behaviour in the relationship to the environment. For this it is necessary that the reception and delivery of artificial information should be adequate and that the space for the reception and delivery of natural information should open up (Abram 2008. p. 139). It implies that information about nature which is out of context, mediated only by words can not be sufficient for adequate orientation in life situations.²

The overlap of environmental education and health education is apparent from the content curriculum of environmental education for basic schools, which we present as an overview of key topics:

THE ENVIRONMENT AS A SIGNIFICANT ASPECT OF HEALTH choice of key topics	
Cognitive aspect	Cognitive-emotional aspect
Natural environment (ecosystems – forest, field, water resources, sea, tropical rainforest), Basic conditions of life – water, air, soil. Ecosystems – biodiversity, energy and life, natural resources.	Ethical principles of behaviour. Ecological ethics. Ethical norms. Prosocial behaviour.
The value of nature. Use / exploitation of nature and the environment/ protection of the environment and cultural artefacts.	Overcoming of primitive egocentric opinions and values. The offer of values for the change of manipulative viewing of nature and human society. Aesthetic perception of nature. Nature and the environment as a source of inspiration for creation of cultural and artistic values.

² D. Abram speaks about stories narrated “*face to face, not through reading to children from books*” stories about what *happened at full moon on a forest edge, or whose track is winding through this dried riverbed. What are the stories of your place? Why is there a strangely formed stone protruding from the slope? Or the story of that street corner where a streetlamp is buzzing intermittently – what might be the reason?* Children need stories happening in the country, physical world, which we *render habitable by our physical imagination*. First we need to experience language physically. Let us prefer improvised narration for “*the child to grow up in the land full of legends to comprehend language as something belonging not only to people, but to the whole world*”. A child growing amid the world of stories experiences a feeling of being submerged into the world in which *meanings emerge from every branch and blade of grass and beak, opened accidentally*. The mentioned fundament is necessary also for the acceptance of a certain type of ethical limit, acquired only those who realize how rooted they are in the world “*habituated not only by humans, but by other beings and bodies.*”

Culture as an artificial system. The essence of culture. Culture as a source of different views and relationships towards nature and the environment, cultural landscape, human settlement – town-village (artificial ecosystem).	Questions of human needs, values. Materialistic consumerism. Reflection and self-reflection of behaviour. Anthropological questions – humanisation, alienation. Human rights concerning survival, development, protection of individuals, rights/responsibilities, violence/peace in interpersonal relationships.
Asymmetry in life on Earth (different environmental conditions and different social development on Earth, consequences of globalisation, principles of sustainable development).	Relationship between a human and a society, wealth and poverty.
Relationship of a human towards the environment The development of the relationship of a human towards the environment Human activities (transport, agriculture, industry, waste and environmental problems)	Civic activity and democracy, social control and public interest. Involvement in solving environmental problems.
Environmental aspects of health (human and nature, nature and health, human interventions into nature, their impact on health).	

Table 1: The environment as a significant aspect of health

The interdisciplinary and multidisciplinary conception of environmental education and interactive conception of health (on the biological, environmental, psychological, interpersonal and socio-cultural level) evokes the need to link logically the problems of natural science (medicine) and social science.

The overlap of health care and environment protection in research investigations

A whole range of reasons for environment protection is reflected in the conception of environmental education (cp. Novotná 1997, p. 180–181): from utilitarian economic (to protect unrenovable natural resources as economic wealth and wildlife as natural wealth, which can be useful in the future), ethical, aesthetic to reasons related to health care (protection of the environment that would not threaten human health and nature as a place for physical and mental recreation).

Health motivation for environmental protection became inspiration for research investigations within the research project School of health 21, through which we attempted to find the overlap of “health care“ and “environmental protection“. Acting for the benefit of nature and the environment as the key imperative of the outcome of environmental education became an impulse for investigations focused on the issue of “health“, or rather “putting one’s health at risk as a consequence of environmental influences“. We chose the following areas of influence: recreation, car transport and physical or sports activities.

The situations where health care comes into a conflict with environmental or nature protection are considered in educational context, especially as regards the educational process. After the description of the chosen phenomenon (nature vs. recreation, nature vs. transport, nature vs. physical or sports activities) we offer selected

results of investigations³, whose summary may influence theory and practice of health education and environmental education, or stimulate an upgrade of the educational curriculum.

