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DEVELOPMENT OF ENVIRONMENTAL AND HEALTH-CONSCIOUS BEHAVIOUR IN LOWER PRIMARY ENGLISH LESSONS

Abstract

Health as a value was already respected in the life of the oldest communities, and they tried to create harmony in their lives. The perception of health, the positive attitudes towards health are established in childhood. Families and the educational work carried out in public education institutions, occupy a special place in this process. Health education and promotion, as important elements of education for sustainability, prepare students to respect health as a value and be able to contribute to the creation of a sustainable society and economy in an active and constructive way. The purpose of this study is to present the theoretical background and pedagogical practice of health education by examining the content of national curricula, the Health education programs of primary schools in Győr-Moson-Sopron county, and a survey performed with the headteachers and English teachers of the elementary schools of this county. We assume that these schools have a Health education program, health education is included in the curriculum of all subjects, project work is considered a significant method. Environment and health education can be supported by project work, highlighting sustainability and the importance of environment protection. The novelty of the pilot environmental education project - presented in this paper - is the module focusing on environmental hazards, as this is an extracurricular topic. The pre- and post-survey carried out among the 4th grade learners of a volunteer primary school before and after the project implementation proved that they had some basic knowledge about some areas of sustainability and healthy life but the project could help them to widen and deepen their knowledge and to understand the link between environment and their health.

Keywords: health education; project pedagogy; foreign language teaching

Introduction

"Sustainability is defined through three interconnected domains or pillars (environment, economic, and social) and it is the process of maintaining change in a balanced environment, in which the resource exploitation and the orientation of technological development are all in harmony and enhance the potential to meet human needs and aspirations" (Kiss, 2019). According to the World Health Organization, (WHO), the evidence of a link between human health and the environment is mounting and almost a quarter of global deaths result from different environmental factors such as air, water and soil pollution (Vezér. 2012) and climate change (Páldy, 2017). Environmental health encompasses those aspects of human health and disease that are determined by various environmental factors. It includes the direct effects of chemicals, radiation, and certain biological factors as well as the indirect effects of housing conditions, urban development,

land use and transport on health and well-being. The Seventh Ministerial Conference defined the future environment and health priorities and commitments with a focus on climate change, biodiversity loss and environmental pollution (WHO, 2023). In Geneva (2004), the 57th World Health Assembly emphasized in its decision for health promotion, health education, and a healthy lifestyle that unhealthy nutrition, smoking, alcohol consumption, and a sedentary lifestyle are serious challenges. The growing technological and anthropogenic impact on the environment, and the need for sustainable development of human society require the development of education and putting a greater emphasis on environmental issues preparing students to perceive the rapidly changing everyday reality (Aleksandrov et al, 2016). It is also important "to encourage teachers to plan and implement discipline-based and interdisciplinary education in their teaching practice and contribute to integrate the principles, values, and practices of sustainable development (SD) into all aspects of education" (Uitto, 2017). The basic task of health education in Hungarian schools is to prepare the rising generations, by developing their health behaviour, within an institutional framework, so that they can take an active and responsible role in the realization of their healthy lifestyle as adults (Meleg, 2002). The goal of health education is to influence the complex lifestyle, because the individual health behavioural risks amplify each other's effects. It is very important to convey knowledge about protecting health, but the information itself does not result in a change in people's attitudes or behaviour. The effectiveness of physical and mental health education requires a processbased, complex, interactive, skill-building activity system (Bazsika, 2011).

According to the Comprehensive School Health Promotion Program, (2015), schools should focus on the following four areas:

- implementation of healthy nutrition (preferably by connecting local production local consumption);
- daily physical education for all students meeting the health promotion criteria, as well as other /physical exercise opportunities;
- promoting the development of children's mature personality and mental health with person-centred pedagogical methods, as well as the effective use of the arts for personality development and the effective use of community-based health development;
- facilitating the skill-level acquisition of a wide range of health knowledge.

Since physical and mental health education is a priority educational goal, it cannot be linked to just one subject, but all subjects should contribute to the achievement of this goal. That is the reason of creating the project, called Healthy English, which can bring a complex, cross-curricular approach in English language teaching and learning process.

