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Interdisciplinary health education with the use of modern technologies

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Health education as an interdisciplinary concept includes issues relating to well-being, lifestyle and quality of life. These activities refer to the dimensions of health defined by WHO as including fitness, mental health and social health (Konstytucja Światowej Organizacji Zdrowia, 1946).

The aim of the article is to provide the opportunity to combine several areas of knowledge to be aware of how health is attained in a way that ensures interdisciplinary learning.

Scientific research revealed the answers of pedagogy students, who indicated educational methods, the scope and examples of institutions that can help in the implementation of health education. The study was conducted before the introduction of a separate subject in this field by the Ministry of National Education.

Education using the STEAM method is a kind of pedagogical innovation. Therefore, the article will present applications that use modern technologies which support learning through images, stimulation and virtual reality. The publication is a guide for educators, parents and students, showing the possibilities of using modern technologies during classes in many school subjects. This will be shown on the example of health education, which is interpreted in three dimensions: biological, social and

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emotional, to use many techniques supporting the process of acquiring knowledge and learning through experience during interdisciplinary education.

Keywords: health education, stages of education, modern technologies, Laboratory of the Future, experiments, STEAM method

Edukacja zdrowotna jako koncepcja interdyscyplinarna obejmuje zagadnienia związane z dobrostanem, stylem i jakością życia. Działania te są powiązane z wymiarami zdrowia, które według definicji WHO obejmują sprawność fizyczną, zdrowie psychiczne i społeczne (Konstytucja Światowej Organizacji Zdrowia, 1946). Celem artykułu jest ukazanie interdyscyplinarnego charakteru edukacji na podstawie praktyki i zdobywanego doświadczenia.

Badanie przeprowadzono przed wprowadzeniem przez Ministerstwo Edukacji Narodowej odrębnego przedmiotu w tej dziedzinie. W artykule zostały przedstawione odpowiedzi studentów pedagogiki, którzy wskazali metody edukacyjne i przykładowe instytucje mogące pomóc w realizacji edukacji zdrowotnej. Rozwiązaniem może być kształcenie metodą STEAM, co można uznać za swego rodzaju innowację pedagogiczną. Z tego względu w treści tekstu zaprezentowano aplikacje cyfrowe wykorzystujące nowoczesne technologie, które wspomagają naukę poprzez obrazy i stymulację przy użyciu wirtualnej rzeczywistości. Publikacja ma charakter poradnika dla edukatorów, rodziców oraz uczniów i wskazuje możliwości wykorzystania nowoczesnych technologii podczas zajęć z wielu przedmiotów szkolnych.

Słowa kluczowe: edukacja zdrowotna, etapy edukacji, nowoczesne technologie, Laboratorium Przyszłości, eksperymenty, metoda STEAM

1. Health education in the core curriculum

Health education is a topic of classes that covers many subjects and areas of life. Every day, children, adolescents and adults are subject to various influences of the natural, social and biological environment, which favor or limit the ability to maintain health. Therefore, health promotion is important to maintain good bio-psycho-physical condition.

The scope and duration of education aimed at health promotion should be perceived in the context of lifelong learning, because at every stage of life it is worth raising the level of awareness about the forms of caring for one's health and that of other people.

In the Jacques Delors report (1998), four pillars of education were identified, which timelessly set the framework for behavior towards oneself and the environment. The concept of lifelong learning takes into account the importance of learning to know, to know the tools that help us understand the laws and principles applicable in science, but also in health protection. The second pillar concerns the need for education in order to act, which is consistent with the need to be responsible for oneself and others. The next pillar points to the value of living together, working together to achieve social changes. The last one concerns understanding the need to learn in order to be, which will be a source of motivation for self-education. All four pillars can be implemented for health care in an interdisciplinary dimension. Activities undertaken with people aimed at developing a health-promoting culture provide a chance to survive in the coming years. Examples include group physical activity, a rationally balanced diet and care for the natural environment to ensure access to clean water, fertile soil and limit the spread of lifestyle diseases.

