

Annales Universitatis Paedagogicae Cracoviensis

Studia ad Didacticam Biologiae Pertinentia 7 (2017)

ISSN 2083-7276

DOI 10.24917/20837276.7.9

Karolina Czerwiec, Katarzyna Potyrała, Beata Jancarz-Lanczkowska

Sustainable development in terms of health education as a part of students-future teachers training

Introduction

Culture, technology, environment, media, economy and ideological beliefs have an influence on shaping world's trends in the field of health promotion and health education. Formal education serves to gain knowledge, skills and values necessary to achieve a sustainable life, also in the area of health. Educational activities play a great part in transmitting principles of sustainable development to the public. They enable students' community to solve their health issues (Davis & Gibson, 2006; Fleming et al., 2009; Frumkin & McMichael, 2008; Nutbeam, 2000).

Modern education is associated with a significant tendency of changing approach to the school programs and social knowledge. One of the elements of this knowledge is developing the responsibility for the health of an individual and other people (Potyrała, 2011).

Health is recognized as a fundamental concept in education and 65% of adult Poles list it as a condition of a happy life (Woynarowska, 2007). In this context, the importance of "health literacy" is crucial and one of the greatest social challenges is sustainable development in the field of health education. Human health is associated with environment condition and economy, as well as educational and pedagogical activities (Upton & Thirlaway, 2010; WHO, 2002). The details are presented in the Figure 1.

The Convention on the Rights of the Child, adopted by the UN in 1989 established health education as the fundamental right for all children. Promoting appropriate behaviors is a global health idea. Around the world, efforts are aimed at protecting and improving health. The family is responsible for this process as well as the education system and society as a whole (Resolution of the Council of the European Community, 2009; Callcott et al., 2012; Glanz et al., 2015).

Engaging students in activities promoting health increases the level of their health condition and integrates health education with pursuit of a sustainable world (Davis & Cooke, 2007; Orme & Dooris, 2010). Since 1992, "Health promoting schools" have been operating in Poland. This idea assumes that the main purpose of health education is to supply students with knowledge and motivation in order to take appropriate activities to promote health in the community.

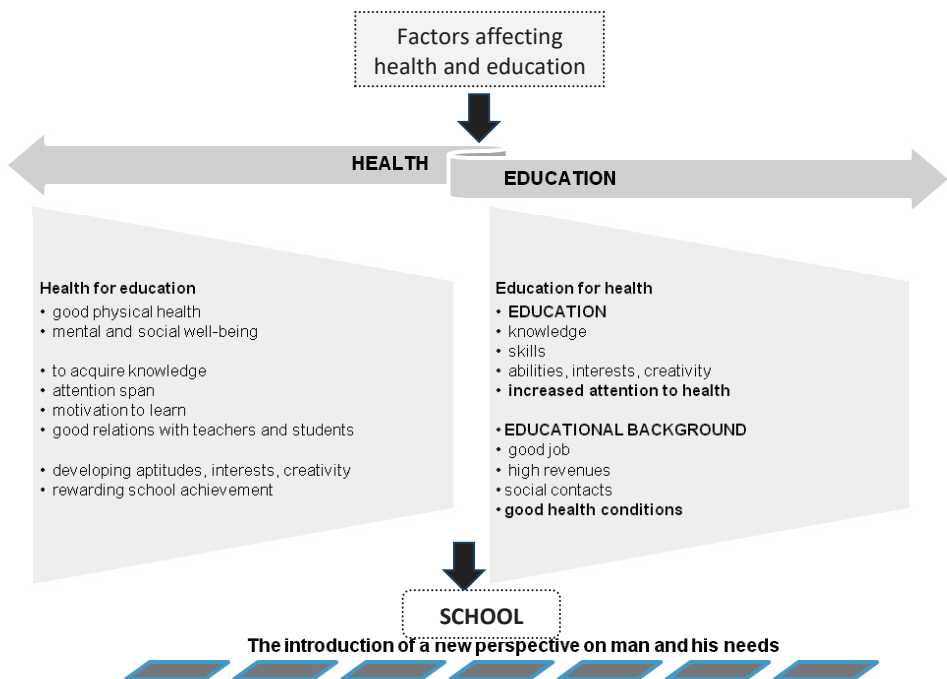
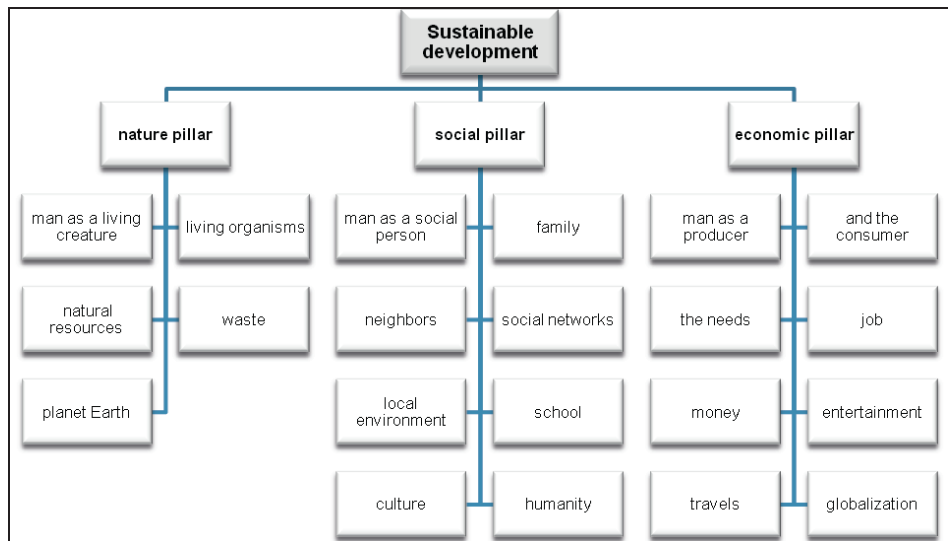