Járomi (2016) examined the implementation of the Comprehensive School Health Promotion Program in 288 primary schools among 3rd, 5th and 7th grade students. The research aimed to detect the health knowledge and attitudes, to explore the movement patterns and the characteristics of health culture. The results show not extremely determining but positive changes in children's health behaviour. The examination of Health Education Programs was carried out by Hungarian School Health Society at national level, involving the 10 % of the institutions of public education, in 2006. According to the research it can be stated that the schools cannot be characterized by a cross-curricular, interdisciplinary approach. The examined schools do not monitor, check and evaluate the efficiency of the health education program, and it would be essential to establish a team that is responsible for the implementation of the planned health education activities (Kaposvári, 2007).

The Health Behaviour of School-Age Children research has been carried out in cooperation with the World Health Organization. The national report on the 2018 survey of international research examines the health behaviour of adolescent youth. According to the conclusion of this research "poor eating behaviours, physical inactivity and the rise in adolescent overweight and obesity indicate that insufficient progress has been made in the implementation of policies and actions" (Inchley et al., 2020).

Measurements in Hungary at national level, or any research results on the health status of the 6-10-year-old age group are not available, which means a serious research gap. Moreover, Czrappán (2022) summarized that the experiences of the last decade show that there is hardly any research-based data, there is hardly any systematic monitoring that would serve as a basis for central decisions regarding Hungarian National Core Curricula. A content analysis of the specific educational goals of the Hungarian National Core Curricula has not been prepared before. These facts underpin the necessity of the content analysis and questionnaire surveys that provide insight concerning the Hungarian educational system. This paper analyses the goals of health education and promotion in Hungary as important parts of sustainability. For this, a review of the main documents concerning children education in Hungary was carried out, and surveys were conducted among educators to generate data concerning the educational conditions and the attitude of the system towards sustainability. Moreover, this paper presents the results of a pilot test for a project of environmental education with children, that is formulated considering the information generated by the previous document analysis and surveys. The environmental education project focuses on sustainability and the link between the environment and health as well as draws the children's attention to the need of any little steps to protect the environment. For this reason, although only at a case study level, the knowledge of the causes and health effects of environmental hazard are revealed and some actions to protect environment and health are also mapped. These data show learners' knowledge about sustainability, their attitudes to environment and their environmental culture and behaviour. The project can contribute to the development of Green Competences that are embodying sustainability values, embracing complexity in sustainability, envisioning sustainable futures and acting for sustainability (Bianchi et al., 2022).

Foreign language teaching and learning in curriculum

The main aim of foreign language teaching and learning is to enable the learners to gain their personal communication goals by collecting, comprehending, sharing information in foreign languages. It is also important to be able to use a foreign language as a tool in personal and professional life as well. An essential part of the pedagogical work is to develop and strengthen the positive feeling that children are able to satisfy their basic communication needs in a foreign language. In primary school, foreign language learning is based on the processes of natural language acquisition. Pupils build on the experiences of acquiring their mother tongue while learning a foreign language.

"Foreign language teaching is activity- and learner-centred, and it creates situations for the learner according to his or her age or interest in which his or her personality develops and uses the language effectively as a tool. For all this, an approach to communicative competence in a broader context is essential, and the joint development of linguistic elements (systems of signs and rules) and sociolinguistic components. An interdisciplinary approach that builds on knowledge gained in other subjects is particularly significant, and knowledge acquired in a foreign language enriches the learning of other subjects. Project tasks, gathering information for the subject, internet research, can all be done in a foreign language, preparing the student for the exchange of information in the world of work" (Government Decree, 2018).

In Hungary, foreign language learning is compulsory from the 4th grade. However, if there is any opportunity or need for foreign language learning, it is worth starting children's language development earlier. It is important to motivate children for the foreign language learning. In lower primary classes foreign language lessons should be experience-based, activity-oriented. Learners should be active participants of the lessons. It is important for the language learner to be involved in the cooperative learning process. The lessons at this pedagogical stage should be characterized by playfulness and varied forms of interactions which can be based on learning songs, rhymes and tales. Storytelling can be combined with movements and dramatization. Cooperative forms of work and project work that encourage collaboration in classrooms develop children's problem- and process-oriented thinking as well as communication in foreign language. Becoming an active, independent language learner is essential for lifelong learning.