Environmental and health impact of recreation (nature vs. recreation)

The curative effect of nature on humans in the therapeutic, relaxation and recreation area, so-called non-productive functions of nature is sometimes overrated to the detriment of its function for the provision of integrity and spiritual, mental reproduction. J. Šmajš (2005, p. 93) describes it as a nature's concern about not only "healthy body, healthy mind", but also "about a biologically determined humanity with adequately extensive culture".

Relaxation in nature minimizes the adverse effects of constant physical and mental tension brought about by the busy life in a civilised society. The recognition of the beauty of nature as a therapeutic means and application of outdoor stays is a basis of ecotherapy. It is performed through a relatively solitary contact of a client with the natural landscape (ranging from hikes to places "off the beaten track" to more strenuous outdoor trips), gardening, painting, photography or looking after plants and animals. A suitable way of relaxation is growing vegetables, flowers or fruit, which allows, especially to young children "without abstract concepts point to what has been overlooked by anti-natural culture against their will: creativity, mystery, superiority and beauty of earthly life" (Šmajš 2000, p. 330).

From results of investigations on the topic How respondents – student teachers view relaxation in nature.

A pilot study revealed that natural environment is from the point of view of human health interesting mainly as a platform for relaxation. Therefore we attempted to find out whether the students of the Faculty of Education Masaryk University Brno (N = 104, 98 women, 6 men) consider relaxation a significant activity in the context of health care – diagram No. 1:

³ Results of investigations are a part of studies conducted in the research project School and health 21 between 2008 and 2010.

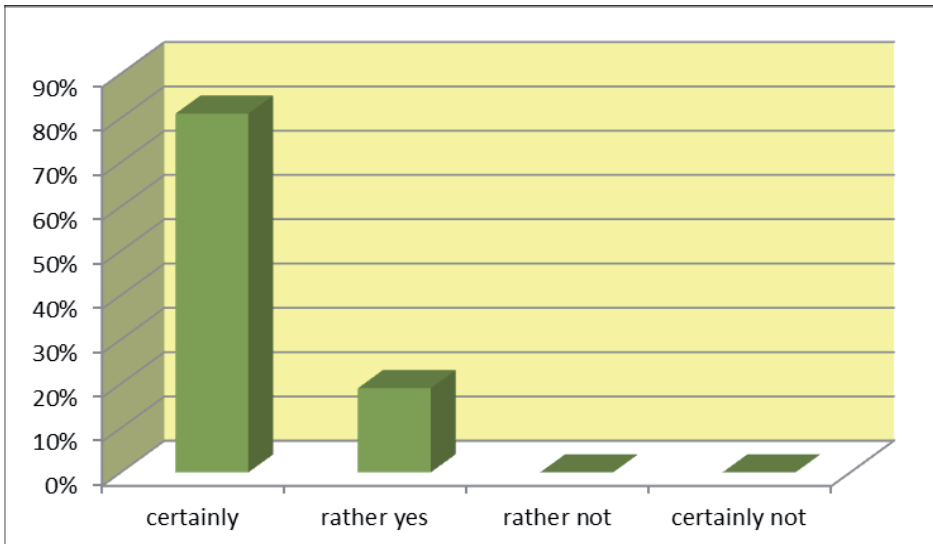


Diagram No. 1: “To what extent do you agree with the statement: Being able to relax properly is extremely important for human health“.

As illustrated in diagram No. 1 relaxation is definitely considered an important activity. Subsequently, we asked whether the natural environment represents an interesting place for relaxation. In our questionnaire we formulated an open item: “Imagine a place (or places) where you would most like to relax and describe the place briefly“. The relative frequencies of the categories based on the answers are illustrated in diagram No. 2:

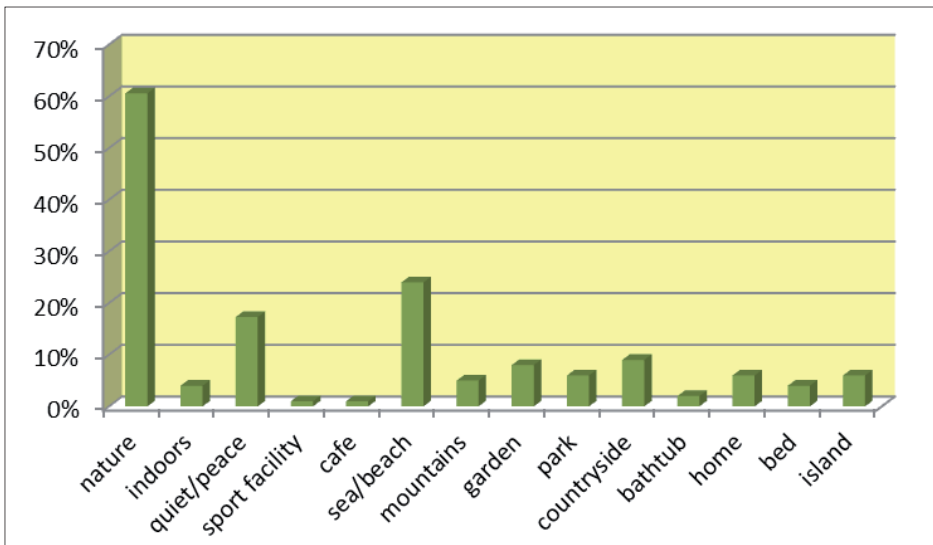


Diagram No. 2

The most frequent category is *nature* with 60.6%. Other significant categories are: *sea/beach* (24%) and *silence/peace* (17.3%). Although the term “nature“ is rather general and we for certain can not say what exactly respondents mean by the term, we assume that our research hypothesis that majority of students consider nature a suitable place for relaxation. To specify we used the following closed item, whose evaluation is illustrated in diagram No.3:

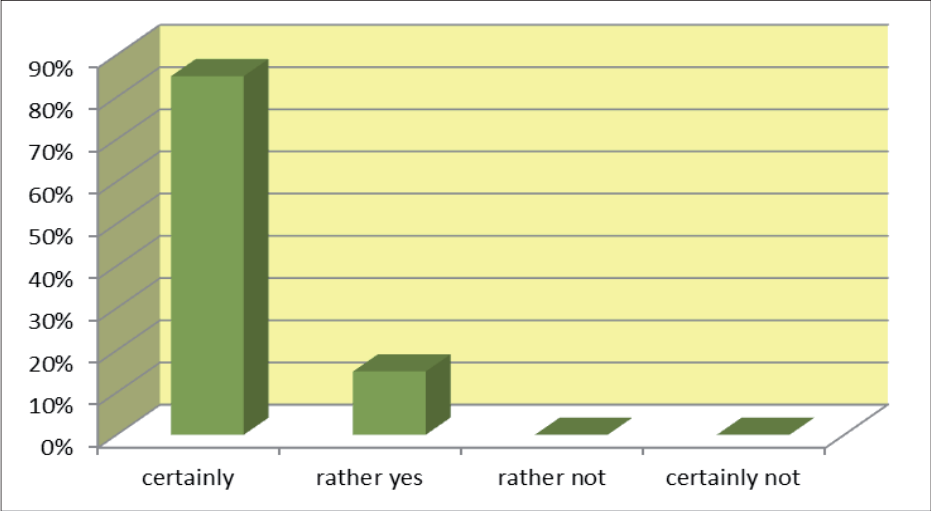


Diagram No. 3: “To what extent do you agree with the following statement: Nature (green areas, park, forest, etc.) is a suitable place for good relaxation.“

In our research probe we were attempting to find out whether respondents experience any obstacles to good relaxation and whether these have environmental context – see diagram No.4:

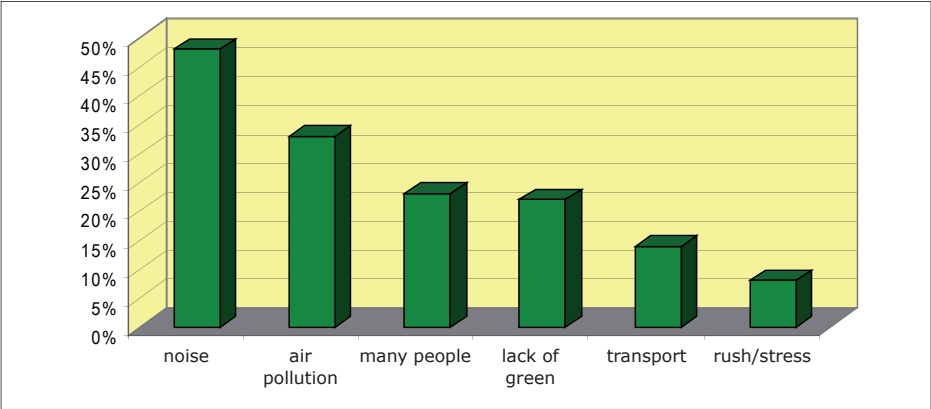


Diagram No. 4: “If you think that life in a city hinders good relaxation, write down which obstacles you find“.

It seems that obstacles to good relaxation often have environmental context – in the first place it is *noise* (47.6%), then *polluted air* (33%), next there is a category with social context *too many people* (23.3%), followed by *lack of green areas* (22.3%).

Good relaxation is seen as an important component of health care and it is also often associated by the respondents with relaxation in the natural environment. The obstacles to good relaxation are often attributes of the damaged environment (Horká; Hromádka 2010).

Ideas for the upgrade of the educational curriculum

In the context of the ecotherapeutical potential of the nature we can not overlook information on the negative reactions of some children and young people to the physical environment. They avoid practical contact with nature and they are basically afraid of it; they fear an encounter with certain objects or situations; the susceptibility of rejection of the physical environment and expectation of a certain degree of comfort provided by life in a modern and comfortable environment (Bixler; Floyd 1997 in Franěk 2001). Research in the Czech Republic (e.g. Strejčková et al. 2005), focused on the alienation of children from nature brought interesting and inspiring information, such as that it is very important for environmental education and health education to overcome the negative view of the physical environment.

It is associated with the procedures of familiarizing children with nature, based on direct experience, experiences with observations in nature, not with conveying isolated facts in an abstract form⁴. The information about nature conveyed by words only and without a context can not be sufficient for adequate orientation in life situations. The practice of the consumption of second-hand information facilitates manipulation of human crowds (Strejčková 2005). The preference of vicarious to real activities can even reduce empathy towards other forms of life. Presentation of different views on nature, from the natural science, aesthetic and spiritual standpoint on its value and real threats, possibilities of contact with nature is influenced by professional competences of a teacher. It is relevant in this place to mention again the significance of the balance between natural and cultural information as a means for the solution of the crises of perception (Abram 2008).

Environmental and health consequences of sports activities

Quality physical environment with cultural monuments represents a source of various opportunities for movement and sports activities of a person, performed usually “for health“. Adequate physical activity together with the effects of the environment, nutrition and lifestyle represent interfering agents to health, absolutely irreplaceable.

⁴ J. Šmajš warns that there is a hidden dominance of abstracts of mathematics and physics, etc. promoting the transformation of nature and he suggests that they should be balanced by abstracts of biology and culture, which are more humble towards the natural structures.

The significance of sports activities for human health is indisputable; however, the impact on the environment is increasingly visible⁵. The damage of the environment is a consequence of long-term “*ignorance of biological factors in cultural life, missing argumentation against a dangerous trend in lifestyle*” Šmajsová-Buchtová 2009, p. 80), ignorance of real natural values, etc., which underlines the need of a differently focused education.

Selected results of investigations

In the sample of students of the Faculty of Education Masaryk University (N = 133, 128 women, 5 men) we were initially investigating why they perform sports activity and whether it has connotations with care for one’s own health – diagram No.5:



Diagram No.5: “Tick a reason or reasons for doing sports activities relevant for yourself (or add others if missing).“

It was found that respondents most often do sports or sports activities for fun (92.5%), but the second most frequent category is “for health“ – 78.9% (Horká, Hromádka 2010).

We were also looking at whether the respondents take into account possible effects on the environment while performing certain sports activities (though we admit that in some cases the question might be quite absurd and validity of the item is problematic).

