

Implementation of learning content based on a competency approach in outdoor physical education classes

INTA BULA-BITENIECE¹, ROBERTS RADIČUKS², RENĀRS LĪCIS³, ANTRA GULBE⁴, IRĒNA DRAVNIECE⁵, BAIBA SMILA⁶, INGA LIEPIŅA⁷, INGRĪDA SMUKĀ⁸, INESE ĻUBINSKA⁹
^{1,2,3,4,5,6,7,8,9}: Latvian Academy of Sport Education, Department of Sport and Training Theory, Riga, LATVIA.

Published online: March 31, 2023

(Accepted for publication March 15, 2023)

DOI:10.7752/jpes.2023.03098

Abstract

Traditions for outdoor activities in Latvia have been influenced by both the pre-war and Soviet education system, as well as the new educational reforms, which are based on a competency approach. This article provides an overview of the teachers' and students' views on the implementation of Competency-based learning content in outdoor physical education classes. The qualitative study used a survey method. Students: the survey about the content of outdoor physical education classes was conducted in Riga secondary school No. 45 among 7th grade students (number of students - 51), who participated in the implementation of established physical education class plans. Physical education teachers: selection criteria: 1) carries out outdoor physical education classes; 2) participated in the creation of curriculum based on the competency approach. Physical education teachers of 10 schools (5 in Riga, 5 in other cities of Latvia) were interviewed using a questionnaire with open-ended questions. The content analysis shows that most often the content of outdoor physical education classes is related to the classic physical education class tasks on the topics "Movement" and "Diverse activities to promote physical fitness", but less attention is paid to the topic "Human safety". In the opinion of both teachers and students, outdoor physical education classes are associated with the nature of adventure and an environment free from noise and crowding. Students prefer physical education classes that are dynamic and involving, with game elements, and the idea of physical education classes being conducted outdoors is attractive because it is related to the change of environment, also the nature of the adventure. The students indicate the weather conditions and the importance of thermoregulation as important factors that can affect the course of outdoor physical education classes. However, the teachers point out that more methodical materials are needed for a more successful outdoor physical education class.

Keywords: outdoor physical education, competency-based education

Introduction

Students spend most of the day at school - up to 8 hours, and most of them are indoors. However, spending time outdoors is beneficial for health and improves the quality of life. According to the guidelines of the European Framework of Quality Physical Education EFQPE (European Framework Of Quality Physical Education), outdoor activities are mentioned as a natural part of life that should be purposefully cultivated. The Latvian education reform "Competency approach in the curriculum" provides for physical activities in various environments, incl. outdoors.

Moreover, the changes in health habits and lifestyle also require students studying in schools to spend more time outdoors, in natural light and the environment - in recent years, the number of hours spent on smart devices has increased significantly: the results from the Programme for International Student Assessment PISA (PISA: Latvia in the OECD) on the most successful students indicate on the need to spend 4 to 6 hours per day in front of a smart device screen. However, students would also like to spend time in the open air and moving more - the study "Students' opinion on the implementation of physical education in physical education classes" conducted in Latvia (Jansone et al. 2016) mentions physical education classes as more attractive, and the question: "Do you want outdoor physical education classes?" is most frequently answered positively.

Summarizing the studies on physical education activities, the benefits and their contribution are:

1. learning benefits - for example, the connection with the content of other learning subjects, the formation of a deeper understanding of culture, literature and art, the promotion of extracurricular physical education activities and nature-friendly attitudes (Hurych 2012), non-linearity and variability (Colella 2021), the requirements of the health and physical activity subject (Cabinet Regulation No. 747), students' positive assessment and desire to participate in outdoor physical education classes (Jansone et al. 2016),

2. health benefits - for example, health and environmental skills (Bowker 2007, Andrievica et al. 2022), more attention to natural light (Hatori 2014), development of visual perception and promotion of vision-enhancing health habits (Tzu-Hsun Tsai 2017, Report of the study on pupil vision, University of Latvia), for

optimizing sleep/wake rhythm and active mood (Hatori 2014, Ardahan 2012), lower risk of respiratory infections (Cabinet Regulation No. 662),

3. environmental benefits - for example, natural elements of various surfaces, textures and shapes (Hurych 2012), the possibility to diversify the content of physical education classes (Mutz 2016), economy of school premises and less noise pollution (European Agency for Safety and Health at Work - Factsheet 56, Cabinet Regulation No. 66).

It is possible that the quality of people's lives will improve if the pedagogical process in schools will acquire a new environment and tools, and students will be able to fully enjoy nature and be ready for the changing challenges of the living environment.

The Latvian education regulatory framework for the period of 2018-2030 provides for a substantive indication of the student's achievements in the field of health and physical activity education, with reference to the location of outdoor physical education classes (Cabinet Regulations No. 747):

Area 1: "Learning various basic movements gives the opportunity to engage in interesting, safe and health-promoting physical activities and is the basis for strengthening physical health." Special attention should be paid to outdoor physical sports classes in the "Movement" section - skiing, skating, roller skating, cycling.