Fig. 1. Health education as the component of social pillar, economic and natural environment for sustainable development (own study based on: McKeown et al., 2002; Woynarowska, 2011).

The ESD strategy is reflected in the records of the Polish curriculum of general education of 23 December 2008 (as amended) in the form of the inventory. It was necessary to meet the issues and students' competences shaped by the level of education. ESD takes place not only during biology lessons, but also in the daily functioning of the students in the school environment by representing the appropriate behavior and participating in school activities that promote the idea of sustainable development. Furthermore, new media have a large educational impact on public health. It shapes knowledge and foundations of pro-health attitudes. In this field the most important are: Internet, social campaigns, commercials and TV shows, outdoor advertising (Turbiarz et al., 2010; Diagnoza społeczna, 2011; Purchała & Czerwiec, 2013).

Methodology of research

The main aims were: 1) diagnosis of the degree of realization of the idea of sustainable development in the field of health in schools / implementation of the principles of health education by the schools; 2) analysis of the health behaviors of junior-high and high school students.

Pedagogical observation was carried out by 150 biology students (teachers-to-be) from the Pedagogical University during the course of professional practice of teaching. Including the element of pedagogical practice connected with carried out research was related to developing students' competencies in the area of selected aspects of the observations.

It included 105 schools (75 junior high schools and 30 high schools) in Krakow and smaller towns of Małopolska and Podkarpackie regions.

The observers prior to the start of research are adequately trained and provided with instructions and observation sheet, prepared on the basis of the literature (Angrosino, 2010). The observation sheet was divided into 6 areas: 1) hygiene and health of members of the local community, 2) nutrition, 3) physical activity, 4) relationships between members of the school community, 5) school management and organization of the school, 6) the local environment. It was found that observers in each school have made a compact record of events observed in each area for 5 days during the so-called long break and for 20 minutes after lessons. The observers obtained some of the information necessary to complete the worksheet during discussions with members of the school community. The comparative analysis was made within the areas of observation between the various types of schools. Separated analysis was carried out for the junior high schools and for the secondary schools. In addition, apart from the observations, also carried out were analyses of curricula and education implemented in the surveyed schools. In total, 10 programs were analyzed – 6 programs for junior high and 4 for high school. The study was carried out in accordance with a unified guide program analysis. There was searching for keywords like: ecological and health-related topics, human rights, combating inequality in various spheres of life. On the basis of supplemented programs for each school, the frequencies of the appearance of the general and specific terms were counted.