⁵ Confiscation of agricultural and forest soil, fragmentation of the country and producing obstacles, damage of the aesthetic image of the country and country pollution, chopping trees, killing animals, intentional damage of vegetation etc. There is a great impact of vast sport resorts in the country, skiing slopes on the borders on national parks, energetically demanding maintenance of sports facilities, but also mass overproduction of various sports equipment, or ecological footprint of “travels for sport“.

For results see diagram No.6:

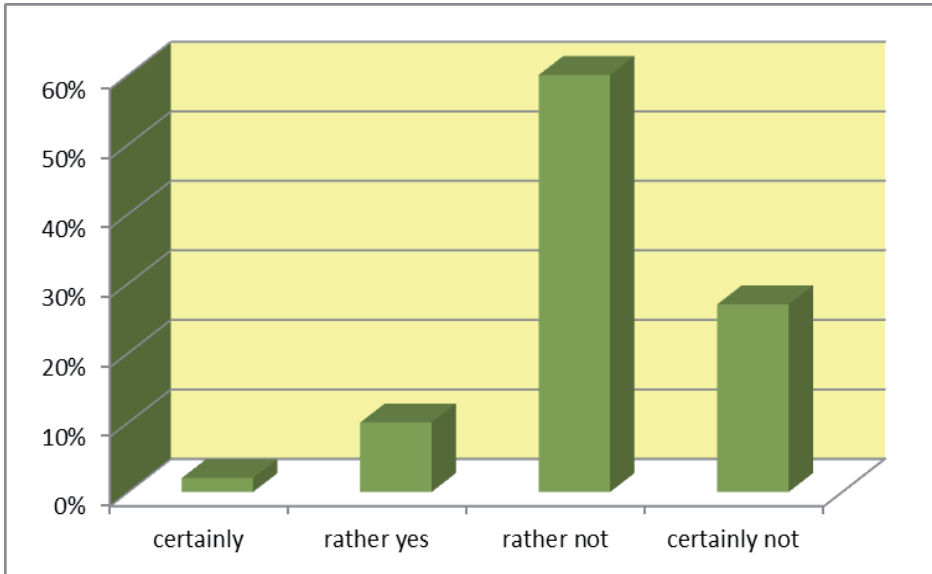


Diagram No.6: the degree of agreement with the statement: “When performing a sports activity I take into account the potential damage of the environment.”

Modal category: rather not

Our focus on the potential environmental dimension while performing sports activities was represented also by a variable in the form of the “degree of agreement with the statement: I look after my health in such a way to damage the environment as little as possible“. The modal category was: *rather yes* (61.6% of valid cases). This surprising majority thus declares that they look after their health in such a way that damages the environment as little as possible. The results of evaluation of another variable are similar: the degree of agreement with the statement: “Nature should not be an obstacle to projects serving for sports activities.“, where the modal category is the variant: *rather not* with 82.7% (Horká, Hromádka 2010).

Concerning the applied indicators different from the indicators of the investigation mentioned above (Horká, Hromádka 2009), in the relational part of the investigation there was found an interesting correlation between “responsible care for one’s own health“ and “the effort to act in an environment-friendly way“ (correlation Kedal $t_b = 0.32$). In our research sample there was found a low (but significant) correlation between the care for own health and care for the environment (Horká, Hromádka 2010).

Ideas for the upgrade of the educational curriculum

The lack of sports activities, hypokinetic degradation of a human (Liba 2007, p. 74), wrong dietary habits and psychosocial factors represent risk factors for health. To prevent a conflict between care for one's health and the environment continuous upgrade of the educational curriculum should be carried out. Education should not be based on simple passing on of information verbally and visually (often deformed and not valuable). The habit of indoor consumer lifestyle of children and young people should be overcome by building a habit of spending time outdoors, moving, and act for the benefit of nature in a creative way. Research findings confirm that the decrease in direct contact with the natural environment negatively influences not only the ability and willingness to help maintain the wealth of the natural environment, but also healthy physical and mental development of an individual (Fráňek, Strejčková, Krajhanzl etc.).

Environmental and health consequences of transport

Transport as an integral part of life of the society is a significant factor affecting negatively the environment and human health, but it is apparent that the current society could not exist without the continual transport of goods, products and information.

