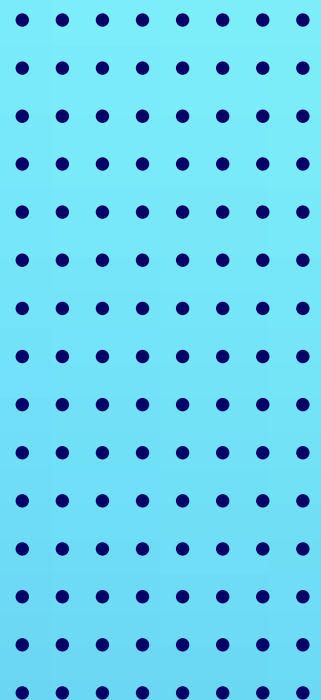




THE RECOMMENDATIONS FOR SCHOOLYARD DESIGN TO INCREASE MOVEMENT AFFORDANCES FOR CHILDREN

NORDIC BALTIC LEARNING
ENVIRONMENTS FOR
MOVEMENT AFFORDANCES
NPHZ-2017/10130



**THE RECOMMENDATIONS
FOR SCHOOLYARD DESIGN TO INCREASE
MOVEMENT AFFORDANCES FOR CHILDREN**

**Nordic Baltic Learning Environments for Movement Affordances
NPHZ-2017/10130**

Editors:

Renata Rutkauskaitė (Lithuanian Sports University, Lithuania)
Rita Gruodytė-Račienė (Lithuanian Sports University, Lithuania)
Irena Čikotienė (Lithuanian Sports University, Lithuania)
Kristina Visagurskienė (Lithuanian Sports University, Lithuania)

Contributors:

Thordis Gísladóttir (University of Iceland, Iceland)
Örn Ólafsson (University of Iceland, Iceland)
Ingunn Fjørtoft (University College of Southeast Norway, Norway)
Lise Kjønniksen (University College of Southeast Norway, Norway)
Maret Pihu (University of Tartu, Estonia)
Merike Kull (University of Tartu, Estonia)
Ott Riisenberg (Basic School of Tartu Kivilinna, Estonia)
Irinja Lounassalo (University of Jyväskylä, Finland)
Terhi Houvinen (University of Jyväskylä, Finland)
Dalia Lapėnienė (Kaunas J. and P. Vileisiai School Center, Lithuania)
Ieva Rudzinska (Latvian Academy of Sports Education, Latvia)
Una Liepiņa (Rigas Hanzas Secondary School, Latvia)

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Research shows that a positive experience of physical activity in childhood years helps to lay the foundation for a future healthy and productive life. Optimum daily physical movement, social communication, experiential learning and learning environment for physical activity contribute to the harmonious development of the younger generation. The schoolyard is a place that can serve for the implementation of all these aspects.

So, let's employ our creativity, professional advice, the unity of the school community and create more opportunities for the younger generation!

The recommendations contained in this publication are aimed at schools, teachers, school administration and policy makers in education and public health sectors.

Project coordinator Assoc. Prof. Dr. Renata Rutkauskaitė

COORDINATOR



Lithuanian Sports University

PARTNERS:



University of Tartu (Estonia)



Kaunas J. and P. Vileisiai School Center
(Lithuania)



University of Iceland (Iceland)



Lithuanian Association of Physical Education
Teachers (Lithuania)



Latvian Academy of Sports Education (Latvia)



Rigas Hanzas Secondary School (Latvia)



University College
of Southeast Norway

University College of Southeast Norway
(Norway)



Heddal Ungdomsskole (Norway)



UNIVERSITY OF JYVÄSKYLÄ
University of Jyväskylä (Finland)



Basic School of Tartu Kivilinna (Estonia)



Lithuanian Physical Activity and Health
Association (Lithuania)

Kulautuva's Community Center (Lithuania)

The Project Nordic Baltic Learning Environments for Movement Affordances (NPHZ-2017/10130)

The main activity of the project was to carry out needs analyses of the learning environment for movement affordances by involving cross sectorial cooperation for reaching reliable results as well as preparing a sufficient study module to be used at all levels of lifespan. Needs analyses is important for all actors of the project as the obtained results enable to have a new insight on the issue which is very important especially in Baltic States. The experience and knowledge of different sectors of Nordic Countries enriched the content of the study module, helped to supplement it with innovative research ideas as well as broaden the philosophy of young educators towards physical activity and healthy lifestyle. The mapping results were presented during the pilot seminar and finally the recommendations were developed based on the tested prototype. Due to COVID-19 pandemic the project activities had been rescheduled and most of the efforts had been put to analyses and then using data to write a scientific article which had been successfully finished. There was no possibility to organize face-to-face meetings, so all activities were online. Final practical activity – Intensive course was changed into an online Forum, which attracted about 500 participants. Representatives of Ministry of Education, Science and Sport participated at the Forum and expressed their thoughts on physical inactivity at schools as well as representative of Ministry of Health actively joined the discussion and supported, evaluated the importance of the project ideas as well as actively participated in a Round Table discussion.