For the purposes of this study, there were selected, from all areas of observation and analyzed curricula, only those aspects of SD associated with health protection.

Results

Analysis of curricula

The most often appearing questions about health, both in junior high schools and high schools, were the issues connected with pro-health attitudes, health hygiene, nutrition and physical education, as well as prevention of diseases and human genetic diseases. The issue of physical activity is accomplished only on a basic level (the meaning of physical activity and recreational exercise for students). Young people are insufficiently educated about the dangers of cigarettes, drugs and alcohol and its influence on physical and mental health, as well as long-term health harm because of addictions (Fig. 2).

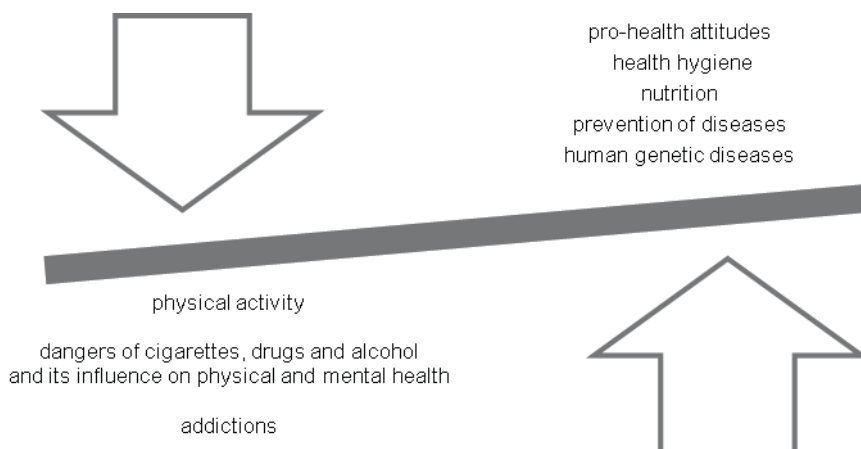


Fig. 2. Issues realized in both junior high schools and high schools.

There is more information about nutrition, varied diet and modern health hazard at junior high school than high school (balanced diet, the energy value of essential nutrients, civilization diseases, mental and physical health, emotions and resistance to stress). On the other hand in high school it is more discussed about influence of viruses, bacteria, fungi and protists on human health (Fig. 3).

Polish curricula strongly promote the use of ICT in the implementation of sustainable development in the area of health promotion issues. The implementation of these contents is based on using new media in search of information about health, diseases and their treatment, medicines, active lifestyle, stress and addictions on the Internet. Students should know how to search for information using search engines, specialized services of health, medical discussion groups or forums; as well as they should use ICT to create pro-health projects by themselves.

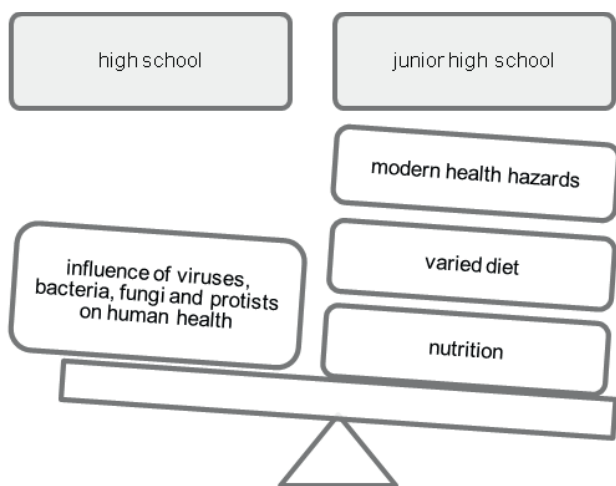


Fig. 3. The differences between the degree of implementation of issues on health in junior high schools and high schools.

Pedagogical observation at schools

Tables 1–4 present some actions taken by the junior high schools and high schools in health issues.

Teachers on duty on school corridors watch over students' safety (100% of schools). Unfortunately, incidents of smoking outside the schools occur sometimes. Students (70% in junior high school and 85% in high school) wear backpacks on one shoulder. Fortunately, teachers in each school pay attention to the wrong way of wearing backpacks and the position in which students sit in classrooms. The list of actions are included in Table 1.