The introduction of continuing education can be supported by paradigms used by the teacher. In a moralistic approach, the narrative indicates the

possibility of disease occurrence, thus the changes introduced in terms of respect for one's health are caused in a totalitarian way. In turn, education using a democratic concept focuses on conditions and lifestyle that bring a person to a state of well-being. Thus, the knowledge transferred in the area of health prevention involves activating the student to listen to the individual needs of his or her body. This may be a form of stimulating the local community to show sensitivity to the health limitations and possibilities of each person (Woynarska, 2017). A teacher, tutor, mentor, family or peer group are people who provide knowledge and point out the idea of health promotion. Thanks to the widespread popularization of the content, it is possible to holistically approach the need to predict threats and consequences of policies harmful to health. Educational activities in the field of physical, mental and social promotion should be implemented formally, informally and non-formally, in order to integrate society into cooperation. According to Zofia Słońska (1994), in using the health-oriented teaching model, the most important priorities are people and places that, combined with activities, can overcome diseases and ensure a high level of well-being.

The core curriculum specified in the Regulation of the Minister of National Education (Rozporządzenie Ministra Edukacji Narodowej…, 2017), the educational outcomes that should be achieved and the achievements of teachers towards children, adolescents and adults are indicated. The issue of health education occurs in almost every subject, in specific thematic sections. At the preschool education stage and early school education, it is emphasized that the student should get to know himself and better understand the need to take responsibility for his own development. Moreover, it was indicated that such action involves developing values that characterize a lifestyle that promotes health (Białek, 2011). Moreover, the Regulation of the Ministry of National Education (Rozporządzenie

Ministra Edukacji Narodowej…, 2017) emphasizes the need to create conditions that will support the deepening of young people's interests in consolidating patterns and practical conditions for health-promoting behavior. This activity is to be implemented on a permanent basis in kindergarten, primary and secondary schools.

Comprehensive, the so-called a holistic perception of health issues, takes into account the need to verify the scale of the impact of economic, ecological and bio-psycho-social factors. This is important because each person is part of a larger natural whole and certain factors determine his reactions, which have positive or negative effects (Bishop, 2000). The cooperation of several teachers, entities and institutions is significant in education. This is confirmed by the words of Trefor Williams (1988), one of the creators of modern health education and the concept of a school promoting health in Europe: "if what a child learns in the classroom is not supported at other levels, the knowledge provided to him is unreliable and has no impact on the child."

Therefore, there is a need to unite activities within the interdisciplinarity of sciences. Health education, as defined by WHO, takes into account the development of well-being in the social and psychological dimensions. An example is the sphere of feelings and emotions, which can be interpreted in the subject of Polish, as part of learning to precisely specify one's needs when communicating with the environment. Thus, active listening focused on empathy and respect helps find a solution that respects the need for the well-being of other people. Choosing the right form of verbal communication ensures your own and the interlocutor's emotional comfort. These skills are important when solving problems and creating individual learning strategies. When considering appropriate variants, analytical skills acquired during mathematics classes will be useful. However, all subjects in the field of social sciences indicate meth-

ods of respecting rules, restraint, compensation and emotionality towards others, which can be interpreted as not robbing oneself of health and life, using, among others, stimulants.

Moreover, respect for environmental protection law is a form of verification of responsibility for the safety of the natural environment. This attitude is reinforced during nature classes, when providing knowledge about, among others, the need to segregate waste, care for the biodiversity of plants and animals, and limiting climate change. Due to the need to ensure environmental and road safety, technology lessons emphasize the importance of taking care of the aesthetics of the surroundings. Understanding the need to follow safety rules and recognizing road signs will ensure your own health and that of other road users. The provision in the Regulation of the Ministry of National Education (Rozporządzenie Ministra Edukacji Narodowej…, 2017) regarding awareness of the rational use of technology may be a form of teaching critical thinking among pupils in order to maintain mental health and not show signs of addiction to digitalization. This is a current problem among children in the era of digitalization.