According to these general goals, the cross-curricular integration, the holistic approach, and the development of the entire personality of the students and the educational goal from the curriculum can be highlighted because

- education for physical and mental health is included as a priority development area/educational goal in all the National Curricula published since 1995;
- shaping the health-conscious attitude of children, forming and developing their health-conscious behaviour means developing the entire personality of the students and satisfying their "*biogenic, psychogenic and sociogenic needs*" (Kováts-Németh, 2010, p.201);
- education for physical and mental health cannot be linked to one subject, it can be linked to the curriculum of any subject or any extracurricular activities, making

use of the possibilities of connection between subjects and the holistic approach, which presupposes a renewal of the pedagogical culture.

All of this confirms that foreign language classes should also provide the opportunity to develop learners' physical and mental health and a healthy lifestyle.

Methods and materials

The research related to develop children's environmental- and health conscious behaviour it should be have a glance at the national and institutional background, using this paper involves document analysis and, questionnaires and statistical analysis as research tools (Boncz, 2015).

The following hypotheses were formulated for the research:

H1:Primary schools have a Health education program based on situational analysis, and is constantly monitored, evaluated and revised.

H2: Health education can be found in the curriculum of all subjects.

H3: Applying project work is an outstanding method.

H4: Environmentally and health-conscious behaviour is realized in the examined learners' actions.

Document analysis 1 - Content analysis of National Curricula 1995-2020

In Hungary, the National Core Curriculum regulates the content of educational work in public education institutions. Since 1995, the National Curricula have identified physical and mental health education as a priority development goal for schools. As the first step of the content analysis, common elements appearing in each curriculum were selected. After that, the focus was on the examination of different, new elements. (Government Decrees 1995-2020)

Document analysis 2 - Content analysis of Health Education programs

Since 2003, for Hungarian schools it is compulsory for schools to prepare a Health Education program. That was the reason of the analysis carried out in 45 primary schools maintained by the state institution maintenance centres in Győr-Moson-Sopron county. The programs were examined according to given criteria such as:

- whether the given institution has a Health Education program;
- whether it is based on a situation analysis;
- whether any goals, tasks, activities, or methods have been defined;
- whether there are people responsible for coordinating, controlling and evaluating the implementation of the activities.

A questionnaire among headteachers

In addition to the content analyses of the Health Education programs, the headteachers of the above-mentioned schools were interviewed by a written questionnaire of 31 questions. The survey contained mainly closed questions based on the results of the Health Education program analysis and its aim was to reveal the relevance between the plans and reality. The questions concerned some general data of the schools, as well as the goals, tasks, activities and methods used by them in education for sustainability. The survey was filled in by 40 headteachers. This study highlights only two questions concerning the methods used in lessons and the extracurricular activities to reveal the forms of sustainability education and to prove the need of the health education project that was prepared.

A questionnaire among English language teachers of primary schools

As the project focuses on the 4th grade was prepared for English lessons, it was also important to get some information from the English teachers of the examined schools. Only 32 teachers gave answers for the online survey that contained 10 closed questions concerning mainly the methods and tools they use in their lessons and whether they implement any material concerning sustainability or health education and development process.

A survey among language learners - a case study

A written questioning of the students was carried out before introducing the project involving 63 fourth-grade students, studying English in one voluntary participating school. The purpose of the survey was to reveal the students' prior knowledge. After presenting the project in 10 lessons, there was another written questioning to check the short-term effect of the project on the children's knowledge, attitudes, behaviour. The questions concerned the causes and health effects of environmental pollution, and activities carried out for environmental protection and health preservation. In the first questionnaire there were open questions. The answers in the first 3 places from the lists were highlighted. In the second questionnaire the Likert scale was used.