Therefore, the urgency of problems associated with transport is indisputable concerning health and life (not only of humans). From the point of view of environmental education and health education is particularly alarming the threat for plant and animal species and the irreversibility of some cases of interference into the environment. It was found that those phenomena problematic for humans and their health are often problematic also for nature, animals and plants, and vice versa. Experts claim that the damage of nature *“often indicates in advance and clearly points to some adverse effects of transport, which latently already threaten sensitive groups of the population and are developed in the majority of the population after a longer period of time“* (Bendl 2008, p. 21).

The results of investigations (Horká, Hromádka 2008, p. 21–33; Horká, Hromádka 2009, p. 46), concerning the problem of attitudes of lower secondary school pupils towards individualised car transport (N= 393 pupils of 8th and 9th grades of schools in Brno).

Although we did not discover a relationship between an attitude towards environmental protection and an attitude towards looking after one's health, we did manage to determine an area where these two topics overlap. In our questionnaire there was an open item: *“Write down what you consider a health threat for life in a city.“* It was found (see diagram No. 7) that respondents associate concerns about their health with environmental problems (*car transport, smog – air pollution, waste – pollution, industry, lack of green areas, noise*). In terms of relative frequencies the most frequent are categories *smog – polluted air* (68.4%) and *car transport* (53.8%). It is apparent that students in cities feel threatened by what we often consider a natural and maybe also inevitable toll to civilisation – that is car transport and associated car exhausts (Horká, Hromádka 2009).

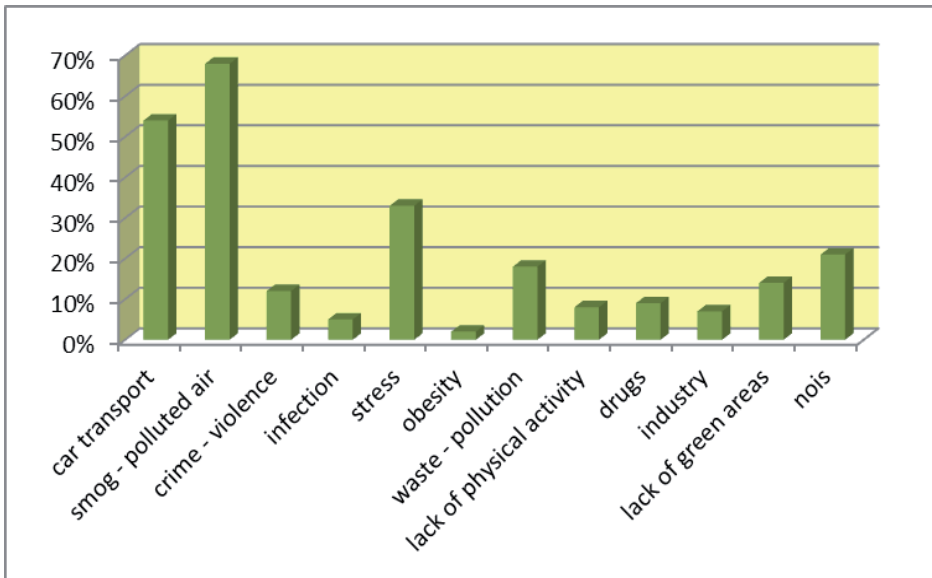


Diagram No. 7

Emissions (especially those caused by road transport) are seen as the greatest health risk for life in a city. So what is the attitude towards car transport, the phenomenon causing such concern? Our study shows that despite its apparent environmental and health harmfulness, car transport is quite popular with the youth. There is a relationship (very weak, but significant on the chosen level of significance) between a negative attitude towards car transport and a positive attitude towards the environment.

Ideas for the upgrade of the educational curriculum

The topic of transport is becoming a subject of education, both in the context of the environment⁶ and health education. In the content curriculum for basic schools there are units such as Human activities and the problems of the environment with subtopics about transport and the environment (significance and development, energy sources for transport and its effects on the environment, types of transport and ecological impact, transport and globalisation); our lifestyle; environment and health (diversity of effects on health, their complex and synergic effect, possibilities and ways of health protection); health risks of car exhausts (chemistry), energy consumption of transport (physics).