Thinking and synthesizing learned information is a very important process in the later period of education. The knowledge provided during nature classes will result in a higher level of understanding of the basic laws of biology, chemistry, physics and geography. An example is biology classes, during which the student independently concludes about the importance of proper nutrition and providing food products rich in micro- and macroelements in order to maintain homeostasis between the body's organs, sense organs and the respiratory, circulatory, digestive, lymphatic, immune and endocrine systems, sexual, nervous, motor and urinary. This knowledge is supplemented with the aspect of positive effects of physical activity by teachers conducting physical education classes. When

performing physical activities outdoors, it is very important to verify the scale of skin radiation and adapt protective measures. Thus, knowledge of the division of climatic zones according to latitude parameters on the world map allows us to understand the terrain that determines decisions about human migration. Moreover, during geography classes, students can plan mountain trips, taking into account the angle of the slope, in order to properly prepare for the hike. It is important to choose appropriate footwear to protect against bone injuries. By emphasizing the interdisciplinary nature of biological, geographical, natural and chemical sciences with health education, children should be explained about the impact of toxic substances contained in the air we breathe, contaminated water we drink and sterile soil, devoid of nutritional value, in which vegetables, fruits and other ingredients grow, and the nutrients we consume. Thus, the content presented in the sciences allows us to understand the need to conduct safety education, a subject that motivates society to take action to protect the health of people injured in accidents by performing first rescue activities. In addition, the need to protect state borders and ensure appropriate safety and hygiene conditions at the workplace, educational institutions and in the household are taken into account. Safety measures should concern the use of tools and measuring devices used at school and at home, in accordance with the content of the instructions provided during exercises in the subject "technique".

According to the WHO definition, health in psychological terms, children and adolescents should be taught how to maintain mental balance. An example would be activities performed during music and art classes, because harmonious discrimination of sounds, musical expression, and singing can ensure proper articulation and calm breathing to relax the body from stress. However, movement improvisation, selection of dynamics, tempo and tone, as well as artistic expression, allow you to ex-

press mood and feelings that are difficult to describe in specific words in interpersonal and diagnostic communication.

To sum up, health education, which is included in the content of educational goals and outcomes in every subject at all levels of education is a priority issue. Health is the foundation of life in society, because well-being enables understanding the processes occurring in the world and in the body. Therefore, in order to better understand the ideas of interdisciplinarity of sciences and cooperation of specialists, the next subsection will present the STEAM method using the Future Laboratories Project, introduced to schools by the Ministry of National Education in 2021. Illustrating phenomena through experiments allows for better memory thanks to the practical form of education.

2. Experience – experience – discover. Experiments using the Future Laboratory supporting STEAM learning

Don't force children to be active, but liberate their activity.
Don't make them think, but create conditions for thinking.
Don't demand, but convince.
Let your child ask and slowly develop his mind so that he himself wants to know...
Janusz Korczak, 1993, p. 45

The above words of Janusz Korczak best reflect the need to interest children, young people, but also adults in individual action, in terms of: thinking, taking action, and then implementing the knowledge used in practice. Therefore, among the various methods used in teaching, the most frequently used are activating ones, and project work is the dominant technique. The possibility of including the person being taught in the decision-making process regarding the selection of the education

method can provide high motivation. It will not be perceived as an obligation. In design work, it is possible to combine techniques: brainstorming, metaplan, decision tree or experiment. What all activities undertaken have in common is an interesting way of implementing the content of the core curriculum, including the development of social competences. Proper communication ensures the implementation of the socio-emotional aspect of health and the discovery of the unexplored world, as part of the pedagogy of experiences. Good quality education equips a person with the ability to undertake new, unique activities derived from the previous generation. This will ensure the improvement of existing forms and the creation or discovery of possibilities that will be verified by the senses and rationality (Piaget, 1977).

Thanks to this, it is possible to provide cognitive, psychomotor, emotional and motivational education aimed at health education, which, like project work, requires the student's independent work, commitment and application of acquired knowledge in specific life situations. To learn about practical situations, it is worth implementing experimentation that allows people to see the changes taking place with their own eyes.