THE RECOMMENDATIONS FOR SCHOOLYARD DESIGN TO INCREASE MOVEMENT AFFORDANCES FOR CHILDREN



The schoolyard covers the open space with sports areas that is available for the pupils to play, socialize, and be physically active during recess and lessons (Thorèn et al., 2019). Many studies stress the importance of schoolyard structure and variety in used materials to activate pupils physically and develop their motor skills (Anthamatten et al., 2011, 2014; Dudley, 2015; Hamer et al., 2017). Schoolyards that include space, topography and, vegetation have a positive effect on pupils' physical activity during recess (Bell & Dymment, 2006; Fjørtoft et al., 2009; Pagels et al., 2014), stimulate physically active play more than inbuilt environment (Bates et al., 2018) and increase the variety of games played by both genders at different ages (Dymment et al., 2009).

If a schoolyard space is attractive and inviting children and youth to move and spend time with friends communicating, playing, socializing, it is more likely that pupils shall use outdoors more often during recesses or be more willing to stay there after classes end and play together. This way the school would support and increase the levels of their pupils' physical activity during the school day and meet the recommendations for daily physical activity (at least 60 min per day). The ideal case would be that every school secures the possibility of active movement practices in schoolyards, aiming to achieve the priority of holistic educating a child as a healthy and happy human being.

Classical and traditional schoolyards in many countries usually are dominated by sports fields, some open space with grass, artificial surface or asphalt and a parking place. The schoolyard could be part of a comprehensive school environment that supports pupils' physical activity and enjoyment, development of a variety of fundamental movement skills, social communications, and creativity, relaxing and, learning. There are many factors to consider before planning the versatile schoolyard: the interests, needs and, age of pupils; the year around use with the influence of different seasons; the factors that support mental, social, emotional, and physical well-being of all pupils not only the sporty or active ones. The possibilities in schoolyards could support the life skills such as self-leading, organizing, social skills during pupil's free time play which is self-initiated and constructed. Activities in schoolyard could be part of school day activities in free time (recess), during the study process (physical education, and other subject lessons), and after school time.

After summing up the NORD-Plus Horizontal project we tried to define the recommendations for schoolyard design according to different criteria:

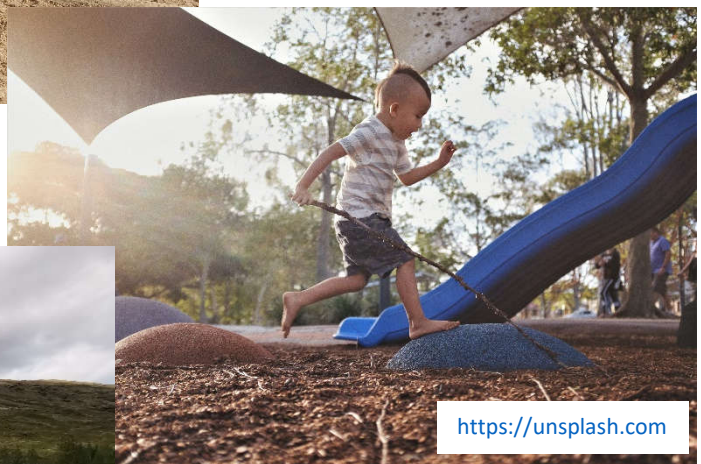
1. Schoolyard as an arena for developing pupils' motor skills.
2. Schoolyard as an area for increasing pupil's physical activity.
3. Schoolyard as a multifunctional learning environment for school subjects.
4. Schoolyard as an area which provides an attractive environment for recess and social activities.
5. Schoolyard as a neighborhood social and activity area, that is open to all community.



