

SUSTAINABILITY PEDAGOGY IN PRACTICE: AN EXAMPLE FROM HEALTH EDUCATION

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Abstract

At the UN World Summit on Sustainable Development in Johannesburg, the period between 2005 and 2015 was declared to be the decade of sustainability. Therefore, it is important to see the implementation of sustainability pedagogy come to the fore in every country. Putting this into practice may lead to hardships for headmasters and teachers in schools. This process requires changes in behavior and approaches, besides, the development of certain students' skills have to be considered that the institutions have not perceived as their duty so far.

To implement the idea of sustainability in education, in every country from elementary to higher education, properly trained and prepared teachers are needed. Postgraduate teacher training, international interchange of experience have to be stressed. Furthermore, to understand the content of sustainability and put it into everyday practice in schools, the activities have to be fact-based, with clear directions and have easily available teacher aids. The article demonstrates method how to implement projects related to healthy nutrition.

Key words: *sustainability pedagogy; health education; postgraduate teacher training; lifelong learning; practical education.*

Introduction

In our fast everyday life, we do not even notice what is going on around us. A dreadful piece of news from the media, acquaintances, or family members make us think and re-evaluate our deeds.

In our civilized world, unfortunately, we do not even know or just ignore what values we are surrounded by, that are natural for us as they belong to the everyday life. Think of drinking water, clean air, food of adequate quantity and quality, physical and mental health above all. Consequently, it is important to establish and preserve an

adequate value system, as protecting our planet is a common duty and responsibility of humankind.

The Environment and Development World Committee (Brundtland Committee) called upon people to take common responsibility, in its publication "Our common future" in 1987. In this publication, the expression "sustainable development" was used officially for the first time and the committee forged the role of educators in the implementation of this aim. The document stresses:

We turn to the youth particularly. All the educators of the world will have a key role in forwarding our report to them. If our urgent message can not reach the present-day parents and decision-makers, we will hazard our children's right to healthy and life-giving environment. If we are not able to translate our words into the language that could be understood by people, whether old or young, and that could reach their heart and mind, we will not be able to carry out the great social changes by the help of which we can set the course of development right (Brundtland et al., 1987).

To implement the advice of the Brundtland Committee, first of all, the practical elaboration and popularization of sustainability pedagogy is needed. In Hungary the practical performance of sustainability pedagogy is still in its infancy. Many people are not even aware of the concept of sustainable development, as it has turned out from a national survey. According to that survey, focusing on children between 9 and 11 years of age, sustainable development is just a physical concept, which means to hold or lift something up. The second meaning, according to the children participating in the survey, is related to the sustainer of a family or institution (Havas, 2001).

However, we believe that the interpretation of sustainable development is correct only if we admit that it also includes social, economic, and political elements. Thus, sustainability must be examined in accordance with at least three systems: environmental, social, and economic ones (Wheeler & Bijur, 2000; Lakatos, 2002).

In order to implement sustainability pedagogy, a system approach is needed in education. To carry this out, we must transform our knowledge-centered education into teaching/learning process based on experience, for which the relevant attitude and skills need to be established. The following sentence clearly highlights the need for sustainability pedagogy: "Many of us think that education on sustainability is an actual matter of developing education. Well, in the 21st century it seems that it is the agenda itself" (Orr, 1998).

Considering the above mentioned, in the life of teachers an essential problem can be the question of when and how to deal with sustainability pedagogy. Primarily, they must understand that educating sustainability is not an extra subject in the timetable and moreover, it is not a subject where accomplishment is measured and rewarded with marks. The idea of sustainable development must be part of our everyday life, which is mediated to the students by the atmosphere of educational institutions and the personality and good example of educators (Harris, 2004).

It is important that all the staff at school be aware of the importance of conveying values, since during teaching sustainability, isolation between different sciences disappears. We must understand and reject the common practice in environmental education that it is the duty of teachers of natural sciences solely, for it is a common duty and

responsibility. As it is a study process, it does not begin within the educational institution and does not come to an end when the students finish their studies at school.