According to Aristotle, the experiment is the basis for understanding certain phenomena. The initial phase involves induction, formulating general conclusions from observations, and then in the next phase there is deduction or specification of one's theses based on detailed data (Puchała, 2012). Performing an analysis requires having equipment enabling observation, as well as ensuring safe conditions so that independent exploration is a permanent element of upbringing and practical education (Budniak, 2009).

Some changes in learning methodics are possible thanks to the educational project entitled "Laboratories of the Future", which is implemented

by the Ministry of Education and Science (ORE, 2022). The aim is to provide schools with the necessary equipment for teaching purposes in order to strengthen students' level of involvement, interest and independence. This is a reference to practical and technical classes conducted under the then regulation of the Ministry of National Education. Children and adolescents will be able to develop their talents thanks to experimenting and tinkering (MEN, 2021).

During practical classes, it is possible to develop professional competences or selected activities that will be helpful in performing tasks assigned by the employer in the future. Therefore, the selection of appropriate questions is crucial both during experimentation and when verifying the answers to the hypotheses. This is useful at the level of pre-orientation and professional orientation. Sam Ed Brown (2005) emphasizes that teacher questions intended to support student development should be open-ended. This will ensure that the student's attention is directed in accordance with his or her individual cognitive curiosity. It is worth emphasizing that the "Laboratories of the Future" project also allows one to learn about and develop future competences as part of STEAM education. The concept of interdisciplinary education includes teaching about social, technical, science, humanities and the arts (Bak, 2022).

In the report on the pilot study entitled "Laboratories of the Future from the School's Perspective", prepared by the edTech Poland Foundation (2023), teachers from 103 schools from all over Poland indicated that the selection of equipment purchased as part of the government project depended on the price of the program license. This was important because providing universal devices would allow them to be used as teaching aids in many subjects. The most frequently purchased products were 3D printers and glasses – goggles providing education using virtual reality programs. It is worth emphasizing that lesson design using the design think-

ing method was indicated in the recommendations in Federico Mayor's report "The Future of the World" (2001). The value of individual programs that will support the use of various learning techniques and teaching aids was emphasized (Kotarba-Kańczugowska, 2021).

Thus, modern teaching equipment and educational applications that can be used when working in the STEAM formula provide students with the interdisciplinary nature of education. The acronym STEAM indicates the value of complementary interdisciplinary education: in the field of science, technology, engineering, arts and mathematics. Thanks to theoretical considerations and formulating hypotheses, the student has a chance to find the best solution using the method of the selected project. An example of such an analysis may be a certain section of reality that is analyzed from a socio-civic, media-artistic or empirical perspective in the sciences in order to achieve operational skills and lasting knowledge. Thus, STEAM makes it possible to blur the boundaries between theory and practice. Knowledge is not only useful for getting grades in school subjects, but is applicable to every aspect of everyday life.

To summarize, STEAM allows one to acquire competences, knowledge, skills and attitudes necessary for project and problem-based work. During science, biology, chemistry, physics and geography, the importance of acquiring knowledge in the field of health education is understood thanks to observations and educational situations. This occurs when using virtual reality applications available on a smartphone, computer or tablet. Thus, thanks to digital tools, mathematical competences are developed based on games that develop counting skills and inferring information from the content of the task. In turn, the engineering aspect of education is developed during technical classes, while the artistic dimension of the STEAM concept is manifested during the creation of creative, artistic, theatrical or multimedia works. Interdisciplinary education can trigger the develop-

ment of self-awareness of feelings and emotions, as well as the identification of learning styles.

3. Research methodology

Knowing the assumptions of the STEAM method and the need to perceive health education in an interdisciplinary dimension, quantitative research was conducted among 94 students of early childhood education. At the beginning of the classes on designing health education activities, future teachers expressed their opinions using a brainstorming questionnaire (mentimeter.com) on which issues could be implemented in the field of health education.

Figure 1.
What do you associate with health education?

Source: own study.

Most students focused on topics relating to the disease-centered health education model. In this approach, people "take actions aimed at preventing the occurrence of specific diseases, taking into account groups of risk factors" (Słońska, 1994). The dominant answers include: physical activity, hygiene, health care, disease prevention, and fluoridation.