Schoolyard as an arena for developing motor skills should cover elements and areas that support development of main categories of fundamental movement skills:

- locomotor skills: running in different directions and surfaces (for example up and down to the hill, between the trees and bushes), walking, jumping, and climbing, tumbling and balancing.
- locomotor skills with equipment: for example, bicycling, scootering, skateboarding, cross-country skiing, ice-skating, etc.
- manipulative skills: playing areas for different games with different objects or equipment (e.g. rackets, football, basketball, frisbee, etc.).
- body control and stability skills: objects where it is possible to keep static (stumps etc.) and dynamic balance (beams etc.) and transfer weight (swinging).

Additionally, through the different physical facilities also the pupils' physical fitness components will develop speed, agility, strength, endurance, coordination, skilfulness.



Schoolyard as arena for increasing pupil's physical activity. School is the environment in which children spend most of their time and is a commonly used setting for the promotion of physical activity for youth (van Sluijs et al., 2007). School days can offer a variety of opportunities to be active, such as physical education lessons, active breaks during lessons, active commuting to school, and physical activities during recess (Haug et al., 2008; Haug et al., 2010). Previous studies have suggested that recess may contribute between 5% and 40% toward daily recommended physical activity (Ridgers et al., 2006), and between 6% and 13% toward total moderate-to-vigorous PA (Mota et al., 2005). Physical activity during recess is influenced by the size of the schoolyard (Escalante et al., 2012; Escalante et al., 2014b), age and gender (Escalante et al., 2014a), and differences in ethnicity (Blatchford et al., 2003). Additionally, outdoor lessons organized in schoolyards could significantly increase pupil's physical activity level (Mygind, 2007). According to Finish School on the Move programme (Haapala, 2017) each school should aim to:

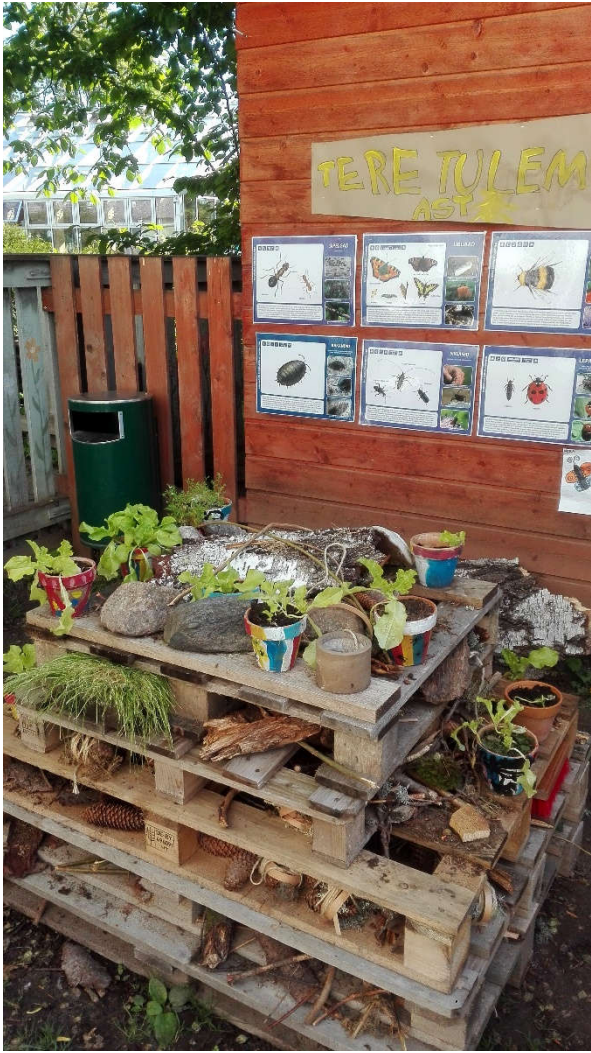
- decrease sitting time in school day,
- add more movement and decrease sitting time in school day,
- increase student participation in planning physical activities in the school day,
- improve learning through physical activities.



Schoolyard as a learning environment. Outdoor education involves teaching core curriculum in an outside context. Outdoor education is not just going outside to play. It is rigorous, well-thought-out lesson activities, typically inquiry-based, with set learning objectives that take place outdoors (MacQuarrie, 2018). Every school should have an “outdoor classroom” that can be used for education. Outdoor classrooms could be designed in different sizes and shapes, host a diversity of resources, and be used by students and teachers for a variety of purposes. Outdoor learning can occur on any site outside of the school building that is used as a place for learning. Just with a little creativity, teachers can greatly enhance student learning of both process skills and content area concepts by taking core curriculum outside (Spray et al., 2015; Tranter & Malone, 2004; van Dijk-Wesselius et al., 2020).