The task for environmental education is to point to problems and dilemmas that pupils will solve as adults, free and responsible citizens. We assume that pupils will have a chance to contribute to meeting the requirements of transport that is more environment-friendly, which is something that experts already discuss and implement, such as using cars with lower energy consumption and emissions, use of alternative

⁶ The topic is formally integrated into the crosscurricular topic Environmental education and educational areas (e.g. Humans and their world, Humans and nature in the curricular document the Framework Educational Programme for elementary education).

fuels and renewable sources of energy, enforcing stricter emission limits to restrict the production of greenhouse gases (emissions), stricter regulations in the area of production and processing of wastes in transport, implementation of navigation systems to reduce the overload of roads etc. As mentioned above, car transport is very popular with young people and so it is not tactical to dispute the necessity of using cars. Such a radical approach could result in a rather resistant approach in pupils.

Conclusion

The investigations have contributed to the description of relationships between the care for one's own health and the environment, their overlaps as well as areas where they meet and affect each other. It was found that nature is perceived as a platform for health care and the damaged nature as a significant health threat. Health can thus become an important motivational factor for the demanding process of developing environmental awareness of a person. It is expected that the recognition of the value of human health will influence idleness, which represents one of the obstacles to pro-environmental action. The focus of our attention was educational or instructional description of objective health threats generated by the damaged environment, which can represent good motivation to overview certain behavioural patterns.

Nevertheless, we cannot expect that health concern, just like love for nature, could be sufficient motivation for dramatic changes in behavioural patterns and lifestyle in favour of nature in the majority of population. Some researches ((Franěk 2004, Koger, Winter 2009, Krajhanzl 2009 etc.) show that many people are willing to change their behavioural patterns only if they (or their near relations) directly benefit from that.

Our results confirm the link between the health of nature and general physical, mental and social welfare of a person. From the educational point of view this means that adequate attention should be paid to the transformation of the educational curriculum, that should meet the requirement to *“teach pupils and students how to think⁷, motivate them to solve problems that they encounter throughout all their lives, as well as the current conflict of culture and nature“*, so that, as J. Šmajš says (2011, p. 79), the curriculum provides *“instruction for health, care for body and mind, and good life“*.

Education should develop the abilities of a person to choose, select and process relevant information, perceive natural information as essential, and cultural information as vital for the maintenance of culture, but subordinate to natural information. This should lead towards the biophile (pro-nature) focus, healthier inner life of a person and subsequently their healthier lifestyle, reflected in the provision of healthier environment.

What has to be done while searching for the pro-nature focused system of education? We can start as proposed by D. Abram (2009):

“... slow down for a moment, calm down the constant twittering in our brain and provide space for eyes and ears to begin to perceive all the other voices that surround

⁷ As pointed out by J. Šmajš (2011, p. 79), *“where there is no thought, there are dysfunctions and mental problems, which are eventually somatic, i.e. they have adverse effect on human health.“*

us... All these gestures are very important, and still not sufficient, because we also need to communicate with each other. It is essential to come back from the silence to the world of expressions, but at the same time to find such ways of speaking that will be accurate for our direct sensual experience of the world, our animal kinship with the rest of life on earth.“

VÝCHOVA KE ZDRAVÍ V ENVIRONMENTÁLNÍCH SOUVISLOSTECH

Abstrakt: Autorka poukazuje na průnik podpory zdraví a péče o životní prostředí v systému výchovy. Konkretizuje jej na cílech a obsahovém zaměření dvou podsystémů, tedy environmentální výchovy a výchovy ke zdraví. Zdravotní důvody péče o životní prostředí se staly inspirací pro výzkumné sondy, zaměřené na problematiku „ohrožení vlastního zdraví v důsledku environmentálních vlivů“⁸. Zvolené fenomény (příroda versus rekreace, příroda versus doprava, příroda versus pohybové či sportovní činnosti) jsou ilustrovány na příkladech výsledků výzkumných sond. V závěru je popsán přínos pro teorii a praxi výchovy ke zdraví a environmentální výchovy s akcentem na proměnu vzdělávání směrem k biofilní orientaci.

Klíčová slova: životní prostředí, biofilní vzdělávání, environmentální výchova, kvalita života, péče o zdraví, příroda, kultura, výchova ke zdraví, zdraví

⁸ Výsledky výzkumných sond jsou součástí studií zpracovaných ve VZ Škola a zdraví 21 v letech 2008–10.