



Education on the Move

Ideas and Inspiration
for School-Based Physical Activity
from Norway



Municipality of the District of Lunenburg
Nova Scotia



February 2018



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With the Cooperation of the Oslo Education Authority
(Oslo Utdanningsetaten)



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Executive Summary

This research report documents the ways in which physical activity has been successfully incorporated into the school day, including curriculum delivery, at five public elementary schools and one public middle school located in Oslo and Akershus, Norway. With a population and climate similar to Nova Scotia, this report offers insights and guidance for how Nova Scotia might improve children's daily physical activity levels in partnership with school administrations across the Province. It speaks to how Nova Scotia could achieve the "Time to Learn Strategy" (2015) requirement of 50 minutes per week of Physically Active Time (PAT) outside of Physical Education classes in elementary schools.

The Norwegian model includes the development of comprehensive curricula for both Physical Education and Physical Activity classes, along with the incorporation of physically active teaching and learning methods into the delivery of existing curriculum. After an overview of the broader Norwegian educational context, this report homes in on the simple, resource-light, and effective physically active teaching and learning method called Active Smarter Kids (ASK) developed by researchers at the Western Norway University of Applied Sciences.

ASK methods have high potential for successful implementation within the Nova Scotia educational context. As the implementation of PAT has been for the most part self-initiated by teachers in Nova Scotia, the ASK method offers a straightforward model for both professional development support and effective integration of PAT. As a standalone approach, the ASK method is not reliant on broader cultural practices in Norway. ASK is simply an adaptation in curriculum delivery that uses physically active games and activities to reinforce classroom-based academic lessons in both outdoor and indoor settings. Preliminary research indicates that ASK methods contribute to inclusivity, student engagement and classroom behaviour management (Resaland, 2017, Resaland, 2018). Many of the teachers and administrators engaged with ASK cannot imagine teaching without it.

In Canada, school aged-children are not physically active enough and their activity levels decline as they age (PARTICIPACTION, 2016, Campagna et al., 2005). As children are spending an ever-increasing amount of time in institutions, be they daycares, school, or after school programs, it is prudent to consider the potential benefits of incorporating physical activity into the school day for classroom management and academic performance, as well as children's physical health. The Nova Scotian PAT guidelines recognize the value of physical activity in the school setting, and ASK methods provide a straightforward, curriculum-linked approach to achieving them.

Nova Scotia and Norway have similar curriculum guidelines for weekly physical activity for children to support healthy development (150 minutes in Nova Scotia and 135 minutes in Norway). However, the reality is something different. Where Nova Scotian teachers have had difficulties implementing the additional 50 minutes of Physically Active Time that was introduced in 2015 with their students, the

flexibility around Norway's Physical Activity class has ensured its success for children in grades five through seven.

Children in Norway are provided adequate opportunities to meet most of their nation's daily physical activity guidelines within their school day. This success is the product of several factors including:

- the fact that it is generally accepted in Norway that the school environment is an appropriate, and important venue in which to promote physical activity,
- a nationally set curriculum that dictates significant hours dedicated to both Physical Education and Physical Activity classes,
- the influence of the Norwegian cultural tradition of *friluftsliv* – translated directly as “outdoor life,”
- decisions by individual schools and teachers to include physically active lessons in their interpretations of the national curriculum, and
- the manner in which the outdoor environment at schools is both designed to encourage physically active play and used by educators as an arena for physically active play and learning.

Of the many ways in which physical activity is incorporated into Norwegian public school days witnessed during this study, the ASK method holds the most promise for successful implementation in Nova Scotian schools.

ASK methods require little professional development and planning on the part of teachers, use only simple materials and equipment, and can be conducted in any outdoor or indoor environment. Preparing for ASK lessons is not perceived as extra work by the teachers who participated in this research because ASK classes always cover material that has already been taught in the classroom.

According to Maren Berg Johansen: “It’s the same for me. FLA [ASK] lessons are never something new. It’s just doing what they’ve already learned that day or earlier in the week”¹. It also provides an approach that helps engage all students in learning. Caroline Solberg explained how using ASK in Math and Language classes have really benefited the students who do not learn well in a traditional classroom setting: “Especially some of them find it difficult to sit at their desk and do the work. So, when they can use their body, it seems like it’s more of a flow. And I feel like they get so excited and everybody wants to join, even the pupils who are finding learning the subject difficult.”

Early research on ASK methods demonstrates the positive effects on classroom management that physically active teaching methods can have. Three years after the implementation of the physically active teaching and learning methods developed through the Active Smarter Kids (ASK) project, teachers at

¹ ASK lessons are called FLA lessons at Tiurleiken School in Oslo. FLA stands for *Fysiske Læringsaktiviteter* in Norwegian, or Physical Learning Activities.

Tiurleiken School in Oslo have reported significant improvements in their students' overall mood, intraclass collaboration and communication levels, and students' willingness to engage in lessons and with each other. They have seen such dramatic improvements in these crucial elements of classroom management, that they cannot imagine teaching without using ASK methods. As Karoline Sem Nilsen reported: "We can't stop teaching FLA [ASK]!" And they're accomplishing this while meeting national curriculum guidelines.

Some additional rationale for the transferability of ASK methods to the Nova Scotia setting include: ASK methods do not require access to forest or natural areas; ASK methods are most often executed in the schoolyard setting, but can also be done indoors when necessary; and finally, ASK methods will build upon, bolster and expand the work that some Nova Scotian teachers are already doing to incorporate physical activity into their teaching practices.

The Norwegian model and ASK methods provide valuable insights and a compelling model for physical activity promotion within Nova Scotian schools. This report outlines why it is worth considering looking beyond our borders for teaching methods that educators find simple and vital for effective and engaged curriculum delivery, student learning, and overall student wellbeing.

Introduction

This research documents the ways in which physical activity has been successfully incorporated into the school day at five public elementary schools and one public middle school located in Oslo and Akershus, Norway. Key to this success is the development of comprehensive curricula for both Physical Education and Physical Activity classes, and the incorporation of physically active teaching methods into the delivery of academic subjects within the existing curriculum framework. By presenting evidence and best practices from the Norwegian context, it is hoped that this report will help guide regional and provincial efforts to improve children's daily physical activity levels in partnership with school administrations across Nova Scotia.

Physical activity promotion professionals in Nova Scotia recognize that we need to reframe our conversations with educational professionals to successfully promote the importance of daily physical activity for children in our schools. Sara Kirk (2017), Professor of Health Promotion at Dalhousie's Department of Health and Human Performance, has stated that there is plenty of evidence that supporting the health of children in schools through increased levels of physical activity and healthy eating enhances their academic achievement (Donnelly et al., 2016, Mullender-Wijnsma et al., 2015 and Mullender-Wijnsma et al., 2016). According to Kirk, school health strategies can help those students at risk for poor health and learning outcomes advance their studies (2017). Kirk emphasizes the need for health and physical activity promoters to focus on positive educational outcomes when discussing the benefits of physical activity for children in schools.

In Norway, a northern country with a climate and population density similar to Nova Scotia, many schools focus on physical activity within the school day (Resaland, 2017). It is recognized that because schools exist in all municipalities in Norway and that most children aged 6 - 16 spend the majority of their day in school, it is an effective arena for promoting children's physical activity amongst the entire population – regardless of socio-economic background and parental attitudes towards physical activity (Ibid.). There is also recognition that schools offer safe learning environments which are the ideal surroundings for increasing children's physical activity levels in a safe and effective manner (Ibid.).

So, what makes the Norwegian education system so interesting? International efforts to assess education systems provide a glimpse into what is happening in this Nordic country. Every three years, the Organization for Economic Cooperation and Development (OECD) conducts a comprehensive assessment of the educational systems of its membership nations. Known as the Programme for International Student Assessment (PISA), the programme measures the performance of 15 year olds in science, mathematics, reading, collaborative problem solving and financial literacy. Since PISA's inception, Norway has consistently achieved high scores across all categories. Canada achieves similar scores across all categories. However, Nova Scotians are seemingly less inclined than their Norwegian counterparts to

perceive schools as the appropriate venue for ensuring adequate physical activity for children on a daily basis.

PISA also documents the learning environments of schools in each nation, and the 2015 results show that the Norwegian school system has been able to create a supportive learning environment in which students flourish. The Norwegian index of students' sense of belonging at school was one of the highest among the countries who participated in the 2015 PISA study (OECD, 2015). The ratio of teaching staff to students in Norway is 1:10, comparatively low in relation to Canada's average ratio of 1:14 (OECD, 2015). According to the study, 98.4% of Norwegian children attend public school. Of these only a tiny fraction had repeated a grade during primary, lower secondary or upper secondary school. In fact, the percentage of Norwegian children who must repeat a grade is one of the lowest amongst PISA participating countries. Although the average time per week spent learning academic lessons is one of the shortest in the survey, Norwegian students scored above average in science literacy, mathematics and reading (OECD, 2015).

What are Norwegian students getting up to when they're not involved in their academic lessons? Do they spend more time than their Nova Scotian counterparts engaged in physically active lessons and programmes throughout the course of the school day? In Norway, are efforts made to promote physical activity in school that extend beyond the parameters of Physical Education class, as has been the primary focus in Nova Scotian schools?

In September 2017 the author, Britt Vegsund, Municipal Physical Activity Leader (MPAL) for the Municipality of the District of Lunenburg (MODL), visited six schools in Norway to find some answers to these questions. This report is the result of qualitative investigation of physical activity promotion and practices in Norwegian public schools as implemented in these six schools — comprised of five elementary schools and one middle school. Guiding research questions included:

- What emphasis do Norwegian schools place on daily physical activity?
- What policy, social and physical supports exist to aid physical activity in Norwegian schools?
- How are different schools promoting daily physical activity for their students?
- Are there physical activity practices and policies that are transferable to the Nova Scotian context?