Area 2: "Regular, systematic and diverse physical activities are the basis of physical health and healthy lifestyle habits." Special attention has been paid to outdoor physical education classes in the "Adventure activities" section - tourism, orienteering and Nordic walking.

Area 3: "Physical activity is a prerequisite for good physical and mental health." The promotion and development of physical characteristics is indicated in the aspect of health prevention and tempering.

Area 4: "The impact of safety and health on oneself and others, both self-weighted decisions, being aware of possible risks and evaluating one's actions, and the readiness to react promptly in unexpected and unfamiliar situations."

Outdoor physical education classes are affected by various factors – meteorological conditions (weather and interaction with them) and thermoregulation (activity of students during outdoor physical education classes). In order to regulate the influence of meteorological factors, the school programs of several countries specify recommended weather conditions for outdoor physical education classes. School studies both in Latvia and abroad take place from autumn to spring, and indicators comparable to our climatic conditions describe both the exact corridor of the comfort zone and the interaction of temperature, humidity, air flow with environmental features (Xiong et al. 2016). Widely available comfort index calculations with heat and humidity ratios (e.g. Nautica Heat and Discomfort Index) help to organize outdoor physical education classes. However, for a safe physical education class, observing several meteorological indicators is only a part of the overall plan. Studies of the Nordic countries also emphasize the individual's mental readiness to engage in sports outdoors (Gelter, 2000), the measurement process also has specific challenges (Tandon et al. 2013) - other characteristics may also be more important for the student (Oloumi et al. 2012). The regulations of other areas may also apply to the characteristics of outdoor physical education classes, for example, regulations on protection against the risk caused by environmental noise.

There are both challenges and risks in organizing outdoor physical education classes. The impact of the environment and temperature on the human body are significant challenges for both the student's comfort zone and health. The main challenges mentioned in these research reports are suitable for the Latvian learning conditions: learning takes place from autumn to spring, the time of the event is the active part of the day, the venue is the school territory or the surrounding area. On the other hand, the physiological factors, which refer to the heterogeneity of physiological indicators of adolescents and different reactions and temperature – body temperature and reaction to cold, individual characteristics of growth and gender differences, can be significantly heterogeneous among students (Pronina 2012). Certain adolescents can be characterized by thermoregulatory characteristics of the previous stage of development (child). A child's body in metabolic processes produces more heat per kilogram of body weight than an adult's body, and a smaller heart volume in children determines a lower intensity of blood circulation in the peripheral part of the body, so - there is less ability of the blood circulation system to stabilize the temperature between the internal organs and the skin. The effectiveness of muscle activity also decreases - under the influence of cold, higher oxygen consumption is required to perform a similar amount of work (Бочаров, 2015). Adaptation to the conditions leads to an increase in muscle energy consumption by 15-20% (Egorov 2018, Andrew 1996). Movement activity in cold conditions is an effective thermoregulation mechanism for everyone – similar physical exertion in teenagers produces a similar amount of heat production (Egorov 2018). Environmental factors are also important - slippery coverings and surfaces, limited territory, factors influencing the organization of classes - requirements for clothing and equipment, time consumption for changing clothes, setting up the venue of the physical education class, coordination of the outdoor physical education class with the overall plan of classes. Individual and psychological factors (Coccolo et al. 2016, Castellani et al. 1999). Adaptation and gradual increase in tolerance The amount of studying affects the movement activity of students - less movement activity worsens the physical, somatic and vegetative health characteristics, and vice versa. The resistance of a growing organism to the thermal conditions of the external environment is also affected in this way (Egorov 2018).

If the factors mentioned above are scientifically proven data, the next factor is a subjective guess about what the teachers and students themselves think and what attitude they have about outdoor physical education classes. Teachers' opinion - students do not like going outside, and it is impossible to implement many topics in an outdoor environment. However, in order for the physical education class process to be more effective, it is essential that the opinions and attitudes of the participating students and teachers are similar (Silins&Mulford 2002).

Purpose: opinions of students and teachers about the implementation of curriculum based on the competency approach in outdoor physical education classes.

Materials and Methods

This is considered a case study. Using the survey method (questionnaire and interview), the following was clarified: the opinions of students and teachers about the content of outdoor physical education classes. Topics taught less often outdoors, as well as the main challenges of the outdoor physical education classes were clarified.