Results and discussion

Hungarian National Curricula emphasize that schools have a great responsibility in the field of physical, mental and social development of students and establish the joy of health and the value of harmonious living. Another key concept is the development of positive attitudes, behaviour and habits towards environment and health. The documents include tolerance and assistance for injured and disabled people, as well as preparation for adult-hood and responsible relationships. Another common feature is that they highlight the importance of preventing domestic and traffic accidents and diseases, as well as the development of a system of activities aimed at preventing harmful addictions. The project, carried out among the students, emphasizing the importance of environmental protection in order to preserve health, is in line with these goals.

Considering the results of analysing Health education programs, they contain very similar, general issues, there cannot be found any unique goals, tasks, activities, and they are not built on a situation analysis. However, it would be important because it is the only way to carry out the health education activities considering the needs, possibilities and potentials of a given community. In addition, evaluation and feedback are also inevitable for effective and efficient work however, there is a lack of examination of the health education activity system at institutional, county and national level, and they are not built on a situation analysis. The organization of daily physical exercise, movement or any physical activities like folk dance is a legal requirement (according to the Comprehensive School Health Promotion Program) that all institutions comply with. In order to ensure students' mental health protection, schools focus on reducing bullying, and conflicts and offer extracurricular activities after lessons. In the range of extracurricular activities (84.44%), school competitions and quizzes are at the first place. In the case of 30 schools (66.66 %), the organization of Health Days is an important element of the health education activity system. There are schools (64.44%) that highlighted the presentations/lectures given by the school doctors or nurses. In order to ensure sports and physical exercise, some schools (53.33 %) organize sports circles (53.33%) walking and cycling tours (48.88%), excursions (28.88 %) and sports days (26.66 %). Only 7 schools (15.55 %) have ever prepared projects related to health education. (Figure 1)

Figure 1: Activities to develop health conscious behaviour



Source: own edition

Analysing the results of the headteachers' questionnaires, it can be stated that games, discussions, mind maps, cooperative learning, and role-plays are parts of everyday pedagogical practice, according to each interviewed headteacher. Project work (57.5 %) and more presentations of students (40 %) could be included in the methodological palette. (Figure 2)



Figure 2: Elements of the pedagogical practice

Source: own edition

The headteachers' answers - considering the extracurricular activities - show that the celebration of special green days can be easily incorporated into daily practice. On Health Days and thematic days, schools organize contests, sports programs, and excursions, and there are lectures held by school health experts and external speakers. (Figure 3)



Figure 3: Extracurricular activities

Source: own edition

Considering the answers of English teachers, among the methods used by them, explanation, discussions and role plays are at the first three places. Only 9 teachers mentioned projects. They deal with healthy eating, family and relations and daily routine as these are among the topics of 4th grade teaching-learning material, but they do not use any extracurricular material on environment and health because there is no time for it, it is not so important than the general topics, and children even in Hungarian do not have enough knowledge, so it is pointless to deal with it in English lessons. Table 1 presents the results.

What methods do you use most often?	Do you cover any topics of sus- tainability in your lessons? If yes which ones?	If you do not deal with sustain- ability, why not? Give reasons	
explanation – 80 %	healthy eating – 80 %	lack of time – 72.50 %	
discussion – 80 %	family and relations – 67.50 %	it is less important than any other topics – 45 %	
role plays – 42.50 %	daily routine – 67.50 %	it is pointless to deal with this topic because of the low level of English – 42.50 %	

Table 1: English teachers' methods and attitudes towards sustainability

Source: own edition

The main aim of the project is to focus on sustainability and the link between the environment and health as well as draw the children's attention to the need of any little steps - made by them - to protect environment. The Healthy English project consists of three modules. (Figure 4.) Two of them contain the topics of the curriculum. The novelty of the project is the module that focuses on environmental hazards because this is an extracurricular topic.