After presenting issues including health education, the possibility of using the project method and the STEAM concept, the students noticed the multi-faceted dimension of the health-promoting culture. They pointed out factors that may determine the development of habits that will be directly or indirectly related to improving physical, mental and social health. Below are the results of the responses obtained from 94 respondents.

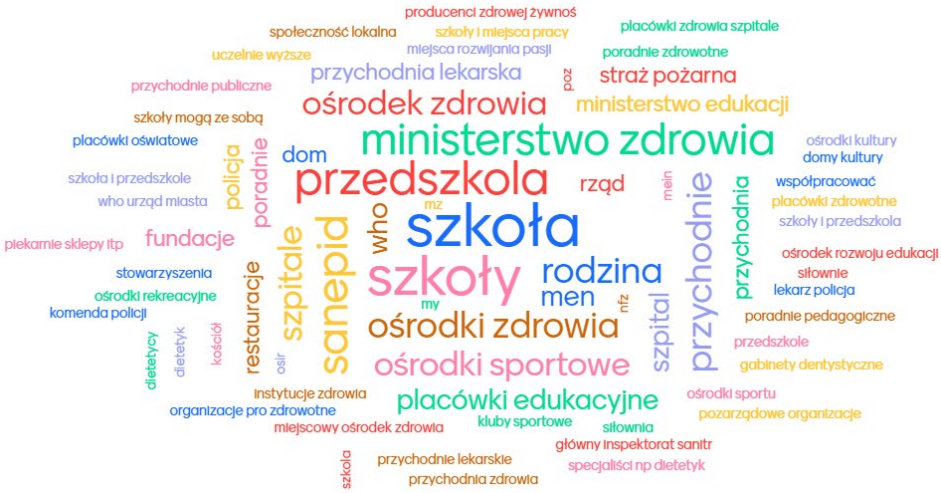
Figure 2.
Factors affecting health

Source: own study.

The survey emphasized the need to ensure regular hours of sleep. It was also indicated to create simulation situations during which pupils will have the opportunity to develop an attitude of interest in the positive aspect of health education. Students also emphasized the importance of enriching and deepening cross-curricular knowledge, because arguments such as the political situation, environmental factors, genetic and atmospheric factors, safety in the environment were considered marginal, and they also affect the development of the body.

After familiarizing themselves with the content of the core curriculum, the teachers turned their attention to the institutions that can support the implementation of health education. So far, education in the field of caring for one's own health and that of other people has not had long-term effects. Therefore, using the didactic commentary, each student was asked to determine how the institution of their choice could develop the effectiveness of health education.

Figure 3.
Which institutions can support health education?



Source: own study.

The students' conclusions were as follows: everyone should unite in activities conducted by school employees, cultural centers and clinics. Getting to know the content of information brochures prepared by doctors can help teachers with practical education. The theoretical information included could be transferred in the teaching of all school subjects, using the STEAM concept (Science, Technology, Engineering, Arts, Mathematics).

Social integration in the field of health education also requires improvement of the child's individual research activities. Therefore, in order to better illustrate to future educators the need to include the student as a researcher, and not as an observer, in the teacher's research activity, it is important to teach according to the Kolb Cycle, learning through experience. Using the students' experience from previous educational stages, it will be possible to motivate them to reflect and present hypotheses regarding the discussed experiment during which theoretical knowledge will be transferred. In the next phase, practical tasks will be performed (Kazimierska, Lachowicz and Piotrowska, 2014).

The students' creativity in selecting the most interesting techniques for activating pupils using STEAM was unlimited. Based on a survey questionnaire distributed among students (N = 94), it was indicated that the best form of education is one that combines: fun, workshops, conversations, presentations, exercises and trips. Thanks to this, it will be possible to implement the four stages of health education presented by Maciej Demel (1980), who showed the child's activity during cognitive activities. In the initial phase called heteroeducation, the child is subject to the influence of adults because he or she is unable to take care of his or her health in terms of care and attention. As adolescence progresses, an intermediate stage occurs, the subjectivity of the pupil increases, who gains awareness and a sense of responsibility for the well-being of the body.