Taking into account that the opinions about the content of the outdoor physical education classes, challenges are a subjective category, therefore the "openness" of the study was observed in the course of the study - the possibility for the respondents to give detailed answers during the survey procedure, supplement them in a form of answers that is convenient for them, with the words that most accurately describe the attitude. The challenge of such a content-based approach is formed by the peculiarities of statistical analysis, which were addressed as follows: data processing was applied using keyword content analysis, grouping, in the statistical analysis, respondents' opinions were ranked according to the frequency of their mention. Such explanations given by the respondents about the characteristics of the phenomena helped to explain the main questions of the study in a substantive vision. The survey of the teachers' opinions (Stage 1) - about the topics taught in outdoor physical education classes - and expert interviews were used for the development of physical education class plans intended for approval:

1. Place, importance, relevance, challenges and solutions of the outdoor physical education classes.
2. Regulatory framework of the outdoor physical education classes in Latvia
3. Cooperation with teachers in creating the content of physical education classes.
4. Transversal skills in physical education classes - teaching, assessment, challenges and solutions.

The interview method was chosen in order to promote the adaptability of the study, or the possibility of including the clarification of hitherto unknown questions in the course of the study, with the aim of providing a substantive explanation of outdoor physical education classes and gaining new insights. The qualitative approach was chosen as the guideline of the study methodology. The interviews were conducted using an interview sheet where the answers given by the respondent were marked. 10 expert interviews were conducted. Expert selection criteria - participation in development of a competency-based curriculum in physical education, sampling method - expert recommendations. Physical education teachers of 10 schools - 5 in Riga, 5 in other cities of Latvia (Ādaži, Durbe, Grobiņa, Liepāja, Zaķumuiža). The survey about the content of outdoor physical education classes was conducted in Riga secondary school No. 45 among 7th grade students (number of students - 51), who participated in the implementation of established physical education class plans.

The following conditions were observed when developing plans for the outdoor physical education classes:

1. selection of the topics to be learned during the outdoor physical education classes - to use topics that are not taught outdoors or taught infrequently. Until now, the content of the "Human Safety" group of topics to be learned has been included in the general educational content, and teachers have taught the values of this group by integrating them into the content of other topics. Unifying main feature of the group "Human safety", as well as the less frequently taught blocks "Basic movements", "Basic movements in diverse physical activities" and "Physical activities for promoting physical fitness" is dependence on the weather conditions, which means challenges for thermoregulation.

Thus - the topics have been learned in the outdoor physical education classes during which it is possible to ensure successful thermoregulation.

2. safe, natural environment: approval of the content of the physical education classes should be carried out as close as possible to the outdoor physical education class.
3. Considering the psychological, cognitive, generational and physical characteristics of adolescence,
4. Thermoregulatory components: exercises with the following characteristics - active, involving performance type, medium or medium-high intensity, greater number of exercises and more dynamic change of exercises.
2. Changing the activities of physical education classes: tasks with movement, dynamic switching from one activity to another, including the performance of various exercises in the performance of other tasks, inclusion of exercise blocks, groups in the course of the physical education class - between activities.

Results

Assessment of students' and teachers' opinions on approval of the content of the outdoor physical education classes.

Initially (Stage 1), teachers' opinions on the content of the outdoor physical education classes were ascertained. The topics taught were ranked from least taught to the most taught.

Table 1

Teachers' choices on the content of the outdoor physical education classes

Learning topic	Group	Rank: Never/rarely	Rank: Often/Very often
Walking, running exercises	Basic movements	0	10
Throwing, catching	Basic movements	0	10
Diverse skills, sports games	Basic movements in diverse physical activities	0	10
Jumping exercises	Basic movements	1	9
Adventure activities	Basic movements in diverse physical activities	1	9
Speed	Physical activities for promoting physical fitness	1	9
Endurance	Physical activities for promoting physical fitness	1	9
Strenght	Physical activities for promoting physical fitness	2	8
Coordination	Physical activities for promoting physical fitness	3	7
Crawling, climbing	Basic movements	6	4
Driving, sliding, rolling	Basic movements	6	4
6 topics of Human safety	Human safety	from 7 to 8	3
Flexibility	Physical activities for promoting physical fitness	8	2
12 topics from Human safety	Human safety	from 8 to 10	2

The choices for each learning topic are ranked according to the frequency of their selection. The presented results are as follows: the topics most often learned in the outdoor physical education classes are - "Basic movements", "Basic movements in diverse physical activities" and "Physical activities for promoting physical fitness".

1. topic group: "Basic movements" This group is a frequently used in the course of the outdoor physical education classes, and certain topics to be learned (for example, walking, running, jumping, sports games, diverse physical activities) are mentioned most often. They are associated with the thermoregulatory properties of the activities, short time is required for instruction, easy-to-understand tasks that are performed daily and do not require explanations.

2. topic group: "Basic movements in various physical activities"
 Teachers indicate that the basic movements in diverse physical activities are the most convenient to organize. The most common topics to learn: sports games (e.g. soccer, dodgeball). Since most outdoor physical education classes take place in the stadium, a popular answer is the track and field relay, which is an activity that students take for granted. The nature of these activities also ensures both successful thermoregulation and promotes emotional involvement. The activities do not require a long briefing time, the tasks are easy to understand, especially if this has also been done in previous physical education classes.