Figure 4: The modules of the project



Source: own edition

Each module has its own goals that is presented in the figure below. (Figure 5)

Environmental hazards	• draws children's attention to the causes and health effects of them and the need to reducing these hazards
Healthy body, healthy soul	• focuses on preserving students' physical and mental health
My ties	• strengthens the identity of the locality and the community in the students

Figure 5: The main goals of the modules

Source: own edition

The process of the project creation was divided into four phases, which were the preparatory, planning, implementation and feedback stages (Pinter, 2017). In the preparatory phase, the topic, aim and title of the project were defined, and a written questioning was carried out aiming to reveal the students' prior knowledge. During the planning phase, for each module, the environmental challenges to which solutions must be found together with the children during the processing of the module were formulated. For each module, a goal to be achieved, classroom activities helping to achieve the goal, and methods for processing the course material were assigned. The methods based on the activity and cooperation of the children were used so project work and cooperative learning were preferred. Lesson plans were also prepared for processing the teaching – learning material of the module. In the implementation phase, the Environmental hazards module was worked on, applying the previously prepared lesson plans. The frame of the module was given by the story Sharon finds environment. The main character of this tale, Sharon, is looking for the answer to what she can do to protect the environment and preserve her own health. Children help her find the elements of the environment and the possibilities of protecting them in order to live in a healthy environment. "The content of this story offers a window into the participants understanding of sustainability, reflecting what they find important and doable in their specific situation, and for the teacher, this includes ideas about meaningful learning activities" (Kall et al, 2024 p. 547). Lessons focused on vocabulary expansion and integrated skill development. The lessons started and finished with a short relaxation or/and a circle time activity. The teaching - learning procedure was supported by videos and interactive materials as well, but children could also draw, colour, cut, and glue – in other words taking active part in learning procedure and learning by doing – while creating the project products.

The feedback phase contained the post-questioning of the children and the evaluation of the project.

In the first question of the pre-questioning survey, the children had to write down the three words that come to their mind in connection with the word "environment". Students

wrote 49 different words. The most popular words were plant/plants, in the second place was the word nature and in the third place was the word animals.

Considering the results of the pre- and post-questioning of children, a small progress can be seen in the children's knowledge and behaviour. Based on the given answers, there are common elements in the questionnaires. It can be seen that there are some changes in the order of the words and new elements also appeared after the lessons of the module. It means that their vocabulary was widened and deepened. Table 2 shows the causes of environmental hazards as well as health damage and diseases caused by these environmental hazards, comparing the results of the children's pre- and postquestionnaires.

Environ- mental haz- ards	Causes (1 st test)	Causes (2 nd test)	Health dam- age/illness (1 st test)	Health dam- age/illness (2 nd test)
air pollu- tion	 cars factories rubbish 	 smoke of factories emission vans/cars 	 lung disease cough lung cancer 	 poisoning lung disease/lung cancer asthma
water pol- lution	 rubbish oil plastic 	 rubbish sewage chemicals 	 death dermatologic problems infection 	infectionepidemicdiarrhea
soil pollu- tion	 chemicals rubbish oil	 plastic bottles plastic foil household waste 	 poisoning unhealthy plants food shortage 	 drinking water pol- lution poisoning food poi- soning
stress	 tests work lack of time/deadlines 	 keeping deadlines school tests continuous noise 	 depression nervousness insomnia 	 irritabil- ity/ nerv- ousness depres- sion anxiety, fear
virtual haz- ards	 computer hacker telephone	 social media reality shows mobiles 	 addiction eye damage sleeping disor- ders 	 addiction detach- ment from reality eye dam- age

Table 2: The results of the children's questionnaire – causes and effects of
environmental hazards

Source: own edition

Among the activities of protecting environment, in the 1st questionnaire, children mentioned that they don't litter, they collect the waste in a selective way and save the environment. In order to preserve their health, they move or do sports, sleep enough and

eat fruit and vegetables. These things are taught for them in the lessons of Environmental studies, and everybody can hear about these typical activities. This means that children pay attention to the basic rules and expectations.

In the 2nd questionnaire a list of activities was offered for children and in a 1-5 Likert scale, they had to decide how important they feel the given activities. The list of statements contained the results of the 1st questionnaire and some elements of the module. According to the answers it can be seen that the privilege of waste management was not broken but some other elements of environment appeared, for example water, electricity and air. These areas were mentioned in the module. The evaluation average of the statements is between 4.86 and 4.37 (standard deviation 1.14 and 0.43) and there is only a difference of 0.49 between the average values, which means that their attention was successfully focused on a wider range of activities. Figure 6 shows the results of the 2nd questionnaires concerning the activities to protect environment.