Therefore, it is often possible to play games that differentiate between appropriate clothing for the weather and behavior focused on health-promoting ideas, as an attempt to develop decision-making and responsibility skills. The penultimate level is self-education, which involves understanding the need to co-create your health. At this stage, it is worth using modern technologies, which will be presented in the

next section of the article. The last level of a child's activity regarding his or her health is reverse heteroeducation. During this time, the student becomes an expert and influences the family and the wider community by acting as an educator. Therefore, the use of devices purchased as part of the "Laboratories of the Future" project will allow children and adults to predict the consequences of irrational living. Virtual reality (VR) is produced by technologies that provide stimulation to the senses, in which we can move to digitally created spaces in the form of illusions (Żmigrodzka, 2017). Thus, it is possible for all people to strengthen their cognitive skills, which include improving memory, understanding information, spatial and visual orientation, perceptiveness, and observing their stress reactions in difficult situations.

To sum up, students are aware of the advantages of implementing the STEAM method in education. They experienced this themselves, choosing activities that are appropriate for their own health, what they want to change and how to build an atmosphere conducive to education for prevention and health promotion.

4. Discussion – Examples of applications combining STEAM and VR in health education

The methodology of implementing health education requires student activation, which was indicated in the previous subsections. Therefore, when using design work and experiments, it is worth supporting the educational process with ICT applications (information and communication technologies). Gamification and survival are not only a form of integration, but also a way of acquiring future competences. They enable the implementation of the STEAM concept, in line with the guidelines of adventure pedagogy. It can take place in the field, but also by using modern technologies. Referring to the words of Simon Priest and

Michael Gass (2018), "adventure education" is an opportunity to make conscious changes in social relationships and to take group, individual action aimed at self-improvement. In turn, the pedagogy of experiences allows us to strengthen challenges – experiences.

According to this concept, this is not a fully planned process, because each student experiences educational activities differently (Michl, 2011). These concepts were intentionally mentioned to illustrate a pedagogical innovation that took into account the concept of the pedagogy of experiences and adventure during the implementation of health education classes. It involved the implementation of the 2022/2023 STEAM school project by the staff and students from the School Complex in Kostomłoty Drugi, entitled: "What can we gain from cycling?". Interdisciplinary experiments have shown the possibility of saving money and gaining better health. The school community was persuaded to change their habits and shape a health-promoting culture. By cycling to school or work, money can be saved that was previously spent on buying gasoline for one's car or a ticket for public transport. Thus, the amount of savings in mathematics lessons was verified, consolidating analytical thinking skills. Additionally, the engineering competences acquired during technology and physics lessons allowed students to understand the phenomenon of converting mechanical energy into electric current, because they built a prototype of a bicycle powering an electrical device (Serwis jednostek samorządu terytorialnego, 2022).

Therefore, combining these pedagogical concepts and ensuring the universality of lifelong learning, it is worth reviewing available applications that can provide inspiration for learning information necessary to maintain health.

For children and students with special educational needs, digital applications can stimulate the strengthening of all stimuli that support the simultaneous work of the right and left hemispheres of the brain, as well as help diagnose emotional states and methods of calming down. Such educational needs can be met using modern technologies, the purpose of which is to experience nature through various senses. An example would be the application entitled "Polish Birds" (Google Play, 2023a) for recognizing avifauna based on descriptions and photos, as well as recognizing their behaviors and sounds. In turn, digital tools that monitor the state of the natural environment in terms of air quality help children, adolescents and adults check the frequency of favorable conditions for the functioning of the respiratory, cardiological and dermatological systems.