Table 1. Actions/phenomena connected with health and pro-health behaviors in junior high schools and high schools – health & hygiene.

The observed phenomenon	% of schools/students	
	junior high school	high school
The duration of breaks: 5 to 20 minutes depended on the time of the day.	100	100
Teachers take care of pupils on the corridors during breaks.	100	95
Pupils sit in a wrong way at their desks (they swing on the chairs).	80	80
Pupils wear their backpacks only on one shoulder.	70	85
The problem of pupils smoking.	30	30
Toilets well-equipped (access to soap and towels).	95	85

Students have the opportunity to buy healthy food (80% junior high schools, 80% high schools) and unhealthy (30% junior high schools, 80% high schools) in school shops. Most schools have a canteen serving healthy lunches (80% junior high and 90% high schools). In each junior high school are cases of overweight and obesity (10% of students), malnutrition (5%) and anorexia (1%). In high schools few cases of overweight have been noted. A detailed list of actions is presented in Table 2. The crucial fact is that the Polish government in 2015 (a few months after the students' observations) introduced a bill prohibiting the sale of junk food in all school shops.

Table 2. Actions/phenomena connected with health and pro-health behaviors in junior high schools and high schools – nourishment.

The observed phenomenon	% of schools/students	
	junior high school	high school
Breakfast (sandwiches) eaten in the corridor.	90	40
Lunch break after 12:00 p.m.	100	100
Free meals for eligible students.	80	–
School canteens.	80	70
School shops with healthy food: fruit, water.	80	80
School shops with unhealthy food: chips, cookies, candy bars, sweet fizzy drinks*	95	80
Water coolers in the corridors.	30	–
Pupils obesity.	10	10

* the observations were introduced before the entry into force of the Regulation on groups of foodstuffs for sale to children and the youth in the units of the education system and the requirements to be met by foodstuffs used in the context of public nutrition of children and the youth in those units (Dz.U. z 2015 r. poz. 1256)

Schools are equipped with gyms (90% of junior high and 95% of high schools), school playgrounds (100%), gyms and small fitness (40%), climbing walls and halls for martial arts (20%). They also have access to the pools (40% of junior high and 80% of high schools). Each school organizes competitions and extracurricular sport activities. Sick notes from physical education classes among students (mostly girls) occur in 40% of junior high and high schools. Details are presented in Table 3.

Table 3. Actions/phenomena connected with health and pro-health behaviors in junior high schools and high schools – sport & physical activity.

The observed phenomenon	% of schools/students	
	junior high school	high school
Big, well-equipped gyms.	90	95
School playgrounds available for pupils in the summer.	100	100
Gyms available only during physical education lessons.	80	70

Varied exercises during physical education classes.	20	20
Swimming.	40	80
Sports competitions organized by school.	100	100
Sports special interest groups.	100	100
Fitness, zumba, aerobics in the way of extra-curricular activities.	40	10
Climbing walls and halls for martial arts in the way of extra-curricular activities.	20	–
Sick notes from physical education classes.	40	40
Pupils come to school by public transport.	no data	60
Pupils come to school on bikes.		10
Pupils come to school by cars.		30

Pro-health issues were discussed in small number of schools during form periods/homeroom hours. All of health protection issues are discussed during biology lessons. In small number of schools there were some meetings about healthy eating with doctors and dietitians. At all schools there are posters and flyers about unsafe behaviors connected with addictions and their bad influence on human health. At some schools there are non-smoking signs (Table 4).

Table 4. Pro-health actions in junior high schools and high schools.

Activities	% of schools	
	junior high school	high school
Notice boards/bulletin boards and posters in the school corridors		
Education in the anti-smoking and anti-alcohol prevention	100	60
Promote healthy eating	100	30
Form periods/homeroom hours		
about health protection	–	30
meetings with dietitians and doctors about healthy eating	10	20

Observation and analysis of curriculum were supplemented with a discussion, with the observers participating in the study. It describes the current situation of sustainable development in the area of health protection. On this basis, there were established proposals for action to increase pupils' awareness in this area, e.g.: pay more attention to the effects of various diseases, involve schools in social activities and increase awareness of health-friendly students, create projects and receive grants from organizations that promote health behavior actions (Table 5). Students emphasized that such activities were developed at schools through using ICT by teachers. Teachers often implement pro-health contents based on WebQuest – pupils create health-promoting projects based on instructions posted on websites.