Figure 6: Activities to protect environment



Source: own edition

Figure 7 introduces the results of the 2nd questionnaires concerning the activities to protect health.





Source: own edition

Analysing the activities that protect children's health, fruit and vegetable consumption, moving, sports and sufficient sleep retained their importance for a healthy lifestyle. The most important for them is wearing clothes according to weather that is a new element. On the second place, cyberbullying can be found. All this coincides with the fact that children consider fear and anxiety due to bullying to be the most significant of the health effects of the virtual environment (4.34; standard deviation 1.16). Social media is considered the most dangerous in the virtual world (4.34; standard deviation: 1.11). The statement in the 6th place can be linked to this topic, based on which, children discuss their problems and difficulties with their parents (4.60; standard deviation 0.83). If students trust their parents and can turn to them with confidence, they can also get help in overcoming the causes (deadlines, school assignments) and consequences (irritation, depression, anxiety, fear) of stress. In addition to these, children also take care of everyday hygiene and dressing. More diverse answers were given regarding the causes and consequences of environmental pollution and also in the field of environmental protection and health protection. The order of the previously named causes and consequences has changed the range of activities has expanded. The project demonstrates - even though at a case study level - that it is worth to enrich the teaching learning material of any subject with elements on sustainability to draw the learners' attention on environmental hazards and global problems.

Evaluating the project, it can be stated that the learners' cognitive and emotional skills, communicative competences have developed, they were motivated and the willingness to participate in the lesson was increasing lesson by lesson. Beside the positive impact some difficulties also encountered. There were children who was not really familiar with group work or they were not satisfied with the groupmates. Children who did not work in cooperative groups, had difficulties accepting that the teacher is not a direct controller but rather a facilitator, a supporter. The other problematic point was that some children preferred using Hungarian instead of the target language.

Examining the hypotheses, it can be stated that one was partially proved, two were not proved and one was proved.

H1: Primary schools have a Health education program based on situational analysis, and is constantly monitored, evaluated and revised.

This hypothesis was partially proved because the examined schools have Health education program but they are too general and are not systematically checked.

H2: Health education can be found in the curriculum of all subjects. This hypothesis was not proved because it was not mentioned in the examined documents and in the curriculum of English health education is not built in.

H3: Applying project work is an outstanding method.

This hypothesis was not proved because it was mentioned by less than 60 percent of the schools and in English lessons this method was not mentioned among the first three most popular methods.

H4: Environmentally and health-conscious behaviour is realized in the examined students' actions.

This hypothesis was proved because after the implementation of the project the children's responses reflected that environmental and health awareness appears in many more aspects of their everyday activities understanding that each little step counts.

Conclusions

The main aim of this paper was to present the current situation of health education as a part of sustainability education in Hungary with the help of a case study. The results of the research prove that there is a great need to emphasize the role of sustainability education however some efforts are being made to develop students' environmental awareness and their positive attitudes towards environment. According to the results of document analysis and questionnaires, it can be concluded, that the institutional documents mention a wider range of activities concerning sustainability education and health developing processes than in the everyday pedagogical practice is realized. The institutions do not check or evaluate the implementation of health education activities. Moreover, there is a lack of examination of the health education activity system not only at institutional but at county and national level as well. Considering the methodological richness, among the methods used by the teachers, project work, is neglected. The cross-curricular approach and topics of sustainability do not appear in the everyday pedagogical practice, which was proved by the asked teachers. The implementation of the project has shown that to achieve the goals of sustainability education it is important to transfer knowledge by using learner-centred methods, like projects. As the results of the project, children's knowledge about environmental hazards has increased, their attitudes to their environment have changed, and all this is realized in their actions. Project work increased children's self-esteem, confidence, independence as well as their social and cooperative skills and group cohesiveness. The project can serve as a model, but it must be further developed and made accessible to different age groups. It should also be used in university education and teacher training to value sustainability and promote nature.

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