The results of this research reveal that Norwegian schools have successfully incorporated significant amounts of physical activity into the school day for elementary students. Like the Canadian Society for Exercise Physiology's (CSEP) guidelines for physical activity for Canadian children, Norwegian physical activity guidelines provided by the Norwegian Directorate for Health state that children require 60 minutes of daily moderate to vigorous physical activity.

It appears that children in Norway are provided adequate opportunities to meet most of their nation's daily physical activity guidelines within their school day. This success is the product of several factors including:

- a nationally set curriculum that dictates significant hours dedicated to both physical education and physical activity,
- the influence of the Norwegian cultural tradition of *friluftsliv* – translated directly as “outdoor life,”
- decisions by individual schools and teachers to include physically active lessons in their interpretations of the national curriculum, and
- the manner in which the outdoor environment is both designed to encourage physically active play and used by educators as an arena for physically active play and learning.

These factors will be examined in detail in subsequent sections of this report.

The schools visited during this research have all succeeded in creating a learning environment where children are encouraged to be active throughout the school day, where attempts are made to address and value different learning styles, and where outdoor spaces are seen as an extension of the classroom and a valuable arena for education.

Physical Activity Promotion in Norwegian Public Schools

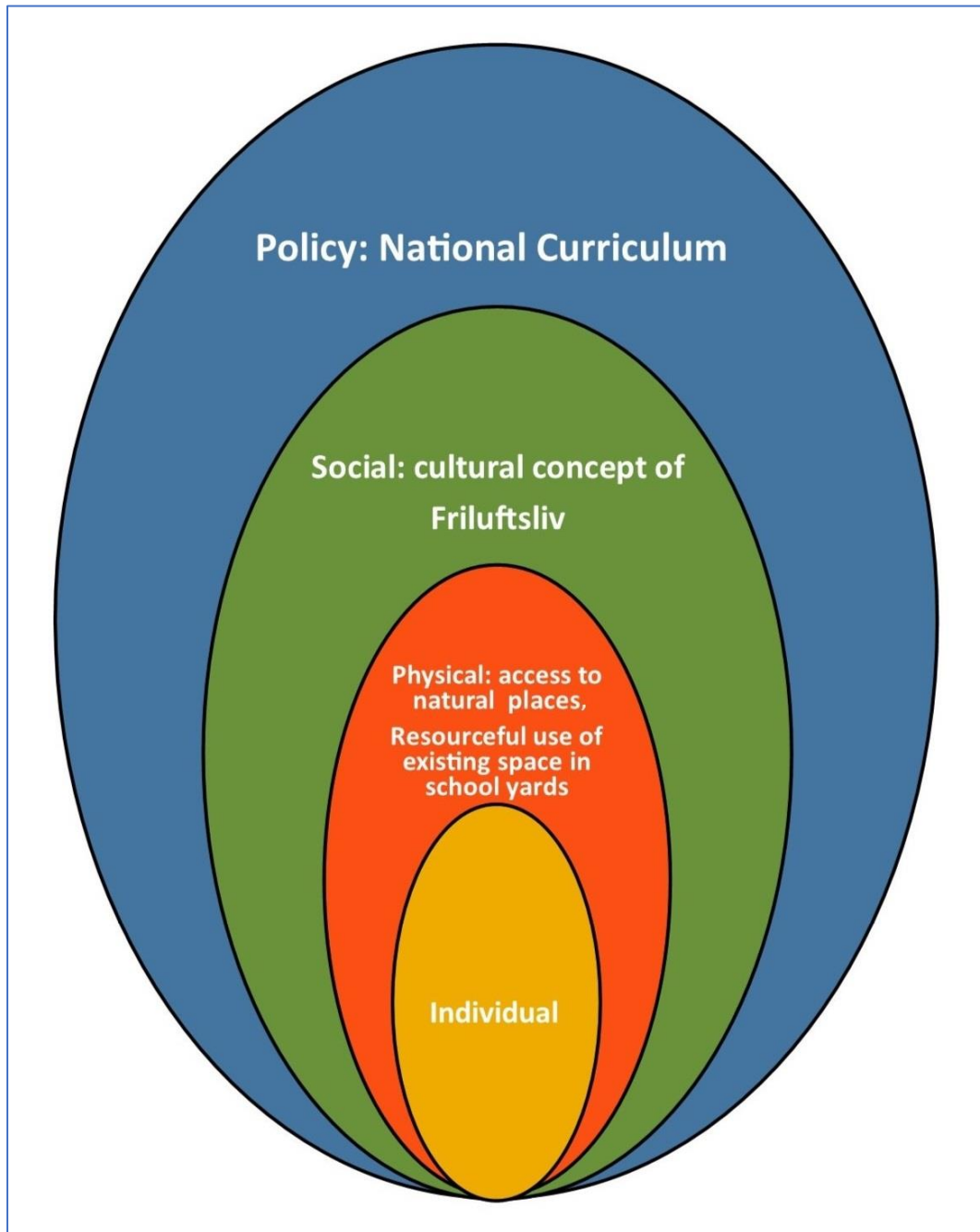


Fig. 1

This report uses the socio-ecological model of physical activity as a guide (Fig. 1). Starting with the outer ring of the model, it begins with an examination of how Norway's national curriculum supports physical activity within the school day. Moving inwards one ring on the model, it explores the way in which the Norwegian cultural tradition of *friluftsliv* comes into play in school-based efforts to promote physical activity.

Following these macro-level discussions, the report homes in on examples of physical activity promotion from the six schools visited in Oslo and Akershus during the data collection period in September 2017. While some of these examples have a distinctly Norwegian flavour founded in the practice of *friluftsliv* and may therefore be difficult to transpose to a different cultural context, others highlight more simple ways to encourage physical activity and play within the context of classroom lessons and outdoor play environments.

Finally, the report ends with a more intensive investigation of one particular school — Tiurleiken School in Romsås, Oslo — and a physically active teaching method called Active Smarter Kids (ASK) which was developed in western Norway in 2014. ASK is a resource-light, yet highly effective teaching technique that incorporates simple physically active games and activities into class curriculum. It has been implemented in schools across Norway to great success. Many of the teachers and administrators engaged with ASK cannot imagine teaching without it.

Of the many ways in which physical activity is incorporated into Norwegian public school days witnessed during this study, ASK methods hold the most promise for successful implementation in Nova Scotian schools. ASK requires little professional development and planning on the part of teachers, uses only simple materials and equipment, can be conducted in any outdoor or indoor environment, and is not reliant on cultural practices particular to Norway.

The Norwegian Context

A Norwegian, pan-ministerial policy document titled “The Action Plan on Physical Activity 2005–2009: Working together for Physical Activity” highlights the fact that despite international opinion that Norwegians live physically active lives, there is “well founded evidence that Norway is also succumbing to the health-impairing lifestyle of post-modern society, a lifestyle that among other things involves a decrease in the level of physical activity” (Action Plan on Physical Activity, 2005: 2). The document recognizes that Norwegian children are spending an ever-increasing amount of time in institutions — be they daycares, school, or after school programmes, and that children must have the opportunity to be physically active during their time there. It is recognized that the responsibility to ensure that children are active enough lies with the public sector: “This entails a public responsibility for the organization of the school day, the kindergarten day [daycare], suitable outdoor areas, a competent staff and the involvement of children, parents and the local environment as such” (Ibid.: 17).

In recent years large-scale programmes have been implemented to promote physical activity in Norwegian schools. A qualitative study by the University of Bergen assesses the implementation of one such project, “Physical Activity and Healthy School Meals”, at eight school sites across the country and identifies “key implementation successes and barriers as perceived by principals, project leaders, teachers and students” (Larsen et al., 2012:53). The research showed that all the schools studied managed to provide an extra 20 - 45 minutes of physical activity for each child because of the implementation of the national programme, but none was able to achieve the national goal of an increase of 60 minutes of daily physical activity within the school day. While the creation of policy plans and working groups within the schools was effective and helped move the programme forward at each site, the factors that hindered the implementation process were related to “a lack of competence and confidence among teachers and a lack of allocated time from school leaders” (Ibid.).

A study of public perception of why Norwegian children do not spend as much time playing in nature as previous generations sheds some light about physical activity amongst Norwegian children. The main barriers keeping children from playing in nature or other nearby green spaces included spending more time in organized sports and leisure activities, spending more time doing homework, and parental concerns about traffic affecting the safety of their children when they go outside to play (Skar et al., 2016). More than one quarter of the parents in this study reported that educational institutions need to provide adequate opportunities for physical activity for their children. This is despite widespread recognition that parental attitudes towards physical activity significantly affect a child’s perceptions of and levels of participation in physical activity. This attitude reflects an exciting trend in Norwegian physical activity research, promotion, and policy development that recognizes schools as an important and appropriate arena for ensuring that children are adequately active within their days (see Resaland et al., 2015, Resaland et al., 2016, and Report No. 18 (2015-2016) Nature as a Source of Health and Vitality). This will be explored in detail later in the report.

The Nova Scotian Context

Canadian children are not physically active enough. The 2016 PARTICIPATION Report Card shows that only 9% of Canadian children aged 5-17 get the 60 minutes of daily heart-pumping activity that they need (PARTICIPATION, 2016: 2). The 2005 PACY Report “Physical Activity Levels and Dietary Intake of Children and Youth in the Province of Nova Scotia” demonstrates that Nova Scotia children’s levels of physical activity drop off as they age. While over 96% of grade 3 children of both sexes were able to attain the guidelines of 60 minutes or more of moderate to vigorous daily physical activity, only 45.3% of grade 7 boys and 23.8% of grade 7 girls were able to do so. Grade 11 students fared much worse with only 9.7% of boys and less than 1% of girls being active enough to achieve the moderate physical activity recommendation (Campagna et al., 2005: 4).