3. topic group: "Physical activities for promoting physical fitness"
 Teachers supplement the activities of this group outdoors with the activities of the Group 1 - to promote thermoregulation. Exceptions when physical activities to promote physical fitness are performed with a narrow specific goal, with a higher concentration on some specific element - times when there are particularly favourable weather conditions. Physical activities to promote physical fitness outdoors are most often carried out in the form of various tasks, relays, and then the form of these activities, based on the emotional involvement of the student, is similar to sports games, with mutual interaction and cooperation between students. The most common topics to be learned: speed, endurance, strength, coordination, less often - flexibility. The reasons for choosing these topics are that the type of activities broadens students' vision of the health aspect. Less often, the topics learned in outdoor physical education classes are from the group of topics to be learned "Human safety".

4. topic group: "Human safety".
 Teachers give different opinions about the activities of this group – the description of the previous educational content was different from the expected one, and if "Human safety" is a separate topic block in the description of the competency approach, in the educational content regulation in force before that, it was integrated into the content of other topics - the teachers coordinated the topics of this group with the activities of other topics to be learned. The most frequently studied topics (according to the latest regulation of the educational content – the Cabinet Regulation No. 747) – equipment, electricity, traffic, cleanliness, order, fire, gas, natural disasters.

Reasons for choosing these topics: the type of these activities is closely related to the topic to be learned and can ensure both successful thermoregulation and emotional involvement.

Less frequently mentioned topics that have been taught outdoors:

1.topic group: "Basic movements" – rolling, tumbling, crawling, climbing.

Challenges for the selection of these topics, why they are not implemented, are: the preparation of the territory and equipment for the course of the class, thermoregulation, the influence of the weather - also soiling of clothing.

2.topic group: "Basic movements in various physical activities"

Basic movements in diverse physical activities - skill learning and sports games with pauses (challenging thermoregulation) and activities where clothing gets dirty due to the weather.

3.topic group: The topic of "Physical activities for promoting physical fitness" that is not implemented outdoors is flexibility, as well as other activities in which students get to know the theoretical material, learn the accuracy of movement performance (if the type of movement performance does not promote thermoregulation). The influence of the weather can be very important in the learning of the topics of this group - the weather can both significantly hinder and significantly help the progress of the physical education class. Challenges for the selection of these topics are thermoregulation, the effect of strong wind - an intense sound background.

4.topic group: "Human safety" Less frequently studied topics of the Human safety group: risks, animals, snakes, insects, chemicals and mixtures, unsafe/reckless behaviour, strangers, falls, fire, gas, disaster response, state and local government area, terrorism, riots, state safety, calling for and providing assistance. Challenges in choosing these topics: thermoregulation (because the topics to be learned require learning a large amount of content and concentration of attention, and outdoors, there are many irritants for attention, in addition, students come to the outdoor physical education classes ready to move actively). The impact of the weather is also a challenge: if a group of students enters and leaves the school building several times during the class – cleaning of the premises, impact of strong wind – an intense sound background.

In the approval of the physical education classes that took place within the framework of this study, the topics that teachers use less often were used. After the approval of the physical education classes, the students' opinion about the content of the physical education classes learned outdoors was clarified.

Table 2

Students' opinion about the content of the outdoor physical education classes

Opinion	Group
<i>Benefits of Outdoor PE classes:</i>	
More fun	Emotional factors
Interesting	Emotional factors
Easier	Emotional factors
More space	Environmental factors
Not too hot (fresh air)	Thermoregulation
<i>Most common activities in Outdoor PE classes:</i>	
Football, relay race	Subject from the school curriculum
Running	Subject from the school curriculum
Throwing	Subject from the school curriculum
<i>Disadvantages of Outdoor PE classes:</i>	
Can catch a cold	Thermoregulation
You can be late for the next class (because of change of clothes)	Organizational factors
You have to go far for the ball	Emotional factors
Dirty clothes and shoes	Weather challenges, organizational factors
<i>Best outdoor leisure activities:</i>	
Bicycle, scooter, roller skates	Emotional factors
Football	Emotional factors
Hiking	Emotional factors

Question 1 Which physical education classes are more pleasant: indoor or outdoor? Why?

Students say that outdoor physical education classes are the most attractive, and the often mentioned reasons describe physical education classes as activities with an "adventure" character - for many, emotional irritants

significantly differentiate the classes from everyday physical education classes in the sports hall. Both emotional and environmental factors are important – "There is enough space for everything", "it is not so loud". The importance of thermoregulation is also noted – "Not hot". Along with the benefits, challenges are also mentioned – thermoregulation, the influence of the weather, also soiling of clothes. After the physical education classes, students miss the start of the next class – because of the end of the class, time spent to reach the changing room and time to change clothes.