Table 5. Proposals for raising pupils' awareness of sustainable development in the field of health protection

Problem: Realization of health education in Polish schools		
How it is? <ul style="list-style-type: none"> • The lack of consistency in the school activities (no imposed penalties for breaking the rules, eg. smoking). • Insufficient funds (poor equipment of schools, too many pupils in classes). • Health-related posters and leaflets hanging on the walls for too long so they do not fulfill their educational purpose. • Applicable (broad) curriculum must be implemented, thus teachers "have no time" to deepen the contents dealing with health. • Not paying attention to eating healthy meals in appropriate conditions. • Lack of in-depth presentation of the harmfulness of drugs (cigarettes, alcohol) and knowledge of the diet in terms of risks, rules of use of dietary supplements, weight loss and encourage the growth of muscle mass. 	How should it be? <ul style="list-style-type: none"> • Pay more attention to the effects of various diseases and addictions. • Involve schools in social activities and increase pupils awareness of pro-health behaviors. • Only healthy food in the school shops and canteens in affordable prices. • School playgrounds available not only during physical education classes. • Sick notes from physical education classes should be verified by school. • Increase the awareness of preventive medical examinations for health. 	Why is it not as it should be? <ul style="list-style-type: none"> • Pupils cannot choose health education issues they are interested in. Sometimes contents are boring for them. • Scant involvement of the authorities in efforts of health promotion. • Many teachers and parents are not interested in shaping pupils awareness about consequences of unhealthy behaviors. • Teachers have not enough knowledge about health protection. • Insufficient promotion of health behaviors during breaks, lessons, school trips. • Adults often force pupils to particular way of life (not always good for their interests) without the plurality of alternatives, eg. physical activity.
Conclusions <ul style="list-style-type: none"> • Involving pupils in the promotion of healthy lifestyles (eg. long-term projects). • Discussions about health care during form period (more meetings with doctors, nutritionists, fitness instructors) – realization of issues connected with pupils' interests and needs. • Creating projects and receiving grants from organizations that promote health behavior actions. • Promoting health education by celebrities (actors, singers). • Removing machines with sweets and sweet drinks; implementing machines with water and fruit. • Good relations between school, teachers, parents, pupils and local community. 		

Conclusions

The acquisition of habits with consciously attaining the idea of sustainable development is related to the educational activities of a school, the local community and non-formal education institutions. Their scope of activity includes the development of students' beliefs that the functioning of the human body depends on the actions taken by the man to influence the improvement of their health and well-being.

The ESD is permanent education, which should be started at the lowest level of education. Certainly, a school (due to the range of influence) is the main area of the ESD implementation by developing awareness and competence of the students in the context of taking pro-health actions at the level of the local community, national and global.

Particularly important is the cooperation between school, local community and parents, who should continue and complete teachers' tasks in the area of children's health education by traditional educational activities, as well as using ICT.

Recommendations

The changes in health education are aimed at the development of educational standards, introduction of which at the various stages of education will improve the quality of health of the Polish society. It is necessary to provide conditions in which knowledge and skills gained from the school will be used in everyday life. In particular, it is also important to emphasize the need of shaping proper attitudes to maintain health (proper nutrition, physical activity, avoidance of drugs, preventive examinations, etc.) and their gradual consolidation.

In the last few years, many new solutions have been introduced in this area. However, to be able to speak about full success, its implementers (teachers) should be allowed to acquire the relevant professional competence. Reflection of students, on the need to change the curriculum of biology and activities of schools aimed at raising pupils' awareness of health, indicates the need to include a permanent thematic observations to the course of practice. Verification of competence, in the practice means giving the future teachers a conscious self-evaluation tool: the verification of educational goals and educational evaluation of the effectiveness of educational activities, planning and searching for new solutions.