If there are toxic substances in the atmosphere, we should stay at home to reduce the risk of health loss. An example application is "Canary – smog warnings" (Google Play, 2020). Additionally, the "Medicinal Herbs" (Google Play, 2022c) and "PlantNet Plant Identification" (Google Play, 2023c) applications identify plants based on photos. This tool can help young researchers on a school trip in search of nutrients that are worth supplying to the body. Due to the availability of a large number of food products and the need to incorporate the acquired knowledge into everyday life, it is worth limiting the consumerist lifestyle. To achieve this, it is worth checking products before purchasing them. Determining nutritional balance will be possible thanks to the "Healthy Shopping" (Google Play, 2023b) application, because it identifies the ingredients contained in products and their impact on health. After scanning the product barcode, the user can read the list of allergens, the amount of fat, carbohydrates, proteins and sugar. Although the observation does not involve any specific action, the conclusions drawn from observing

the biological structure of humans during classes using virtual reality (VR) and 3D models in the "Mozaik Education" (Google Play, 2022d) application help to learn about the structure of the ear and the cross-section of bacteria that is not visible. Awareness of how organs work in a 3D cross-section will allow a person to learn the exact health-promoting mechanisms.

Any activities undertaken by educators using virtual reality can constitute a case study, a simulation of a situation of providing first aid and cardiopulmonary resuscitation. This is possible thanks to a game created by the Resuscitation Council in Great Britain, called "Pacemaker Rescuer", the aim of which is to recognize the symptoms of cardiac arrest. Learning to use VR will also be useful in geography lessons when calculating slope inclination and altitude, ensuring safe climbing. Using the "Google Earth" (Google Play, 2022b) application, it will be possible to visualize rocks and vegetation in 3D before the expedition to take care of health and life. During geography lessons, the problem of climate change and the impact of global warming on the body's well-being are presented.

Therefore, it is important to emphasize the need to track the UV radiation index (using the "UVIMate-UV Index Now" application) (Google Play, 2022e) to avoid sunburn and reduce the risk of melanoma and other skin diseases. The issue of climate change and fires occurring around the world is important not only because of nature protection, but also because of the body's mitigation and adaptation to air temperature anomalies. Proposing tests to students in the field of activities performed by the fire brigade may make future decision-makers and representatives of enterprises aware of the threats posed by the ecological footprint caused by anthropocentrism. At this point, it is worth mentioning an innovative solution proposed by students at one of the secondary schools

abroad. They designed the reduction of the carbon footprint using the STEAM concept. During the ERASMUS project, they built solar panels in the shape of a flower. The installation mechanism was movable, so the photovoltaic cells changed their location according to the path of the sun above the horizon. As part of the Erasmus project, the community of the educational institution built this creative solution allowing one to learn about the potential of renewable energy and the possibility of preparing experiments relating to electricity storage. Additionally, it teaches cooperation during design work (DLaB Erasmus, 2017).

Finally, it is worth realizing that thanks to artistic education, empathy is developed, sensitivity to beauty and values, and health is a value. The possibility of maintaining well-being and good quality of life is guaranteed in the Constitution of the Republic of Poland of 1997 for the country's citizens. Therefore, using the "Ninateka" application (Ninateka, 2021), thanks to which it is possible to recreate a film adaptation of a theater performance, calming music or compose your own songs thanks to a virtual piano (Musicca, 2021), it is possible to understand abstract concepts and allegory of sound. Getting to know art by visiting a virtual museum using the "Arts & Culture" (Google Arts & Culture, 2021) and "DailyArt" (Google Play, 2022a) websites will allow one to perceive art as living images that will help in naming the emotions within various trends in art, e.g., expressionism.

5. Conclusion

In the 21st century, society is constantly developing its competences and skills in the field of technology and innovation in every sector of life. Therefore, there is a need to increase the level of knowledge in the interdisciplinary dimension of health education. Modern technologies make it possible to diagnose the emotional state, sleep quality, stress

level, awareness of the impact of polluted air on the respiratory system, toxic nutrients coming from sterile soil and poisoned fresh water, the resources of which are in limited quantity.

Only by making people aware of the scale of the issue and the possibilities of using the STEAM method, necessary to combine the skills provided as part of cross-curricular education, can a return to a better quality of life be ensured.

Jan Kochanowski's words can serve as a guide to health education: "Health, You are grand – though none understand how splendid you taste until you are waste…" (Kochanowski, 1976).

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