Question 2 What do you usually do during outdoor physical education class? The most common outdoor activities: topics to be learned in the school curriculum, which the students considered to be "Basic movements" - walking, running, sports games, jumping, throwing.

Question 3 What don't you like about outdoor physical education classes? Students name the main challenges as the most disturbing: thermoregulation, weather (dirty clothing, inappropriate clothing), organizational factors (being late for the next class, longer time to change clothes, walking to the starting place of the physical education class).

Question 4 of the survey is related to physical activity not only in the physical education class, but also outside of school, it is related to finding out the attitude of students about physical activity in general. What good outdoor activities (for example, games, hikes, bike rides, Nordic walking) can you remember? What were the activities performed in them?

Activities that promote emotional involvement are attractive - they have attractive content, favourable weather conditions, type of activities and other factors that have helped promoting thermoregulation. Roller skating, biking, sports games, hiking with family and time spent while traveling are often cited by students as sources of the best time spent outdoors. Weather conditions and thermoregulation are essential.

On the other hand, in order for the learning process to be more effective, teachers' opinions about students' attitude and involvement in the outdoor physical education classes are essential.

Teachers, as well as students, often consider the course of the outdoor physical education classes as one of the biggest attracting forces in shaping positive attitudes and involvement of students in the physical education class, as long as the weather conditions are favourable. The "adventure" nature of the physical education class helps for this purpose – many emotional irritants significantly differentiate the course of the class from the everyday life of the school. Students, according to teachers' opinions, prefer physical education classes that are dynamic and involving, with elements of games, this opinion was also expressed by students. Dynamic and unprecedented activities, also changing the venue of classes, moving around in the environment is considered attractive. The weather and thermoregulation are important factors in the course of the physical education class.

Teachers' opinions on the necessary knowledge and skills for organizing outdoor physical education classes to achieve a successful physical education class were also clarified. This section combines answers to two questions – about the education of sports teachers in the organization of outdoor physical education classes, and the question about the content of physical education classes, including the acquisition of cross-cutting skills. Teachers provide a wide spectrum of content indications, and the opinions mentioned by teachers can be summarized in the following groups:

Answer Group 1 – opinions on general, universal values. This group is formed by opinions about the goals of education, for example, how large is the degree of freedom of students in learning, how wide are the boundaries of the regulatory influence of teachers, how big is the role of parents, what is opinion on digital smart devices and their role in people's lives, what is our identity and whether it is represented in the curriculum of schools. This opinion group also has a vision of the importance of the teacher's personality – teachers must understand the importance of sports/physical activities in the overall educational content.

Answer Group 2 – opinions about the pedagogical process with an emphasis on the interaction between the student and the teacher in the pedagogical process and the tools in it. This group is made up of opinions on the pedagogical competency of teachers, the connection of the content values of the classes with the emotional-affective categories, the motivation of the students' involvement and the promotion of the pedagogical aspects of the learning process, the use of family and free time in the learning of the curriculum. This group of opinions emphasizes the importance of the teacher's personality - the ability to engage, the ability to teach the content of the class in physical education in both rational and emotionally affective categories.

Answer Group 3 – opinions on teachers' responsibility and uniform pedagogical procedures, various solutions to specific issues. This group consists of opinions on specific solutions aimed at the optimal use of teachers' resources - uniform tables with recommended air temperatures in which to organize outdoor physical education classes. Specific materials for learning the curriculum for students of various levels of preparation, including evaluation criteria. This group of answers (3) also includes the "institutional approach" - similar in form, but different in content, opinions about the responsibility of institutions in solving problems - schools need equipment for drying wet clothes, sheds for conducting physical education classes.

The opinions mentioned by the teachers are described below according to the frequency of their mention, ranked from the most frequently mentioned. The most frequently mentioned opinions about the knowledge and skills necessary for the teachers to organize physical education classes are: the need for as clear materials and descriptions as possible for teachers on organizing physical education classes, as well as in the

education of students and parents, in order to popularize outdoor sports, promote the purchase of appropriate clothing and prevent ambiguous interpretations of the course of physical education classes both outdoors and in general (Answer Group 3). There are often teachers' opinions about learning cross-cutting skills and the new educational content in general, about insufficient informative support for outdoor physical education classes, and teachers often mention the importance of additional materials and training seminars (Answer Group 3).

The importance of other pedagogical aspects, such as "class dramaturgy" is also mentioned - in promoting the emotional and affective involvement and motivation of students, the teacher's competency to act also in the categories of "class dramaturgy". The importance of teachers' public speaking and voice training is also mentioned (Answer Group 2). One of the more frequently mentioned opinions is also the importance of improving the personal, internal resources of teachers - this can be a resource that is essential in the skilful use of pedagogical tools in various pedagogical situations (Answer Group 2). Teachers mention the need to better understand and see the connection of educational guidelines with the state's vision of the future of Latvia: how important aspects are mentioned – whether we will make a choice about the greater importance of technology and other competencies in a future that is difficult to predict ("Latvian residents as modern and competent specialists who are successful in competition, reflecting the changing demands of the labour market"), i.e. we will give more importance to national identity, to things which characterize differences, values and conditions of existence of Latvia ("work ethics, meaning of work in life, family values, tolerance in society"). Promotion of mutual cooperation between teachers both at school and inter-school levels is mentioned as an unused resource (Answer Group 1).