References

- Angrosino M., 2010, *Badania etnograficzne i obserwacyjne*, Wydawnictwo Naukowe PWN, Warszawa.
- Callcott D., Miller J., Wilson-Gahan S., 2012, *Health and Physical Education. Preparing Educators for the Future*, Cambridge University Press, UK.
- Davis J.M., Gibson M.L., 2006, *Embracing complexity: Creating cultural change through education for sustainability*, International Journal of Knowledge, Culture and Change Management, 6(2), 93–102.
- Davis J., Cooke S., 2007, *Educating for a healthy, sustainable world: an argument for integrating health promoting schools and sustainable schools*, Health Promotion International, 22(4), 346–53.
- Diagnoza społeczna*, 2011, *Warunki i jakość życia Polaków. Raport*, J. Czapiński, T. Panek (ed.), Rada Monitoringu Społecznego, Warszawa.
- Fleming M.L., Tenkate T., Gould T., 2009, *Ecological Sustainability: What Role for Public Health Education?* International Journal of Environmental Research and Public Health, 6(7), 2028–2040.

- Frumkin H., McMichael A.J., 2008, *Climate Change and Public Health*, American Journal of Preventive Medicine, 35(5), 403–410.
- Glanz K., Rimer B.K., Viswanath K., 2015, *Health Behavior: Theory, Research, and Practice*, 5th Edition, Jossey-Bass, USA.
- McKeown R., Charles A., Hopkins R., Rizzi M.C., 2002, *Education for Sustainable Development Toolkit. Version 2*. Center for Geography and Environmental Education University of Tennessee, Knoxville.
- Nutbeam D., 2000, *Health literacy as a public health goal: a challenge for contemporary health education and communication strategies into the 21st century*, Health Promotion International, 15(2), 259–267.
- Orme J., Dooris M., 2010, *Integrating health and sustainability: the higher education sector as a timely catalyst*, Health Education Research, 25(3), 425–437.
- Potyrała K., 2011, *Kreatywny nauczyciel – wskazówki i rozwiązania. Biologia i przyroda*, Wydawnictwo Naukowe UP, Kraków.
- Purchała M., Czerwiec K., 2013, *Assumptions and health education models and their implementation of Polish education system*, Studia ad Didacticam Biologiae Pertinentia, 3.
- Resolution of the Council of the European Community*, 2009, https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/108622.pdf
- Turbiarz A., Kadłubowska M., Kolonko J., Bąk W., 2010, *Rola mediów w promocji zdrowia*, Problemy Pielęgniarstwa, 18(2), 239–242.
- Upton D., Thirlaway K., 2010, *Promoting Healthy Behaviour*, Pearson Educational, England.
- WHO, 2002, *The World Health Report 2002: Reducing Risks, Promoting Healthy Life*, Geneva.
- Woynarowska B., 2007, *Edukacja zdrowotna. Podręcznik akademicki*, Wydawnictwo Naukowe PWN, Warszawa.
- Woynarowska B. (ed.), 2011, *Organizacja i realizacja edukacji zdrowotnej w szkole. Poradnik dla dyrektorów szkół i nauczycieli*, Wydawnictwo ORE, Warszawa.

Sustainable development in terms of health education as a part of students-future teachers training

Abstract

Health education and health-promoting behaviors are significant elements of the social pillar, economic and natural sustainability. The results of pedagogical observation of pupils' health behaviors, as well as conclusions related to accomplishment of the principles of health education at 75 junior high schools and 30 high schools are presented in the paper. The analysis of observations and curricula were supplemented by interviews with the 150 second year master degree biology students who had participated in this study as observers. On that basis the diagnosis of the current situation and proposals for action to raise awareness of students in the field of sustainable development were made. Results of the research showed that community, parents and non-formal education institutions should develop students' beliefs that the functioning of the human body depends on the actions taken by the man to influence the improvement of their health, and school is the main area of the ESD implementation.

Key words: education for sustainable development, formal and non-formal education, health education

dr Karolina Czerwiec

Pedagogical Univerisiy of Cracow
e-mail: karolinaczetrwiec@gmail.com

dr hab. prof. UP Katarzyna Potyrała

Pedagogical Univerisiy of Cracow
e-mail: potyrała2@wp.pl

dr Beata Jancarz-Lanczkowska

Centre for Education Development, Warsaw
e-mail: bjancarz@gmail.com