In Nova Scotia, guidelines for physical activity in schools focus primarily on parameters for Physical Education class. The Department of Education's "Time to Learn Strategy" provides recommendations on the minimum instructional time for all subject areas, including Physical Education (PE). The strategy is based on Nova Scotia's "Action Plan for Education 2015: The 3Rs: Renew, Refocus, Refresh." It states that students in grades P - 2 and 4 - 6 receive 100 minutes of Physical Education per week, broken down into 20 minute per day segments. In the strategy, parameters for grade 3 students are set at 30 minutes per day and 150 minutes per week. The document recognizes that school boards across the province are still working towards the Physical Education goals listed in the strategy. This is because efforts to promote physical activity in Nova Scotian schools through Physical Education class are challenged by scheduling conflicts and space constraints within schools. For example, at some schools within the South Shore Regional School Board, children in elementary school only attend two 30-minute PE classes per week.

The "Time to Learn Strategy" also includes guidelines for Physically Active Time (PAT), which it distinguishes as opportunities for physical activity that are distinct from Physical Education classes. The strategy states that students in grades P-6 should receive an additional 10 minutes per day, or 50 minutes per week, of Physically Active Time. It also states that resources will be developed and provided to assist teachers in offering daily Physically Active Time. However, two years after the creation of this policy, teachers and administrators on the South Shore of Nova Scotia who participated in this study are not aware of any provincially created resources to help teachers facilitate Physically Active Time for their students.

Schools across the province take different approaches to incorporate the required additional 10 minutes per day of Physically Active Time. At one school on the South Shore, the additional minutes are accounted for in the school's after school programme that is run by a qualified Physical Education teacher and includes physically active games and activities. However, the administrator at that school recognizes that participation by all students in the programme is not mandatory, and that the students who choose to participate are those that are already inclined to be physically active. So, while the school can account for the mandated minutes of Physically Active Time, not all students at the school benefit from an increase in physical activity on a daily or weekly basis.

At another school on Nova Scotia's South Shore, teachers have taken it upon themselves to incorporate the additional 10 minutes of Physically Active Time into their classroom days. Examples of how they do this include adding short movement and stretching breaks to transition periods, incorporating jumping jacks and movements to word spelling or simple math exercises, and using Smart Board supported dance activities, such as "GoNoodle." However, these teachers recognize that these activities do not offer their children 10 minutes of consecutive physical activity each day, as they are offered in small bursts when the children are restless or during transitions.

Other efforts to promote physical activity outside of PE classes in Nova Scotian schools are underway and seeing success. One such effort was a recent collaboration between the Department of Communities,

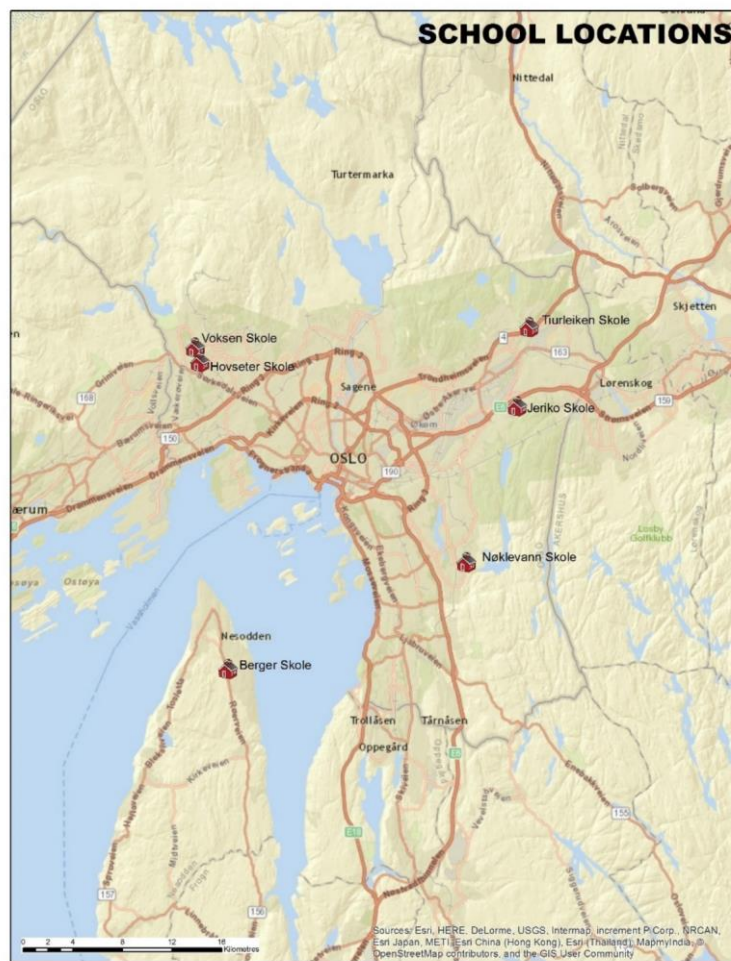
Culture and Heritage (CCH) and the Tri-County School Board in the province's South West region. With funding from CCH and Health Promoting Schools Committee, teaching staff from the district attended a "Reconnecting with Nature" workshop. The one-day workshop is offered through Hike NS and provides professional development skills in facilitating outdoor experiences with children and youth. Through experiential learning activities participants come to understand the value and key concepts in reconnecting children and youth with nature and identify valuable ideas, activities and resources for this work (Hike NS, 2017). This programme took place in the late spring of 2017, and 20 teachers attended from both the elementary and secondary level. Participant evaluations of the day demonstrated that they were interested in incorporating outdoor activity and physical activity into their curriculum-based lesson plans.

Methodology and Limitations

This research is the result of a unique collaboration between Nova Scotia's Department of Communities, Culture and Heritage (CCH), the Municipality of the District of Lunenburg (MODL), and the Municipality of Oslo's Education Authority (*Oslo Kommune Utdanningsetaten*).

The research was undertaken in September 2017. Prior to her departure, the author worked with a special consultant from Oslo's Education Authority to arrange visits to five elementary schools and one middle school in the municipalities of Oslo and Akershus, Norway. Visit sites were selected based on the school leadership's willingness to participate in the study and their efforts to promote physical activity during school days. The Oslo schools are located in diverse locations across the city, ensuring that a range of socio-economic backgrounds and neighbourhoods are represented. The school located on the Nesodden Peninsula in the neighbouring municipality of Akershus was contacted independently by the author and was chosen at random from a map.

Interestingly, all the schools that participated in the study are located on the outer limits of the city of Oslo. The schools all lie within close proximity to nature reserves, and all reported using those spaces to their advantage when planning and implementing physical activity programmes and lessons for their students. Schools located within the city centre did not express interest in participating in the study. According to a special consultant for the Oslo Education Authority, this is because their efforts to promote physical activity within the school day are not as developed as the schools that chose to participate in this work which have easier access to outdoor spaces amenable to physical activity.



While the results of this research do not represent the full extent of efforts to promote physical activity within schools administered by the Oslo Education Authority, they do present a wide breadth of experience from a range of schools located in socio-economically diverse neighbourhoods across the city. They demonstrate a diverse range of efforts to incorporate physical activity into school days.

Data was collected using qualitative research techniques influenced by Grounded Theory approaches. During school visits, the author conducted qualitative interviews, or focus groups, depending on how many school staff participated in the visit. The questions that guided the interviews and focus groups were developed around the socio-ecological model of physical activity. Research questions were adjusted as themes emerged throughout the data-collection period. In several school settings, where the author was invited to participate in activities and lessons, she also employed the anthropological methodology of participant observation, actively participating in activities with teachers and students, while taking notes

on her observations. Follow-up questions were communicated with key informants (school administrators and teachers) via email following the data-collection period.

All the data collected during the school visits was transcribed verbatim and analyzed using Grounded Theory techniques. During the analysis process, saturation of thematic categories was reached quickly. Saturation, namely data satisfaction, is when the researcher reaches a point where no new information is obtained from further data (Wikipedia, 2017). This phenomenon is not entirely surprising given the fact that all schools participating in this study adhere to the same nationally set education curriculum, which includes strict guidelines for both Physical Education and Physical Activity classes, and that the majority of them are administered by the same education authority in Oslo. While there were plenty of diverse examples from the different visit locations of how physical activity is incorporated into school days (as later sections of this report will show), the same general practices were present at all the schools visited during the data collection period.

Insights about the Nova Scotian context were gleaned through telephone interviews with school administrators and teachers at schools located on the South Shore of Nova Scotia.

Policy and Curriculum Support for Physical Activity

Norway's educational curriculum supports physical activity within the school day. In Norway, educational curriculum is set at a national level and is administered by a national directorate called The Norwegian Directorate for Education and Training (*Utdanningsdirektoratet*). Unlike Canada, with separate provincial departments of education, schools in each Norwegian region adhere to the same curriculum. In-school, curriculum-based physical activity is promoted for elementary students through two mandatory classes: Physical Education class (*kroppsøving*), which is mandatory across all elementary grades, and Physical Activity class (*Fysisk Aktivitet*), which is mandatory for students in the fifth through seventh grades.

Under the curriculum, elementary students are required to complete 90 minutes per week of Physical Education class (*kroppsøving*). Physical Education classes are taught by qualified teachers and the learning outcomes comprise proficiency in different sports including, but not limited to, basketball, soccer, track and field and orienteering. According to the Norwegian Education Directorate:

Learning in the subject area of Physical Education shall attend to traditional and alternative physical activities in the subject and stimulate experimentation and creative development. Key elements in the subject are movement and play, versatile sports, fair play, dance and outdoor life (*Utdanningsdirektoratet 2018*).