Discussion

On the content of outdoor education and its implementation, various studies are available in different periods of time, both on the Australian education system (Neill 2001) and on the Nordic traditions (Remmen&Iversen 2022). Most studies are qualitative studies and take place in the primary school context. It is indicated that in outdoor activities, natural sciences are the most common subjects outdoors, but mathematics and language are also represented, however, the implementation of the content of the physical education class is less emphasized, but physical activities are mentioned as a means in the process of teaching other subjects.

Content analysis shows that teachers' perspectives are the most frequently explored, followed by the nature of outdoor education, well-being and cognitive learning. Less studies examine teaching and learning processes, digital resources and outdoor sustainability education.

One factor worth mentioning - the studies that reveal the Nordic teachers are seeing few barriers to outdoor learning. This contradicts both our study, as teachers believe that domestic factors (clothing, school infrastructure) and weather conditions influence outdoor physical education classes, which is also shown by other studies documenting teachers' experiences of barriers to outdoor learning (Dijk-Wesselius, 2019). This can be attributed to the Nordic education system, where learning is regularly organized in an outdoor environment and thus barriers become less visible (Fägerstam & Blom, 2013; Mygind et al. 2019). Despite this, Nordic teachers also experienced obstacles to outdoor learning, but they believe that outdoor physical education classes can also make a significant contribution to the aspect of national sports policy (Backman, 2011, Dahl et al. 2018). Latvian teachers also gave similar proposals, indicating national values. Findings from the Nordic studies show that barriers depend on the type of outdoor activity – whether it is adventurous or in a local environment, as well as teachers' and students' previous experiences of being and learning outdoors. The results of the Latvian study differ, indicating that it is the domestic conditions that do not allow the full implementation of outdoor physical education classes.

Conclusion

The evaluation of the opinions of students and teachers after the approval of the outdoor physical education classes can be concluded that students prefer physical education classes that are dynamic and involving, with game elements. The idea of physical education classes being conducted outdoors is attractive because it is related to the change of environment, also the nature of the adventure. The students indicate the weather conditions and the importance of thermoregulation as important factors that can affect the course of outdoor physical education classes. These opinions of the students coincide with the opinions of the teachers, which show that the learning process in outdoor physical education classes is sufficiently effective. Teachers teach the following topics in the outdoor physical education classes: "Basic movements", "Basic movements in diverse physical activities" and "Physical activities for promoting physical fitness". Less often, the topics taught in outdoor physical education classes are from the group of topics to be learned "Human safety".

Teachers' opinions about the necessary knowledge and skills for organizing outdoor physical education classes advise to place more emphasis on educational goals, the importance of digital literacy and self-directed learning, the main values of the country and their acquisition in the learning process, and the formation of the identity of the future society. Form the pedagogical process with an emphasis on the interaction between the student and the teacher in the pedagogical process and the tools in it. Improve the pedagogical competency of teachers, the connection of the content values of the classes with the emotional-affective categories. Promoting

the motivation of students' involvement and the pedagogical aspects of the learning process, the use of the family and free time in learning the curriculum. Promote teachers' responsibility and pay attention to unified pedagogical procedures, various solutions to specific issues, which would be the optimal use of teachers' resources.

The authors INTA BULA-BITENIECE, ROBERTS RADIČUKS, RENĀRS LĪCIS, ANTRA GULBE, IRĒNA DRAVNIECE, BAIBA SMILA, INGA LIEPIŅA, INGRĪDA SMUKĀ, INESE ĻUBINSKA have no conflicts of interest to declare that are relevant to the content of this article.