The practice of sustainability pedagogy

Sustainability pedagogy must yield positive changes in attitudes and behavior. To this end, different skills and abilities must be established. The publication that appeared after the UNESCO's conference in Johannesburg lists the following *skills*:

- criticism
- creativity
- communication
- cooperation
- crisis management
- decision-making
- evaluation
- use of new technologies
- social participation

The same document includes the attitudes, values, and knowledge needed for sustainability pedagogy.

Values and attitudes:

- respect of life on Earth in its diversity
- care and sense of fellowship with living beings, showing understanding, respect and love towards them
- building peaceful society on the principle of democratic, or just, sustainable, social participation
- aiming at preserving the beauties of Planet Earth

Knowledge:

- concept of sustainable development
- the principle of interdependence
- essential human needs
- human rights
- democracy
- relation between local and global matters
- biological diversity
- ecological footprint
- principle of precaution (UNESCO, 2002).

As it is obvious from the listing, teaching sustainable development is a really complex task, which, we might think, is a serious challenge to most of us. We must evolve in the students several abilities and skills which were probably not considered to be a tasks by all educational institutions. Certainly, the enumerated knowledge listed above has to be incorporated in subjects, and the possible methodological questions and the missing educational aids have not been even mentioned yet.

Possibilities of implementing sustainability pedagogy

In Hungary, the National Core Curriculum (NCC), which is in complete accordance with Tbilisi document, was introduced in 1997-98. The National Core Curriculum is the central regulatory document concerning the content of curricula in public education. This document, in its chapter about common requirements in different fields of education, dealt with environmental education, then its version updated in 2003, distinguished the environmental education among the prior developmental sections.

Meanwhile, in 2002 Framework Curriculum was issued, regulating the content of elementary and secondary education. The articulation of sustainable development in Hungarian educational legislation was present for the first time in this document.

The Framework Curriculum envisages the adding of the knowledge of environmental education in natural science and social science school subjects. A teacher handbook and guidelines for teachers from 1st up to 12th grade have also been created including the detailed content of environmental education in each subject.

Even so, putting the elements of sustainable development into practice is not resolved in many schools. As the results of a survey in 2003 show, regardless of legal regulations, a majority of students do not participate in environmental education. The survey included 52 schools. According to the survey, elementary schools are in the best situation: here 94% of students take part in environmental education on average, however, in some schools this rate was only 30%. In grammar schools, on average, 89% of students, in secondary technical schools 88%, and in vocational schools 62% of students take part in environmental education. In this respect, vocational schools are in the worst situation. Here, according to the results of the survey, this rate is only 10% in some schools (Havas et al., 2004). It is also obvious from the survey, that students in the Hungarian educational system are not aware of the concept of sustainable development.

To solve this urgent problem, it would be useful to get teachers to learn about methods they could easily apply in their teaching. Furthermore, it would certainly be necessary to familiarize them with how to use educational packages and to extend the scope of teaching materials.

A possible way to health education

In this article, we would like to highlight the fact that teaching the elements of sustainable development and evolving skills and abilities mentioned above can be implemented in schools where the teachers do not have a large practical experience, teaching materials are not at their disposal, or they lack supporters within the institution. We are convinced that teachers with their good example, behavior, and creativity will lead the institution to the right path through small visible steps.

In a secondary technical school where the practice of sustainability pedagogy, unfortunately, is still not a part of everyday life, we dealt with topics connected to sustainability on lessons held by class teachers.

The following topics were presented:

- shopping habits – conscious customers;
- ecological footprint;
- poverty – wealth;

- sustainable towns/cities;
- healthy way of life, drugs;
- healthy way of life, alcohol consumption;
- healthy way of life, smoking;
- healthy way of life, healthy nutrition.

In this article we will demonstrate one possible method how to implement projects related to healthy nutrition. Through it, we also would like to remind other teachers that health education must constitute an integral part of education on sustainability, for we can not talk about sustainability without healthy environment and healthy humans.