In addition to Physical Education class, Norwegian students in grades five through seven are required to complete 45 additional minutes of Physical Activity (*Fysisk Aktivitet or FA*) class per week. The goal of this class is purely to increase students' weekly physical activity levels, and it is not connected to any other specific curriculum outcomes. Between grades 5 and 7, students are required to fulfill 76 hours per year of FA class, and schools allocate weekly time to the class. FA is generally offered as two 45-minute to 1-hour classes per week and is taught by assistant teachers. At both Tiurleiken School and Voksen School in Oslo, FA hour requirements are met within grades 5 and 6. Students in these grades at both schools receive 1-2 hours per week of Physical Activity class.

Linn Bergengen Lyseng, a Physical Education teacher at Voksen School describes how the students are active participants in the design of the class and are involved in deciding what activities are included in Physical Activity class: "It's maybe 3 weeks with cheerleading, and then dance, then basketball and volleyball. Some teachers play any kind of sports the children want. Usually we ask the children what they want to do, because they feel that is their class." Physical Activity class often takes place outside and is characterized by a sense of freedom from curriculum requirements. Bjørg Sandvei, Principal of Voksen School explains: "The students don't have to change their clothes and take a shower after [Physical Activity class]. It's very free!"

While the 135 minutes per week of mandated physical activity represented by Physical Education and Physical Activity classes does not ensure that every Norwegian child meets the country's daily physical activity guidelines of sixty minutes per day, it does represent an acknowledgement that the school environment can be an appropriate venue in which to promote physical activity. While on paper children in Nova Scotia and Norway are receiving similar amounts of physical activity per week (150 minutes in Nova Scotia and 150 minutes in Norway), the reality is something different. Where Nova Scotian teachers have had difficulties implementing the additional 50 minutes of Physically Active Time that was introduced in 2015 with their students, the flexibility around Norway's Physical Activity class has ensured its success for children in grades five through seven. Through practices like outdoor school days, which are not mandated by curriculum, but are a tool that Norwegian teachers employ to deliver curriculum, the youngest children in Norwegian schools receive higher amounts of physical activity per week than their Nova Scotian counterparts.

Support for increased physical activity within the school day is on the rise in Norway as well. A motion to legislate one hour of physical activity per school day for children in the first to tenth grade is now before the Norwegian parliament (Kalajdzic, 2017). If the motion passes, Norway will become the first country in the world to mandate sixty minutes of physical activity within the school day (Resaland, 2018).

Friluftsliv (Outdoor Life)

“Helse, rikdom, og glede rommes i det ene ordet: Friluftsliv”
“Health, richness, and happiness are contained in this one word: Friluftsliv”
Mikkjel Fønhus (Norwegian novelist)

Literally translated, *friluftsliv* means “open air life.” The term was pioneered by Norwegian playwright Henrik Ibsen in the 19th century, who used it to describe the value of spending time in remote locations for physical and spiritual wellbeing (Savage, 2017). Although perceived as a predominantly Norwegian phenomenon amongst Canadian scholars, *friluftsliv* “as a broadly recognized concept and an applied philosophy has a long history also in other parts of the Nordic region” (Vikander, 2007:10). Put simply, *friluftsliv* is outdoor recreation following a particular Scandinavian tradition (Henderson, 2007:5).

National conversations abound in Norway on the nature and origins of *friluftsliv*. For many, *friluftsliv* is inherently tied to the country’s origins in agriculture and fishing, and to the traditions that have developed over generations within particular landscapes and settings. Brooks and Dahle (2007) describe how *friluftsliv* “has developed from older Norwegian traditions that are especially local [and] somewhat personal; they might be seen more as part of living family histories than expressions of national identity” (ix). For Brooks and Dahl, *friluftsliv* is “nature-life traditions” that “resemble oral traditions, kept alive by repetition and subtle improvisation in response to the patterns and variations in nature, encountered along well-known paths” (Ibid., x).

Hanne Gunderson’s definition contains similar reflections on the historical, geographically-situated, and familial nature of *friluftsliv*. For her, *friluftsliv* is a part of “the Norwegian people’s soul” or *Den norske folkesjelen*:

It is a natural thing to do. We have nature all around us, and to be outside and enjoy it is natural. And for me it is sort of an extension of the former way of life in Norway, where almost everyone was farmers or fishers, or both. People who used nature in every way to survive and live. *Friluftsliv* is also a way to learn to survive in our days; a way that old wisdom and knowledge is learned and passed on. And in addition, all the new ways of outdoor life which are to challenge yourself and to achieve something you may not believe you could do; learn to climb high mountains, in the literal and transferred sense. And it is recreation. It lowers stress, and fresh air is always healthy and useful. It is a way to use your whole body in exercise (Gunderson, 2017).

While emphasizing the historical roots of *friluftsliv*, Gunderson’s definition articulates the modern context of *friluftsliv*, and its strong connection to outdoor recreation and physically active pursuits.

The concept of *friluftsliv* is also closely tied to *allemannsretten*, the nationally legislated right to roam. In Norway it is enshrined in law that all people have the right to walk and camp practically everywhere, as long as they show respect for the surrounding wildlife, nature, and local people (Savage, 2017). *Allemannsretten* is vital to the practice of *friluftsliv* and has had “the deepest significance for the development of the *friluftsliv* ethos in the Nordic countries” (Vikander, 2007: 11). Simply put, *allemannsretten* makes it much easier for Norwegians to connect with natural areas in both urban and rural settings, as they are not considered off-limits due to private property laws that restrict public access.

Friluftsliv in Norwegian Schools

Friluftsliv is a major source of support for physical activity in all the schools visited during this research. The administration and teaching staff at all schools are comfortable with their students spending time outdoors during the school day, both during class time and on breaks.

Staff at all the schools visited during this research have positive views of the outdoors as a valuable arena for teaching students. For the teachers and administrative staff who participated in this research, outdoor lessons:

- provide students with the opportunity to connect with the natural world,
- help students develop skills for spending time outdoors,
- encourage students to be more physically active, and
- bolster students’ academic lessons by providing experiential learning opportunities.



The return hike from an outdoor school day at Berger School, Akershus

The emphasis in this section is not explicitly on the activities that teachers do outside with their students, but rather on the positive attitude behind their desire to take children’s learning outside. It is the author’s contention that the nature-positive willingness encountered in teaching and administrative staff in the schools who participated in this research is based in the Norwegian cultural tradition of *friluftsliv* and the associated sense of comfort that comes from a lifetime of recreating and spending time in the outdoors. Descriptions of particular activities and practices that promote outdoor and physically active learning and play follow in subsequent sections.

Education on the Move

Jonas Beck is a Physical Education teacher at Hovseter School, a middle school located on the western side of Oslo. For Beck, teaching Physical Education and Physical Activity classes in a nearby forest is a way to transfer tenets of *friluftsliv* to his students: “I try to give them an experience that the forest is beautiful, and that they can use it to do many things.” Beck teaches outdoor skills as a way to empower students to feel comfortable outdoors, to explore their surroundings and therefore increase their physical activity levels. According to Beck: “When we teach them about fires, we teach them that in any environment; summer, winter, autumn, you can live with the fire. You don’t have to stay at home on the couch all the time. You can go home to your parents and say ‘I can light a fire!’ and go outside and have some fun.” The lesson transferred here is that nature can be a safe and enjoyable place to play and explore, regardless of the season.

Both of these examples from Jonas Beck’s teaching show how the traditions of *friluftsliv* are transferred within the educational setting to younger generations. Teaching these lessons not only helps the children be physically active during the school day, it also transmits a deep appreciation of the natural world and provides students with valuable outdoor skills that they will use outside of school, throughout their lives.

Just up the road from Hovseter School is Voksen School, an elementary school located close to Nordmarka, a large wilderness area popular for outdoor recreation in all seasons. Voksen School has a large and beautiful schoolyard, with many amenities and natural areas for playing. There is an apple orchard, a chicken coop, and paths through the forest leading to a community garden that is regularly used by the school.



The community garden that students from Voksen School use regularly

Bjørg Sandvei is the Principal of Voksen School. Learning in nature is so important for her that she regularly reminds her teaching staff to take their lessons outside: “We ask the teachers to do outdoor activities, connected to the different subjects. We have to push all the time, to go out and do Science and English outside.” While she says that she doesn’t encounter resistance from teaching staff to teach lessons outside, she does find they need reminders from time to time to encourage them.

For Sandvei, the environment around her school is ideal for helping her students connect with the natural world and be physically active during the day: “There are a lot of things to do outside, and we have a small river, a

Education on the Move



The chicken coop and orchard at Voksen School, Oslo

stream. Outside, you can look at flowers and birds, and do physically active things. It's fantastic!" Sandvei's enthusiasm is contagious and her efforts to champion outdoor learning at her school have ensured that students in all grades enjoy outdoor lessons throughout the year.

At Berger School, an elementary school located on the Nesodden Peninsula in the Municipality of Akershus, the children in the first grade spend every Wednesday in the forest throughout the school year. Berger School is one of many in Oslo and Akershus that offer Outdoor School Days (*uteskoledager*) to students in the first to

fourth grades. Winter weather doesn't impede the classes from participating in the lessons, the teachers just adjust the activities included in the outdoor school day. Line Wagnildhaug, a first grade teacher at Berger School describes this: "We come to the same place, all year. When there is snow, we go skiing. Not here, in another place that is close to here. And we have a skating rink near the school. So, we skate and ski when it is cold." Line's positive attitude towards outdoor learning in the winter is arguably founded in many years of experience being outdoors and practicing *friluftsliv*. For Wagnildhaug and the other teachers at Berger School, winter weather is not an impediment, but an opportunity to teach the children other physically active sports and activities that help them connect with the natural world around them.