The school space is considered a didactic agent that helps to offer optimal physical conditions for the development of the teaching-learning process. Space is a key concept for schoolyard design and use. Few recommendations exist on schoolyard design. From our study on the 6 Nordic-Baltic schoolyards we experienced that Finland and Norway had recommendations for schoolyard space, indicating 5 m² per child and a minimum of total area of 500 m² excluding sport areas and 30 m² respectively (Boverket, 2015; Rakennustieto, 2019; Thorèn et al., 2019). If located in an adequate environment and appropriately designed, schoolyards may allow for the development of student’s abilities, fostering their autonomy as well as teacher motivation (Spray et al., 2015). Additionally, playing games with friends enables pupil to learn how to cooperate, help each other, share, live in communal life and, make the distribution of roles and division of labor (Dilbil & Basaran, 2017). Games stimulate all development areas of children and improve their senses and emotions as much as their skills. This process which starts in the family continues in school (Bainesm & Blatchford, 2010).





Schoolyard as an area which provides an attractive environment for recess and social activities.

In particular, break times in schools are game times for pupil. These breaks enable pupil eliminate mental fatigue and, exercise and have a significant function by ensuring active participation of children in the following lecture (Özdemir & Corakci, 2010). Besides, for many children and youth, school playtime is the most active part of their day. Therefore, schoolyard and school playtime are vitally important to children and youth for their fun and relaxation as well as for their good health and wellbeing. School playgrounds may play an important role in their daily life for fulfilling their interest, development and, learning needs. For that reason, the schoolyard constitutes an important venue for children’s and youth’s social, mental and cognitive development.



Schoolyard should serve as easy access and free sports area for neighbourhood citizens.

Schoolyards are also being asked to supply communal space for neighbourhoods without access to major public parks. Sometimes it is in the form of a conscious decision to meet, for example at a neighbourhood potluck or perhaps a park clean-up effort. Other times it is an informal relaxed assembly of people who come to use the park for different reasons, someone walking the dog, a father and son playing catch, or maybe even people just looking for a quiet place to rest.





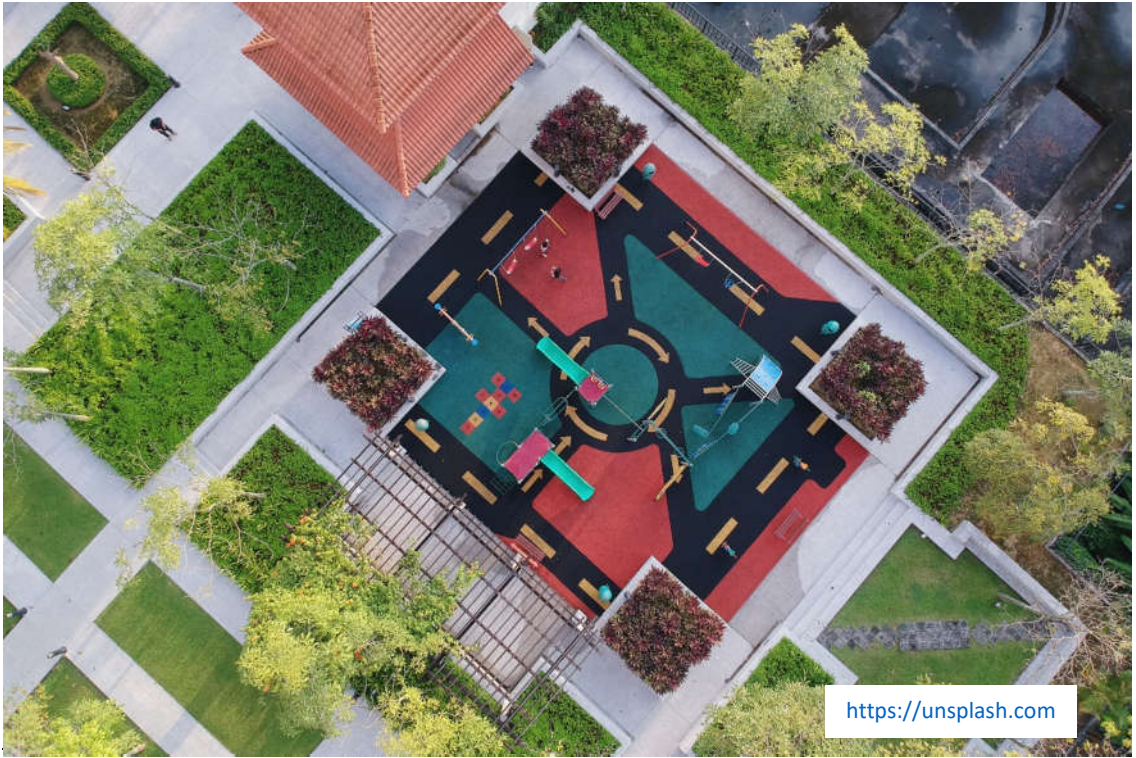
Above mentioned factors can be influenced when schoolyard design include:

1. Natural elements, varied topography and surfaces combined with the appropriate affordances. Scientific evidence shows that pupils prefer green spaces in their schoolyards. Gravel, artificial grounds, and asphalt are providing certain affordances for movement, but without a natural environment, children do not get a wider spectrum of motor skills development. Green schoolyards including natural greenery and/or gardens stimulates physically active play more than inbuilt environment (Bates et al., 2018).
2. Different/versatile landscape make the schoolyard more attractive, cozy, restful and, peaceful (a schoolyard should include beautiful places to relax and “*walk and talk*”). Additionally, benches in strategic places like up in the hill, vegetation etc., including elements of adventure (forest, park, climbing walls, jungle gyms etc.) make schoolyard more adventurous and attractive. Schoolyard landscapes should be facilitated for activities throughout all seasons.
3. Multifunctional activity areas vs. ball game area or sport arenas.
4. Universal design solutions to be applied when school is both for young pupils as well as gymnasium students to ensure wider spectrum movement affordances outdoors, including pupils with special needs.
5. Storage place for equipment such as bikes, scooters, roller skates, skateboards (or sleds, skates and, skis in wintertime) for those who come to school utilizing active transportation to ensure mobility physical activity. Also, a safe and suitable space is designed for moving using this equipment. In winter an ice-skating area for skating or playing ice hockey, or skiing routes in the school’s stadium.
6. A special area for younger age pupils to use various utensils from everyday living to develop functional movements, e.g., kids’ kitchen utensils, pots, gardening supplies etc.
7. The school yard should also be adapted for children with various disabilities. Additionally, the area may be equipped with a corner of the senses, e.g., touching the wall of various surfaces with (closed or covered eyes), special stands with signs of the language for the deaf people, an island where various tasks should be performed with just one hand or moving on one leg, etc.
8. For older age pupil (secondary school or high school) – an attractive/inviting area for social activities during recess and leisure time: including table or social games, hammocks between the trees; stairs, terraces, or amphitheater; deckchairs or benches in sunshade.
9. Kinesthetic “corner” – a place for movement when performing actions on various colored walls or various lines, tasks, etc. drawn on the floor. Additionally, in the schoolyard should

be an area where there is a storage box with various outdoor sporting/playing equipment such as rackets, skittles, balls, strings, jumping ropes, hula-hoops, laminated movement/exercise cards, etc.

10. An obstacle course with inexpensive tools to facilitate climbing, clambering, or balancing (even in the air), e.g., such as in slacklining or climbing ropes.
11. Outdoor classroom for integrated teaching purposes.





For reaching all the goals it is necessary also:

- Hole school community (pupil, teachers, administration, parents) and social partners should be involved in promoting physical activity in schoolyards as well as the design and reconstruction.
- Moreover, cross-sectoral cooperation at all levels (school, university, municipality, ministries) is also especially important for creating attractive schoolyards, activities for pupil and, promoting activity for all the citizens.
- To overcome the barrier of inclement weather, the roofed space for movement and play may attract kids to go out during recess or after school hours. Encourage better and appropriate clothing! Besides, teachers and parents would be less resistant to let/encourage children to active play outdoors on rainy days.
- Involving pupils in designing the schoolyard (involvement, hearing their preferences).
- Increasing outdoor recesses and classes (compulsory at all school levels), even it could be compulsory outdoor recess and longer recess for the young age pupil.
- Change adults' attitude towards lessons and breaks outdoors in school yards, e.g., through in-service training.
- Prohibiting phone use at school, also during recesses (phone can be used only for teaching purposes).
- Breaking sitting time during lessons with some physically active brain brakes.

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www.lsu.lt; e-mail: lsu@lsu.lt