The length of time for implementation of this project is determined by the composition and interests of the study group. For this reason, we do not give a certain number of lessons, as in practice you will have to decide how much time you should spend with this and similar projects.

If we apply a system approach, it is recommended to deal with sustainable cities first, then with shopping habits and healthy nutrition afterwards. You will realize that these topics have many common features, and it would be a great fault to deal with these separately. If we just think it over, our habitation in many cases defines our way of life, or at least it greatly affects it, from which our shopping habits emerge, and from these unambiguously our eating habits arise.

To work on the topic you will need: calorie chart, pictures of abnormally thin and overweight men, women, teenagers, and children, scale, tape-measure, calculator, frequently bought foods or their packaging collected in a box/basket (for example: biscuits, crisps, milk, tinned meat, bakery products, vegetables, fruit, soft drinks), solely healthy foods collected in a box/basket (vegetables, fruit, dairy products), whiteboard, wrapping paper, sheets, colored pens/chalk.

Initially, we ask the students to form teams, especially working in a class with a higher number of students. It is recommended that students form their teams with the teacher being aware of the exclusion of any pupils. We give a sheet of paper for each team and ask them to remember how many times and what they ate the day before and then to write it on the sheet. After it, we should discuss it together and write everything on the whiteboard, so that students can see how many students had breakfast, how many ate something two, three, or five times the day before, who had dinner and who did not (the questions can be altered freely). After this, we hand out each group a calorie chart. We recommend a use of calorie chart that includes precise data of the most frequently consumed edibles referring to 100 grams. Using it, we can easily count the amount of energy consumed by the body and specify the rate of each nutriment (protein, carbohydrate, fat) reaching our body. On these grounds, we can judge the quality of our eating habits. It is not difficult to find a calorie chart like this on the Internet or in special books on nutrition (Barna, 1996).

Then we ask the teams to count how many calories they get during one meal. When they are ready, we also talk about it together comparing the amount of necessary calories to the amount of calorie taken. We count the number of students who are “over or under the limits”. Then, every team choose one or two items of food they like from the baskets and study what these foods contain. If we are the experts in biology, or in chemistry, we can talk about how these components affect the human body. If we are not the experts, we might call a specialist (dieticians, health visitors) or use the Internet. If these possibilities are not available, we continue to ask students to find

components that can be found in many foods consumed by them. Next, every team select something from the baskets containing only healthy foods, and they learn about the components of these items comparing with the ones examined before. Then, we discuss their experience.

Before the next task, we put the pictures of thin and overweight persons in a visible place. We put the question how these states of health could have evolve, what consequences they could have, and how we can prevent them. Here, the question must emerge that how it is possible to decide whether a person is thin, overweight, or has an ideal body weight. As the experience shows, the students are usually acquainted with the concept of body weight index, however, we must describe it if they are not, and familiarize them with the easy method of how to count it.

Table 1. Counting body weight index (Barna, 1996)

Body weight index (BWI)
It is an easy calculation with the help of which you can quickly find out if you are thin, have an ideal weight, or you should lose some kilos.
BWI= weight (kg)/height (m)²
You are thin: $d \leq 20$
Ideal weight: 20-25
You have some kilos surplus: $25 <$
For example: let's take a 60-kilo and 170-cm (=1.7m) tall person: $60/1.7^2=20.76$ that is he/she has ideal weight.

Afterwards, everyone gets the chance to scale their body weight and measure their height with the help of a tape-measure so that they could count their own body weight index and draw a conclusion. Finally, we can make a little card together, including the basic rules of healthy nutrition.

In our opinion, these lessons could serve to improve different skills, especially for students to improve their communication, cooperation, and evaluation skills.

Some insights on project implementation on healthy nutrition

Describing the project in details, we are providing some teaching materials which can be immediately applied, probably in expanded or altered way, as the teacher wishes by taking into consideration the students' personality and habits.