All of the schools discussed here are located near large forested areas which are seen by staff as productive arenas for teaching. The concept of *allemannsretten* supports these schools' ability to take their lessons and children outside because the teachers and students have the right to use the natural spaces around them for learning and exploring. In these schools, the neighbouring forests are seen as large and open extensions of their classrooms, not privately-owned land that is inaccessible to them.



Climbing trees at Voksen School

Friluftsliv in Nova Scotian Schools?

Adopting more *friluftsliv*-like educational practices into school days in Nova Scotia has the potential to diversify children's school days and increase their daily physical activity levels. Research has shown that students take 35% more steps when Physical Education class takes place outside (Smith et al., 2009).

Brookes and Dahle (2007) contend that "*friluftsliv* cannot be simply uprooted and translated into different cultural, historical and geographical contexts" (ix). While Canada does have its own culture of outdoor life and recreation, its dissemination is not as readily apparent in Nova Scotian schools as it is in the Norwegian schools that participated in this research.

It may not be realistic to expect a straight-forward transmission of *friluftsliv*-based educational practices from Norway to Nova Scotia. However, the above examples provide inspiration for educators and physical activity professionals in Nova Scotia, where many schools are located adjacent to vast tracts of forest and other natural features. Can we think differently about where the boundaries of our classrooms lie? Can we teach Physical Education classes outside as well as inside on a regular basis? This is particularly intriguing knowing Nova Scotian children are not always meeting Physical Education class curriculum requirements due to space restrictions and scheduling conflicts in some schools.

While Nova Scotians do not have the same legal right to roam that Norwegians enjoy, there are productive examples from outdoor after school programmes around the province of how partnerships between schools and neighbouring landowners can be struck to support children learning in the forests adjacent to schools. Examples of successful programmes that teach *friluftsliv*-like practices in Nova Scotia include the popular Trailblazers outdoor after school programme that is run by several municipalities across the province and offered at school sites to students in grades 4 - 7, and orienteering lessons for children that are offered at one school located on the province's South Shore. However, it is important to note that these lessons are offered as extracurricular activities and are run by municipal units and volunteers. Participation in these programmes is voluntary, and due to space restrictions, the programmes reach only a small portion of the student body.

Furthermore, many schools in Nova Scotia have incorporated outdoor classrooms and other natural play features into their outdoor spaces. Green Schools Nova Scotia provides an online resource to assist schools with the creation of natural playgrounds and outdoor classrooms (Green Schools, 2018). Examples of professional development opportunities for teachers in Nova Scotia like the Reconnecting with Nature workshop discussed on page 12, and St. Francis Xavier University's Certificate in Outdoor Education programme demonstrate a keenness on the part of some education professionals to incorporate *friluftsliv*-like practices into their teaching.

Outdoor School Days (*Uteskoledager*)



Field Dispatch: Outdoor School Day at Berger School

I'm in the middle of a forest, nestled deep on the Nesodden Peninsula, a long and narrow finger of land located near the top of the Oslo Fjord that points directly towards the city of Oslo, the capital of Norway.

It is a chilly morning, around 7 degrees centigrade, the forest floor is wet with puddles and a dampness hangs in the air all around us. Autumn is already well underway midway through September, and we are all dressed to keep the chill at bay. I am here with 60 first graders and 6 teachers from Berger Skole – an elementary school administered by the Municipality of Akershus.

Earlier this morning, I met up with the children in the hallway outside their classrooms as they were preparing to leave on their *uteskoledag* or outdoor school day - something that the first graders here at Berger School do every Wednesday, throughout the school year.

Woolen hats, mittens, rain coats and boots were scattered on the floor all around the children as they scrambled their way into outdoor gear. At the helm was Line Wagnildhaug, one of the school's first-grade teachers. Looking up from the chaos surrounding her, she warmly welcomed me to the group with a chuckle about her inability to speak English (which proved to be completely unwarranted – like most Norwegians, she spoke nearly perfect English). Once dressed, the group mustered outside. Line and her teaching assistant worked their way down the line of students, ensuring that each child had their boots on properly and that their backpacks were clipped across their sternums and waists. They were, after all beginning a 2 kilometre hike into the forest. Best to be prepared. And yes, all the children wore an ergonomically fitted rucksack.

The hike was slow but fun. Nobody complained. Three groups of 20 children walked with 2 staff members each - picking up coloured leaves and jumping in puddles as we went. We hiked along a paved path that turned to gravel once we passed under the two-lane highway that runs parallel to the school. At the far end of a large football pitch we picked up a small dirt path that led us through ploughed fields and into a mixed forest.

We arrived at an open section of forest strewn with large granite boulders and a fire pit. The children took off their backpacks and sat down to eat and drink from their *matpakke* (packed lunches). The group chatted happily and giggled when they heard their teachers speaking a strange mixture of English and Norwegian with me. Ten minutes later, once everyone had finished their snack – the children broke up into their smaller classes.



Snack time at Outdoor School Day, Berger School, Akershus

I accompanied Line's class into a neighbouring section of the forest. Every surface on the ground was coated in moss. The rocks, roots and stumps were all slippery. Huddled in amongst the wet trees, we played a series of games that included singing, jumping off rocks, avoiding the lava monster, and planning a theoretical group picnic. The games all encouraged the development of language and math skills without any overt discussion of the subjects themselves.

After an hour of playing, we made our way back to the main site for lunch. The children nimbly and hungrily made their way ahead of the teachers. Stopping for a minute to catch her breath, Line bent down to lace up her

hiking boot. As she stood up, she looked up at me with a giant and warm smile on her face. "The students," she said, "they're so beautiful, aren't they?"

Following lunch, the children enjoyed free play for an hour and a half. I was invited to join a group of girls who were engaged in making *syltetøy* (jam) from the wild blueberries scattered across the forest floor. They collected the over-ripened berries in paper cups and mashed them up with sticks. We happily worked at this for over half an hour, chatting away and teaching each other the Norwegian and English words for everything that came across our path. Stick = *pinne*, rock = *stein*, blueberry = *blåbær*.

At 1pm, four hours after we entered the forest, we all donned our packs, formed our groups and began the two kilometre hike back to the school. The hike back was a little slower than our morning walk into the forest. But that's not surprising, is it?



The above Field Dispatch paints a picture of what outdoor school days look, sound, and feel like for the first grade students at Berger School on the Nesodden Penninsula in Akershus, Norway.² Common throughout Norway, outdoor school days provide students with regularly-scheduled, immersive experiences in nature. Outdoor school days are packed with physical activity, opportunities for

² The Nova Scotian equivalent is grade primary.

cooperative, imaginative, and child-led play, and chances to connect with the natural world in a sustained and meaningful manner.

Children in the first grade at Berger School participate in outdoor school days every Wednesday throughout the school year. Second to fourth grade classes at the school hold outdoor school days once a month, or “when it’s suitable for the teachers and related to class themes”, reports Ole Bent Myhrvold, Principal of Berger School.

For the teaching and administrative staff at Berger School, outdoor school days are a part of a comprehensive approach to teaching children in the early years of elementary school that recognizes their need to move and play. Outdoor school days provide the ideal arena for young children to learn social skills *and* develop practical skills in academic subjects like mathematics. According to Line Wagnildhaug, the first-grade teacher from Berger School featured above: “When they are so small, and just starting school, this [outdoor school day] is the perfect arena for them for socializing and playing. There is lots of learning and playing. And quite a lot of mathematics, counting and forms and shapes, and sorting. We’ve been doing lots of that.” Ole Bent Myhrvold shares a similar perspective on the benefits and necessity of outdoor school days for the youngest children at his school: “I think it’s a good arena for doing practical work, with math and sorting. And of course, some of the small kids are only 5 years old, and they need one day of playing!”



Kindergarten children explore the shores at Sognsvann Lake, Oslo

While the concept of children spending an entire school day outdoors may seem extreme in a Nova Scotian context, outdoor school days are common across Norway. They play an important role in young Norwegian children’s transition to the school years from their early education experiences in kindergarten (*barnehage*).

In Norway, many children begin attending state and privately-run kindergartens at the age of one. They begin elementary school the year that they turn six. Children in Norwegian kindergartens spend a significant amount of time playing outdoors and it is very common to see groups of toddlers and preschoolers dressed in high-visibility vests exploring the parks and natural spaces around Oslo with their kindergarten teachers.

Once they've transitioned to elementary school the outdoor experiences that Norwegian children had in their kindergarten years have prepared them and their parents for outdoor school days. Line Wagnildhaug describes this: "All of the kids, and the parents of the kids who went to kindergarten are used to this as well ... Most parents are happier the dirtier their children are, because it means that they had been playing well [during the school day]." The teaching staff at Berger School have encountered some resistance towards outdoor school days from parents who do not want their children to become dirty while playing outside. However, the bulk of this resistance comes from families who have recently immigrated to Norway, and who have not acclimatized to the country's cultural traditions and the importance of *friluftsliv*. This resistance changes over time, as parents come to learn the value of this culturally-engrained way of teaching and learning.

Outdoor school days consist of a combination of organized games and activities, meal time, and free play. The organized games emphasize learning in language development and numeracy, as well as physical literacy skills. Children are also taught how to use tools such as knives and saws safely, and how to build and cook over fires. For Ole Bent Myhrvold it is important that all the activities included in the outdoor school days at Berger School are planned with a specific purpose:

That is one of the things we have to put some topics into the day, into the *uteskoledag*. And I think one of the essential things is to have a target when we are going on the *uteskole*. And I think that the teachers need the target. And the students need them too. The playing is important, but it's always important that these days have a direction. Because we can't only play for a whole day. And the teachers, I think they find it better. They find it easier to explain for demanding parents!