References

- Andrew J. (1996). Physiology of Cold Exposure. Institute of Medicine (US) Committee on Military Nutrition Research. Marriott BM, National Academies Press (US), 1996. Available online (accessed on 11/2/2023) - <https://www.ncbi.nlm.nih.gov/books/NBK232852/>
- Andrieieva O., Blystiv T., Byshevets N., Moseychuk Y., Balatska L., Liasota T., Brazhanyuk A., Bohdanyuk A. (2022). Assessment of the impact of outdoor activities at leisure facilities on the physical activity of 15-year-old schoolchildren during the COVID-19 pandemic. *Journal of Physical Education and Sport ® (JPES)*, Vol. 22 (issue 8), Art 231, 2022, p. 1844. Available online (accessed on 11/2/2023) - <https://efsupit.ro/images/stories/august2022/Art%20231.pdf>
- Ardahan F. (2012). Life satisfaction and emotional intelligence of participants/nonparticipants in outdoor sports: Turkey case. *Procedia - Social and Behavioral Sciences*. 62, 2012, p. 8. Available online (accessed on 11/2/2023) - <https://www.sciencedirect.com/science/article/pii/S1877042812034441>
- Backman E. (2011). What controls the teaching of friluftsliv? Analysing a pedagogic discourse within Swedish physical education. *Journal of Adventure Education & Outdoor Learning* 11(1):51-65, 2011. Available online (accessed on 11/2/2023) - https://www.researchgate.net/publication/254237503_What_controls_the_teaching_of_friluftsliv_Analysing_a_pedagogic_discourse_within_Swedish_physical_education
- Bocharov M. (2015). Thermoregulation of the body under cold exposure, *Journal of Biomedical Research*, 2015. Available online (accessed on 11/2/2023) - <https://cyberleninka.ru/article/n/termoregulyatsiya-organizma-pri-holodovyyh-vozdeystviyah-obzor-soobschenie-i>
- Bowker, R., Tearle P. (2007). Gardening as a learning environment: A study of children's perceptions and understanding of school gardens as part of an international project. *Learn. Environ. Res.* 2007, 10, p. 83–100. Available online (accessed on 11/2/2023) - https://www.researchgate.net/publication/226300087_Gardening_as_a_learning_environment_A_study_of_childrens_perceptions_and_understanding_of_school_gardens_as_part_of_an_international_project
- Cabinet Regulation No.66. Republic of Latvia. Available online (accessed on 11/2/2023) - <https://likumi.lv/ta/id/71039-darba-aizsardzibas-prasibas-nodarbinato-aizsardzibai-pret-darba-vides-troksna-radito-risku>
- Cabinet Regulation No. 662. Republic of Latvia. Available online (accessed on 11/2/2023) - <https://likumi.lv/ta/id/326513-epidemiologiskas-drosibas-pasakumi-covid-19-infekcijas-izplatibas-ierobezosanai>
- Cabinet Regulation No. 747. Republic of Latvia. Available online (accessed on 11/2/2023) - <https://likumi.lv/ta/id/303768-noteikumi-par-valsts-pamatizglitibas-standartu-un-pamatizglitibas-programmu-paraugiem>
- Castellani J., Young A., Kain J., Rouse A., Sawka M. (1997). Thermoregulation during cold exposure: effects of prior exercise. *Journal of Applied Physiology*, 1999/7/87
- Coccolo S., Kämpf J., Scartezzini J. Pearlmutter D. (2016). *Urban Climate*. Elsevier. Available online (accessed on 11/2/2023) - <https://www.sciencedirect.com/science/article/pii/S2212095516300372?via%3Dihub>
- Colella D., D'Arando C. (2021). Teaching styles and outdoor education to promote non-linear learning. *Journal of Physical Education and Sport ® (JPES)*, Vol 21 (Supplement issue 1), Art 54, 2021, p. 511. Available online (accessed on 11/2/2023) - <https://efsupit.ro/images/stories/februarie2021/Art%2054.pdf>
- Dahl, L., Standal, Ø. F., Moe, V. F. (2018). Norwegian teachers' safety strategies for Friluftsliv excursions: implications for inclusive education. *Journal of Adventure Education and Outdoor Learning, under utgivelse*. 2018. Available online (accessed on 11/2/2023) - <https://brage.inn.no/inn-xmlui/bitstream/handle/11250/2642660/Dahl%2BL%2BJAdventEducatOutdoorLearn%2B2018.pdf?sequence=1&isAllowed=y>
- Dijk-Wesselius J., Berg, A., Maas J., Hovinga D. (2019). Green Schoolyards as Outdoor Learning Environments: Barriers and Solutions as Experienced by Primary School Teachers. *Front School*, 2019. Available online (accessed on 11/2/2023) - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6970433/>
- Egorov S. (2019). Thermoregulatory reactions in children under the influence of environmental factors and physical activity. *Scientific library DissertCat*. Available online (accessed on 11/2/2023) - <http://www.dissertcat.com/content/termoregulyatornye-reaktsii-u-detei-pod-vozdeistviem-ekologicheskikh-faktorov-vneshnei-sredy#ixzz5eyNOrokx>