When implementing the project, teachers have to be prepared that students come from different family background and have been brought up in different ways. In other words, their habits and diets may differ in a great extent. The claim to healthy nutrition and healthy way of living is an asset that together with other values will transform into a value system. The ranking of health in the value system is influenced by a great number of factors. In case of teenagers, circles of friends, contemporaries, or media play an important role in habit formation. These factors may influence healthy behavior both in a positive and negative way. Knowing all these facts, the teacher in charge of the project has to be prepared for possible conflicts and be ready to solve them.

In our present project, 28 students (20 boys and 8 girls) took part. They were quite open-minded and interested in the topic and participated in the common tasks with pleasure. During the discussions after the first task, it became clear that most of them take a meal irregularly. They often miss the main meal that is lunch in most cases. They explained it by their busy weekdays when out of school activities, coaching, and music lessons are regularly scheduled. Many times they feel hunger that probably influences their concentration negatively and leads to tiredness (Miles & Eid, 1997). Four students indicated that they have breakfast regularly at home before leaving for school; the others have breakfast at school before the first lesson or in one of the breaks. It could contribute to obesity as a risk factor, as those who leave breakfast tend to pick during the day (Resnicow, 1991).

During this project, it became obvious that the greatest inadequacy is found in the knowledge of both girls and boys about the constituents of edibles and the role of ingredients. Girls consider their physical appearance attuned with the expectations of our society as very important. In order to reach it, they consciously try to take healthy nourishment. Due to just this, the girls are most interested in the amount of fat in food. On the other hand, they do not care about the amount of sugar or sugar syrup in each product. Recognizing that low fat products are not analogical to the low calorie edibles really astonished them.

Everyone counted his body weight index and the results did not surprise the boys. However, many of the girls had to realize that their index numbers are normal, so they are not obese at all.

Two boys gave an account of their experiences in primary school. They were overweight, were made fun of by their classmates and often overlooked during ball games. Not even their study performance was good and they really did not like going to school. They added that their parents did not think they were obese. Then, some health problem led to a change in their lifestyles with the help of a specialist. Since then they have been doing sports regularly and consciously paying attention to nutrition. Both of them are overjoyed that they have had no problem with their weight during their secondary school years and for this reason they fit in very well in the school community.

Carrying out the project was not a difficult task since there were neither too skinny nor overweight children in the group. The children did a great job drawing up the reasons of under and over-nutrition. Among others, they mentioned advertisements, circles of friends, family habits and rigidity of these, fast food restaurants, busy parents, the impact of models in magazines that can be both positive and negative. They were astonished at the fact that irregular meals may result in serious diseases such as gastric ulcer, duodenum ulcer, heart and vascular diseases. Two of the students gave a precise account of their decision, namely that they would try to change and call their family members' attention to the dangers of their ways of life.

In order to make health education efficient, we must find the values supporting health whose influence will encourage the change of lifestyle. These supporting values are interpersonal contacts, problem solving, and flexible handling of conflicts (Meleg, 2002).

Students must understand that their everyday lives are not formed by outer circumstances, but life can be altered and pre-planned by themselves, for which they are responsible (Meleg, 2002). It can only be implemented with the personal example of the teacher and with the cooperation of teachers and health care specialists.

Conclusion

We chose to present the example of this project as it draws the attention to the importance of health education that must constitute an essential part of education on sustainability. As we know, the Hungarian inhabitants' state of health is by far inadequate. In Hungary, the first two causes of death are cardiovascular system diseases and tumors. In the evolution of both diseases, unhealthy way of life, within this unhealthy nutrition, has a really significant risk factor (Antal et al., 2003). The consequences of unsuitable nutrition in childhood affect the state of health on a long term, and they can cause enduring impairment in the operation of the body. Therefore, application of this and similar projects is really important in educational institutions from elementary to higher education.

We would like to emphasize the role and responsibility of higher education, and especially of teacher training at this field. In this regard the practice-based postgraduate teacher training which does not address the science teachers only, and where participants could learn playful, easily attained, simple methods that they could easily apply during their work at school can not be underestimated. In this way, during their everyday work they could successfully contribute to the efficient education of future generations. Development of sustainability pedagogy is a responsibility for every member of educational community and this article could raise awareness that it is a feasible and accessible course.

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