Assigning learning directions for outdoor school days not only provides a pedagogical structure for teachers and students, it also assuages the concerns of parents who may not see the benefits of outdoor school days as clearly as some teaching staff.

Ole Bent Myhrvold's description of the history of outdoor school days at Berger School reveals that there is a broader trend in the country towards promoting academic learning at the expense of more experiential, outdoor-based learning methods. Several of the teachers from other schools across Oslo who participated in this research discussed feeling this trend within the context of their schools and teaching work.

Outdoor school days began at Berger School in 1997, and in those early days, all grades in the school participated. At that time teaching staff from across the Municipality of Akershus were offered professional development in outdoor education practices. By 2013, when Myhrvold began as Principal at the school, only the first through fourth grades participated in outdoor school days. A year later, outdoor school days were offered weekly to the children in the first grade, and monthly to the second to fourth

year classes. For Ole Bent Myhrvold, the changes were necessary to ensure that the children in the second to fourth grades were meeting the curriculum outcomes:

I guess my thoughts as the headmaster was that once a week, every week for the first to fourth grades is 20% of the week. And 20% of school for the first four years [is] too much. I think it's important, especially in the third and fourth year to maintain continuity in lessons through the week. I understand that the first grade needs a little more activity and lots of time to play and to have social interactions.

Once the children at Berger School return from their outdoor school day in the forest, they do a writing exercise to reflect on the day. "Everyday that they are in *uteskole*, they always finish with some writing. We have them write something about the day" explains Ole Bent Myhrvold.



Hiking into the forest. Outdoor School Day, Berger School, Akershus

Outdoor school days are an example of how experiential learning in the outdoors has been successfully incorporated into school days for elementary-aged children in Norwegian schools. They provide young children with an immersive experience in the natural world that invites physical activity, play, and the development of both social and academic skills.

Outdoor School Days in Nova Scotia?

While many schools in Nova Scotia have close access to beautiful tracts of forest and other natural spaces, outdoor school days are not something that occur regularly in Nova Scotian schools. As discussed in the section on *friluftsliv* (pages 17-21), it would be difficult to transpose the Norwegian practice in its entirety to the educational setting in Nova Scotia.

However, changes in outdoor space design in schoolyards towards more natural play and learning spaces, such as outdoor classrooms, and some teachers' efforts to incorporate being outdoors into their teaching through professional development and praxis do demonstrate that there is a growing desire for more outdoor-based, experiential learning in our schools. Loose parts play programmes are beginning to surface in some Nova Scotian schools. Loose parts play allows children to construct and manipulate natural and collected objects such as stumps, sticks, tires, tarps and ropes. It promotes collaboration among students, gross-motor skill development, and problem-solving skills.

Furthermore, extra-curricular, outdoor after school programmes, such as Trailblazers are providing some children with immersive experiences in nature and increased physical activity in the after school period.

In the Halifax region, Wild Child NS Forest School offers forest-based learning adventures for elementary aged children in both the after school period and on weekends.

It may not be realistic to assume that early elementary teachers will take on the mantle of outdoor school days and begin spending an entire day of school outside with their students. However, how can elements of *uteskoledag*-inspired, nature-based play be incorporated into young Nova Scotian's learning within the setting of formal education? Can Nova Scotian grade primary children take walking trips to the nearby forest to collect objects such as pinecones, sticks, rocks and leaves for sorting and counting? All are objects that are readily available in the forest and just waiting to help them with their early lessons in mathematics. Can those same objects be used to create art projects? Mandalas and three-dimensional pictures for instance?

There is a wide world of learning opportunities awaiting Nova Scotian school children in our forests. And, a key benefit to those opportunities is that they don't require increased spending on learning materials and expensive technology. As Ole Bent Myhrvold, the Principal at Berger School back in Akershus points out: "Nature is free!"

Physical Activity Days

All of the schools that participated in this research provide physical activity days for their students. Physical activity days are pan-school initiatives that include students in all grades, and usually involve a trip off school property to a nearby venue that is conducive to physical activity and outdoor play. These physical activity days take place in all seasons, and the events promote outdoor activities and participation in team sports.

Hovseter School, on Oslo's west side, provides its students with two major outdoor sports-themed physical activity days during the school year. In the autumn the school hosts an outdoor sports day for the 600 students who attend the school. The activities offered to students include orienteering, cycling and hiking. According to Jonas Beck, a Physical Education teacher at the school, approximately 400 students chose orienteering each year. The school also hosts a sports day, in which the whole school participates in volleyball, soccer and basketball tournaments. These physical activity days require significant coordination from the school's Physical Education teachers, and all staff are required to assist with the events.

Tiurleiken School relies on the local natural and social resources available in its community of Romsås to provide physical activity days for its students. In the autumn, the children in the first and fifth grades go hiking in the nearby forest called Lillomarka to pick blueberries. For the teachers and administrative staff at the school, doing so is beneficial for students as it promotes physical activity within the school day, and also teaches students how to safely enjoy the natural spaces in their neighbourhood.

In December of each year, the students at Tiurleiken School go ice skating at a nearby rink. The event is organized by the school's Physical Education class teachers and is offered to students at low to no cost. As Karoline Sem Nilsen, Vice Principal at the school explains, the school is responsible to ensure that all students can participate: "We don't have a specific budget [for these events], we just have to do it. It's free to attend public school in Norway so we have to. If we want to go on a trip, the school has to pay. But sometimes we ask parents 'can you bring 50 kroner?' [approximately 8 Canadian dollars], and most of the families can do that." To facilitate school-wide physical activity events like this, the school also relies on a local community organization called *Frivillighetsentralen* that loans sports and outdoor equipment to the children free of charge.

After School Programming: The Activity School (*Activitetsskolen*)

In Norway, before and after school programming for elementary school aged children is provided and administered by municipal governments. The programme is offered at all schools and is called *Skolefritidsordning (SFO)* and is a fee-for-service programme. In Oslo, *SFO* is called *Activitetsskolen (AKS)* or the Activity School and is administered by the Oslo Education Authority. Subsidized rates are available to families who cannot afford to pay full programme fees.

The *AKS* programme provides care for children in grades 1-4 in the before and after school periods and offers “activities that contribute to children’s academic and social learning” (Oslo Kommune, 2018). Physical activity is promoted within the programme through regularly-scheduled periods of outdoor free play on school grounds, and during excursions to natural areas and recreational facilities in the neighbouring environs.

At the Nøklevann Activity School, housed within Nøklevann Elementary School on the east side of Oslo, the children who attend the programme have access to a fleet of bicycles for riding around the schoolyard during free play, and to a section of forest that includes large boulders for climbing on and a large hill that borders the schoolyard.

The following is a Field Dispatch, written from the author’s observations of a Tuesday afternoon at the Nøklevann Activity School in September of 2017. The Field Dispatch sets the scene of a typical afternoon at the Activity School and highlights the amount of physical activity that children in the Activity School participate in regularly.



Field Dispatch: Nøklevann Activity School



Setting off to the skatepark,
Nøklevann Activity School

The bell announcing the end of the school day has rung, and the Activity School children have finished their homework under the supervision of Activity School staff. They have all eaten a nutritious snack of open-faced sandwiches, featuring the ubiquitous combination of sliced cucumbers, bell peppers, cheese and brunost, a sweet cheese adored by many Norwegian children. The children get dressed in their outdoor clothing and head out into the schoolyard for an hour of free play. Following free play, it is time for the afternoon's organized activities.

The two main activities offered at today's Activity School (AKS) are a cooking class and a trip to the local skate board park. I accompany the group headed for the skate park. Under the caring guidance of Harjinder Sarna and Stian Nordby, the group of 12 children in grades 2-4 gear up in their helmets, and elbow and knee pads in the schoolyard. Once everyone is ready, the group hits the trail through Østmarka, a large forest that borders the schoolyard. The children carry their skateboards and roller blades without complaint.

We hike a kilometre through the forest and across a housing development to arrive at the skate park. Stian, the young and warm-hearted skateboard instructor helps set the kids up and then begins to rip around the park himself. Stopping to give pointers whenever a child asks; "Kan du lære meg olly?" or "Can you teach me to olly?"

Even after a full school day, and a full hour of active free play outside in the Activity School before we set off on our skate park adventure, none of the children seem tired. In fact, Harjinder tells me that after the AKS programme, many of the children will go on to football and other organized sport activities.



At the skatepark,
Nøklevann Activity School



Choosing the adventurous path back to school, Nøklevann School

With a kind, “Er du bra?” Harjinder checks in with the children, asking if they are okay, as they blast around the small skate park. The kids fall, scrape their knees, jump back up and keep going. Stian tells me with a smile on his face, “We don’t have to motivate the children to do this.”

For Stian, who has skateboarded his whole life, the sport is much more than just a fun way to be physically active. Sitting on the side of the park, watching the children, he poetically tells me, “When you skateboard, you find yourself. You find joy in just having this board and these wheels. It is about you and your self expression.”

We’re at the park for an hour and a quarter before we start the trek back to the school. The children lead the way, and select a very steep, narrow footpath through the trees as opposed to the wide walking/ski trail that leads directly back to the schoolyard. Lugging their skateboards and rollerblades behind them, the group slows down as we finally approach the schoolyard. It is 4:30 pm, pick-up time.