- European Framework Of Quality Physical Education [tiešsaiste]. Available online (accessed on 11/2/2023) - <https://www.eupea.com/wp-content/uploads/2018/02/European-Framework-of-Quality-PE.pdf>
- European Agency for Safety and Health at Work. Factsheet 56, LV56. Available online (accessed on 11/2/2023) - <https://osha.europa.eu/lv/publications/factsheet-56-introduction-noise-work>
- Gelster H. (2000). Friluftsliv: The Scandinavian Philosophy of Outdoor Life, Canadian Journal of Environmental Education, 5, Summer 2000
- Hatori M., Panda S. (2014). The emerging roles of melanopsin in behavioral adaptation to light. How light affects brain's performance: Photic memory for exclusive brain responses. 2014, p. 1. Available online (accessed on 11/2/2023) - https://www.researchgate.net/publication/46110037_The_emerging_roles_of_melanopsin_in_behavioral_adaptation_to_light
- Hurych E. (2012). Three Approaches To Outdoor Activities And Synergy Of Their Interconnections, Journal Of Outdoor Activities, 2/2012, p. 112. Available online (accessed on 11/2/2023) - https://www.researchgate.net/profile/Emanuel_Hurych/publication/308962333_Three_Approaches_to_Outdoor_Activities_and_Synergy_of_Their_Interconnections/links/57faa3f308ae91dea63279d/Three-Approaches-to-Outdoor-Activities-and-Synergy-of-Their-Interconnections.pdf
- Jansone R., Fernāte A., Bula-Biteniece I. (2016). Pupils' opinion on the implementation of sports education in sports lessons. Sports pedagogy yesterday, today, tomorrow (original (Latvian) - Skolēnu viedoklis par sporta izglītības īstenošanu sporta stundās. Sporta pedagogija vakar, šodien, rīt.) RaKa, 2016, p. 105
- Jing Xiong J., Zhiwei Lian, Huibo Zhang, Yoshino H. (2016). (Correlation between health discomforts and temperature steps in winter of China. Elsevier. 2016. Available online (accessed on 11/2/2023) - <https://www.sciencedirect.com/science/article/pii/S2212095516300372?via%3Dihub>
- Mygind E., Bølling M., Barfod K. (2018). Primary teachers' experiences with weekly education outside the classroom during a year. The TEACHOUT udeskole study. 2018. Available online (accessed on 11/2/2023) - https://www.researchgate.net/publication/327151932_Primary_teachers%27_experiences_with_weekly_education_outside_the_classroom_during_a_year
- Nautica Heat and Discomfort Index. Available online (accessed on 11/2/2023) - http://www.eurometeo.com/english/read/doc_heat
- Neill J. (2001). A profile of outdoor education programs and their implementation in Australia, National Assembly for Youth Development, World Congress Centre, Japan, 2001. Available online (accessed on 11/2/2023) - https://www.academia.edu/2832051/A_profile_of_outdoor_education_programs_and_their_implementation_in_Australia
- Oloumi S., Mahdavejad M., Namvarrad A. (2012). Evaluation of Outdoor Environment from Viewpoint of Children, Elsevier, 2012
- PISA: Latvia in the OECD International Student Assessment Program 2015 - first results and conclusions. Available online (accessed on 11/2/2023) - https://www.ipi.lu.lv/fileadmin/user_upload/lu_portal/projekti/ipi/Publikacijas/Gramata2015.pdf
- Pronina T. (2012). Characteristics of the circadian rhythm of skin temperature in a person during puberty. 2012. Available online (accessed on 11/2/2023) - <https://cyberleninka.ru/article/n/harakteristika-tsirkadiannogoritmata-temperatury-kozhi-u-cheloveka-v-period-polovogo-sozrevaniya>
- Remmen K.B., Iversen E. (2022). A scoping review of research on school-based outdoor education in the Nordic countries, 2022, Journal of Adventure Education & Outdoor Learning. Available online (accessed on 11/2/2023) - https://www.researchgate.net/publication/357827930_A_scoping_review_of_research_on_school-based_outdoor_education_in_the_Nordic_countries
- Report of the study on pupil vision, LŪ (University of Latvia). Available online (accessed on 11/2/2023) - <https://www.lu.lv/zinas/t/6566/>
- Silins, H., Mulford, B. (2002). Schools as learning organisations: The case for system, teacher and student learning, Journal of Educational Administration, 2002, Vol. 40 No. 5, pp. 425-446. <https://doi.org/10.1108/09578230210440285>
- Tandon P., Saelens B., Zhou C., Kerr J., Christakis D. (2013). Indoor Versus Outdoor Time in Preschoolers at Child Care. American Journal of Preventive Medicine. 2013. Available online (accessed on 11/2/2023) - [https://www.ajpmonline.org/article/S0749-3797\(12\)00727-1/fulltext](https://www.ajpmonline.org/article/S0749-3797(12)00727-1/fulltext)
- Tzu-Hsun Tsai, Yao-Lin Liu, I-Hsin Ma, I-Jong Wang. (2017). Evolution of the Prevalence of Myopia among Taiwanese Schoolchildren: A Review of Survey Data from 1983 to 2017. Available online (accessed on 11/2/2023) - https://www.researchgate.net/publication/342949638_Evolution_of_the_Prevalence_of_Myopia_among_Taiwanese_Schoolchildren_A_Review_of_Survey_Data_from_1983_to_2017