Schoolyard Design and Physical Activity in Oslo Schools



Forested play area at Tiurleiken School

The outdoor play spaces of the Norwegian schools that participated in this research are similar to schoolyards in Nova Scotia. They contain many of the same elements present in Nova Scotian schoolyards: playground equipment, sports fields, and concrete play areas. However, many of the schools also incorporate natural elements of the landscape into the design of their schoolyards, such as forested and large rocky areas.

As opposed to many Nova Scotian schools where forested areas have been removed to make space for playing fields or forests lie on the outside of schoolyard fences, natural

landscape features are often incorporated in play spaces for children at the schools that participated in this study. Furthermore, through innovative use of typical school ground elements such as play equipment, concrete play areas and grass fields, many schools have been able to promote higher levels of physical activity during outdoor breaks for children at these schools.

Tiurleiken School is an elementary school located in north-east Oslo. The school sits near the top of a steep hill and lies adjacent to a busy road. Because of the steep topography there is not enough open space in the schoolyard to accommodate a large, grass playing field. The schoolyard contains natural features such as large mounds of granite and forested areas that have been incorporated into the play spaces for children. The natural features of the landscape encourage physical activity amongst the student body by offering opportunities for the students to climb up and over large stones and play imaginative games amongst the trees.



Resourceful use of existing natural features at Tiurleiken School

Furthermore, when selecting locations for playground equipment, the school chose to incorporate the schoolyard's topography into the play structure design as opposed to working against it. By building slides and other climbing structures into the hilly landscape, the school has provided students with increased opportunities to be physically active. It takes more energy to climb a hill than it does to walk on a flat surface.



The chicken coop and orchard at Voksen School

Voksen School, a large elementary school located on the west side of Oslo has an expansive school ground. The outer reaches of the schoolyard contain an orchard, chicken coops, areas for outdoor cooking, and playing fields.

Immediately adjacent to the school building is a large area covered in concrete. Through the innovative use of paint, the school has transformed what could be an uninspiring play surface into a space that promotes physical activity. In one section of the concrete play area, the school has painted lines at measured intervals that encourage the children to run sprints and other running races. In an adjacent area, lines are painted that encourage the children to practice safe cycling habits during outdoor Physical Education classes and during breaks.

Nøklevann School in eastern Oslo lies adjacent to a large forest. As opposed to building a fence to keep the children out of the forested area that lies next to the main playground space, the school has painted lines on trees to mark the boundaries of play. This has created an inviting play space for the children that welcomes them to use a portion of the forest during their outdoor breaks and during the school's after school programme. The forested area is hilly and is conducive to promoting climbing and balancing skills. The three schools discussed above provide some productive examples of how physically active play can be encouraged through resourceful and creative outdoor space design within the schoolyard.



Running course painted onto asphalt at Voksen School

Education on the Move

In the examples of both Tiurleiken School and Nøklevann School, working with and not against the natural features of the landscape has created natural play spaces that promote higher levels of physical activity during play. These spaces encourage children to climb, balance, and navigate over uneven surfaces – all of which are actions that encourage the development of physical literacy skills and promote higher levels of physical activity. Voksen School demonstrates how a seemingly unproductive outdoor space can be turned into a venue that gets children engaged and active in the space with the figurative and literal stroke of a paintbrush.



The schoolyard at Nøklevann School, with the forested play area on the right side of the photo



The forested play area at Nøklevann School

Can we in Nova Scotia use these examples to reconsider the assets that we already have in our schoolyards? Many schools in rural areas of Nova Scotia have forest on their school property, and yet fences prevent the children from using the forest during their breaks. Is it possible to move or remove the fences that keep the children out of the woods?

When a school is due for playground renewal, as opposed to turning immediately to traditional, static play structures, can the school consider using the natural features in the area that promote physically active play, such as hills, forests and rocks, and work towards incorporating these elements into their new design, as opposed to excluding them?

Tiurleiken School and The Active Smarter Kids Programme

Introduction

Tiurleiken School is an elementary school located in Eastern Oslo in the district of Grorud. Sandwiched between a large forest called Lillomarka and one of the main highways north out of the city is Romsås, the neighbourhood in which Tiurleiken School lies. It is not a vibrant or affluent neighbourhood.

Located 12 kilometres north-east of the city centre, it takes half an hour on the T-bane (metro) to get to Romsås. Around the metro station exit are several mid-rise apartment blocks surrounded by expansive parking lots and forest. The school is situated a few hundred metres from the station and the community centre — a tall building that houses a library, a fruit and grocery shop, and a community outreach organization. The schoolyard is small compared to the other schools visited during this project. It is made up of playground equipment and concrete play areas surrounded by a thin band of forest.



Tiurleiken School

Of the 300 students who attend Tiurleiken School, approximately 270 speak Norwegian as a second language, and 50 languages are spoken within the school on any given day. The population of Romsås is very multi-cultural, and the neighbourhood has lower socio-economic status compared to other parts of the city. According to Karoline Sem Nilsen, Vice Principal at Tiurleiken School who has worked in the area for over 8 years, Romsås has a negative reputation: “In other parts of Oslo, people are maybe afraid of Romsås. A lot of people who live in Oslo, especially on the West Side, have never been here.” Because of its remote location within city boundaries but tucked away behind a large forest, Sem Nilsen describes the area as forgotten: “Here we are on this little mountain. And we feel like we are forgotten. One metro stop down the line in Grorud, it’s like another environment.”

There is a significant difference in life expectancy between people living in the western and eastern parts of Oslo. As an example, women in the outer western districts live the longest and have a life expectancy of 83 years. The life expectancy of men in these areas is 78 to 80 years. By comparison, the average life expectancy of women in the inner eastern districts of Oslo is 78 years, and almost 72 years for men (Wikipedia, 2018).

Despite the socio-economic disadvantages at Tiurleiken School, the staff are determined to furnish their students with a quality education that includes regular periods of physical activity. For Sem Nilsen, the benefits of being physical active during the school day are at least two-fold. Not only does it help the children burn off energy, but with such a multi-cultural school population where the vast majority of students are in the process of learning Norwegian, being active in class or out in the schoolyard helps them communicate: “I think it is very important to go outside and be physically active during the school day. The children need it because they have so much energy. And the language here [is new to many children so] they need to use their body to express themselves.”

Like the other schools visited during this research, the children at Tiurleiken have many opportunities to be physically active within the school day and year. The school follows the national curriculum guidelines for both Physical Education and Physical Activity classes and organizes physical activity days throughout the school year, as described earlier.

But most interestingly, in 2016 Tiurleiken School began offering FLA lessons to children in all grades (grades 1–7). FLA stands for *Fysiske Læringsaktiviteter* in Norwegian, or Physical Learning Activities in English. The lessons are derived directly from Active

Smarter Kids (ASK) teaching methods, which are described in detail on page 38³. FLA/ASK lessons involve the incorporation of academic subjects such as Math, English or Norwegian into fun and easily executed games and physical activities that take place in the schoolyard and inside. Simple relay races and scavenger hunts are two examples of activities commonly used in FLA/ASK lessons. FLA/ASK lessons are taught by classroom teachers in the schoolyard for 30 minutes a day and are offered 3-4 times per week, depending on the grade. The younger the grade, the more frequent the FLA/ASK lessons.

On the day I visited the school, after the recess bell rang I watched a grade four class swiftly break up into four teams on a concrete portion of the schoolyard. Their teacher, Caroline Solberg, jogged to the top of a brick-covered hill, placed a laminated sheet of paper on the ground and jogged back to the group. She blew her whistle and the kids were off. One by one, they ran to the top of the hill, read a math question



Math on the move. Grade four FLA/ASK lesson, Tiurleiken School

³ For purposes of clarity, this report refers to Tiurleiken School’s FLA lessons as FLA/ASK lessons, except in the case of quoted text from Tiurleiken School staff, where they are referred to as FLA lessons.



Geometry and cooperation in action. Grade six FLA/ASK lesson, Tiurleiken School

off the sheet, answered the teacher verbally, and ran back down to their team. This went on for 20 minutes or so. The children were laughing, cooperating, and having a very good time.

Later, in another section of the schoolyard I was invited to watch the grade six class in their FLA/ASK lessons. They too were doing math that day. Like the grade fours, this class involved relay-style running games on a small concrete play pad. The cooperation and sense of respect among the students was palpable. The FLA/ASK class ended with a lesson in geometry and group cooperation with the children making human pyramids on the hard, concrete ground. Despite several setbacks, including a few stumbles and a scraped knee, each group successfully formed a human pyramid. There was much laughter and delight.

Active Smarter Kids (ASK)

In 2015, members of the teaching staff at Tiurleiken School collaborated with researchers from the Western Norway University of Applied Sciences in Sogndal to develop their

FLA/ASK lessons. FLA/ASK lessons are based on principles developed in a large research and development project called Active Smarter Kids (ASK) conducted in 2014 and 2015 and led by Geir Kåre Resaland, Associate Professor at the Western Norway University of Applied Sciences. According to Resaland, physically active teaching and learning methods such as those developed in the ASK study provide the opportunity to create a more movement based classroom and school environment. There is growing evidence that such methods improve engagement, on task behaviour, and attainment levels (Resaland, 2018)⁴.

The ASK study was a cluster randomized controlled trial (CRT) that included over 1100 fifth grade children from 57 schools in Sogn and Fjordane County, Norway. Children at all 57 schools participated in national curriculum prescribed physical activity classes (90 minutes of Physical Education per week, and 45 minutes of Physical Activity, for a total of 135 minutes per week). Children at the 28 intervention schools participated in the national curriculum prescribed physical activity classes (90 minutes of Physical

⁴ To study the ASK project in detail, please read:

1. Resaland GK, et al. (2015)
2. Resaland GK, et al. (2016)
3. Resaland GK, et al. (2017)

Education per week, and 45 minutes of Physical Activity, for a total of 135 minutes per week) as well as the ASK intervention model which included an additional 165 minutes of physical activity per week. This increased physical activity occurred in three formats: (1) Physically Active Educational Lessons, in which physical activity was incorporated into academic lessons of the core subjects of Norwegian, English, and Mathematics and taught in the schoolyard (30 minutes, 3 times per week), (2) ASK physical activity breaks during classroom lessons (5 minutes, 5 times per week), and (3) ASK physical activity homework (10 minutes, 5 days per week) (Resaland et al., 2015).

The ASK study was implemented over 7 months, between November 2014 and June 2015. The study's main objective was to investigate the effect of daily physical activity on children's academic performance. Academic performance was assessed in reading, numeracy and English using Norwegian National tests at baseline and post-intervention. The students' physical activity was assessed at baseline, midpoint and post-intervention. Qualitative research techniques were also used to understand "children's embodied experiences and pedagogical processes taking place during the intervention" (Resaland et al., 2015:709).

While the study did not find a "significant overall effect of the intervention on academic performance" it did measure academic improvement in numeracy (often referred to as mathematics) for some students (Resaland, 2016: 327). At the end of the study period, the physically active lessons designed by ASK researchers had had a "significant effect on numeracy among the children who initially performed the poorest" (Resaland et al., 2016: 327).

The ASK study contributes to the growing body of research that shows the connection between physical activity and academic performance. But perhaps more importantly, the ASK research challenges us as researchers, educators, and physical activity professionals to reconsider the intrinsic motivation behind incorporating more physical activity into children's school days. The health benefits of increased physical activity in children have been well-documented (see Dobbins et al., 2013, Janssen and LeBlanc, 2010), and ASK researchers suggest that because of "the number of hours that children spend in school, educating "healthier" children seems a justifiable use of valuable school time" (Resaland et al., 2016: 327). After all, studies have demonstrated that increased physical activity in school time does not detract from academic performance (see Norris et al., 2015, Singh et al., 2012), and there is little evidence to suggest that eliminating Physical Education class to make room for more classroom-based learning results in better academic performance (Hillman et al., 2008).

Furthermore, as Resaland has pointed out elsewhere, because the majority of children spend most of their day in school, "the school setting may be the only setting in society where a large number of children can be reached, from all socio-economic backgrounds and irrespective of their parents' behaviour and attitude towards physical activity" (Resaland, 2017).

Remarkably, one year after the after cessation of the ASK intervention, 84% of the schools continued doing the ASK programme (Gjethammer, 2017). One such school, Trudvang School, located in Sogndal,

Norway has expanded their physical activity programme to include all grades. Their reason for doing so is that staff and administration at the school have found that the students concentrate better during all their lessons and “have a better overall mood” (Resaland, 2017). The teaching and administrative staff at Tiurleiken School in Oslo have observed the same results amongst their student population as a result of their FLA/ASK lessons. The benefits experienced at Tiurleiken School are discussed in detail below.

Resaland et al. contend that with the correct training for teaching staff, and with the support of administrative staff, “the ASK model can be inexpensively disseminated to schools” (2015: 716). This includes schools outside of Norway as well. In order to consider the possibility of implementing ASK techniques at elementary schools here in Nova Scotia, let’s examine how Tiurleiken School has done so. The purpose here is not to offer a step-by-step guide on implementing ASK physically active lessons, but rather to inspire Nova Scotians to think differently about how physically active lessons can be used to improve students’ physical, social, and academic well-being. Let’s look at the steps Tiurleiken School has taken to get to where they are with their FLA/ASK lessons, what the teachers have to say about FLA/ASK, and what the school’s plans are for the future.

Elements of Success at Tiurleiken School

FLA/ASK is now in its third school year at Tiurleiken School, and according to Vice Principal Karoline Sem Nilsen, there are no plans to stop the programme. Students in all grades participate in FLA/ASK lessons, and the administration, teaching staff, and students agree that FLA/ASK lessons are an invaluable component of their school culture. Just ask Caroline Solberg, a fourth-grade teacher who volunteered to sit down and talk about FLA/ASK. During our conversation, Caroline reported that her students bombard her with the same questions at the beginning of each school day: “Can we have FLA? Can we have FLA? Why don’t we have FLA today?” She concluded her thoughts on this with a wink: “That’s a good sign I think.”

What has Tiurleiken School done correctly to achieve this level of success in incorporating a pan-school, health-promoting initiative in a relatively short period of time? Upon closer examination, it turns out that the steps the school has taken from the initial implementation period to the current delivery of FLA/ASK lessons correspond with Daft’s key strategies for successful policy implementation (1999). According to Daft, any successful school-based health intervention has three critical components: (1) providing direction, (2) aligning teacher and school efforts, and (3) enabling the school to conduct the necessary concrete activities.

Providing Direction

The leadership and direction needed to get FLA/ASK lessons started at Tiurleiken School came from the school’s administration in 2015. Tiurleiken’s Principal provided several members of the school’s teaching

staff with the opportunity to travel to Sogndal to meet with both the Trudvang⁵ School, including principal Bjarte Ramstad, and the Active Smarter Kids research team at the Western Norway University of Applied Sciences, including primary investigator Geir Kåre Resaland. Trudvang School and the University College are located 5 minutes apart in Sogndal. The teachers from Tiurleiken School were educated and trained in ASK techniques. There they also had the opportunity to see ASK methods in practice at Trudvang School. Upon the teachers' return to Oslo, the administration ensured that the time necessary for peer-led mentoring in ASK methods was provided to all staff during regularly scheduled staff meetings and preparation time. Furthermore, throughout the implementation period the administration ensured that the parent body was well-informed about the purpose and practical realities of FLA/ASK lessons.

Aligning Teacher and School Efforts

Initially, rather than launching a school-wide project to incorporate FLA/ASK lessons into each grade, the staff at Tiurleiken School started slowly. This was advised by Geir Kåre Resaland. FLA/ASK lessons were



Grade four FLA/ASK lesson, Tiurleiken School

first incorporated into the second grade classes in the 2014-2015 school year. The choice to start with only one grade and eventually expand the programme to other grades was deliberate. According to Annette Gabrielsen, a teacher and language supervisor at the school, doing this allowed the teaching staff to see the benefits of FLA/ASK, become motivated to get started with their FLA/ASK lessons, and to take ownership of the method (Gabrielsen, 2016). This sequential approach to ensure buy-in from teaching staff succeeded, and within two years FLA/ASK lessons have become a regular part of school lessons for all grades.

Another key component of the success of FLA/ASK lessons is that they incorporate national curriculum guidelines into physically active lessons. As opposed to being a new subject for teachers to teach, FLA/ASK

⁵ Trudvang School in Norway was the intervention school that participated in Geir Kåre Resaland's PhD work. This school is considered to be a pioneer school when it comes to physical activity in the school setting. The schools accepts a high number of visitors from other schools every year.

To read more about Resaland's PhD work (which was the foundation for the ASK study), please see:

1. Resaland, GK et al. (2010)
2. Resaland, GK et al. (2011)
3. Resaland, GK et al. (2011)

lessons represent a new way of teaching old subjects. In doing so, the staff at Tiurleiken ensure that they fulfill their ultimate responsibility to deliver the national curriculum to their pupils, while also ensuring that their students are healthier and happier children. In fact, the teaching staff have noticed such improvement in how some of their students learn the subjects covered in FLA/ASK lessons that they cannot imagine teaching without it. When asked if the school had plans to continue offering FLA/ASK lessons in the future, Karoline Sem Nilsen responded: “Yes! And the way that FLA is included in academic subjects, that’s why we can do it. We can say, ‘we are practicing curriculum guidelines’. We can’t stop teaching FLA!”

New teaching staff are provided with an orientation to FLA/ASK lessons when they join the school community and are expected to incorporate them into their teaching practice. More experienced teaching staff provide mentorship to new teachers in FLA/ASK methodologies to help them get started.

Furthermore, the collaborative nature of FLA/ASK lessons helps encourage teacher buy-in. The teachers and students work together within their classes to figure out which activities work best for their group. For Maren Berg Johansen, a grade six teacher at Tiurleiken School, focusing on collaborative activities that encourage social cooperation in her FLA/ASK lessons has worked well for her class: “Last year all the students were not very happy and it was difficult to motivate them to work together in groups. So in FLA, we focused a lot on activities that promote social skills. Now they know these activities, and they think they are fun to do together.” In this example, FLA/ASK lessons have benefited both the relationships among the students, and between the students and their teacher.

Enabling the School to Conduct the Necessary Concrete Activities

A final and crucial component of why FLA/ASK lessons have become so successful at Tiurleiken School, is that the school administration has provided the structural support necessary for teachers to effectively incorporate them into their regular teaching practice. The material resources necessary to teach FLA/ASK lessons, primarily laminated sheets of paper, and equipment such as cones, balls, and large dice were purchased by the school and are kept in a FLA/ASK resource closet for all staff. According to administration at the school, the costs for FLA/ASK materials have been minimal (the equivalent of approximately 500 Canadian dollars over 3 years). Furthermore, the administration has devoted time within staff meetings to train in FLA/ASK techniques and share best practices.

Challenges of FLA/ASK Lessons

The incorporation of any health promoting initiative into a school’s operation includes challenges, but the challenges associated with FLA/ASK lessons at Tiurleiken School have been minor, and staff been able to surmount them.

Ensuring that all children participate in FLA/ASK lessons is one of the largest challenges for teachers at Tiurleiken School. The active and fun nature of the lessons reminds many children of playing, and some

children feel that they do not need to participate in the fun. Caroline Solberg describes this: “It is very important to talk to the children about what FLA is. Otherwise, some of them feel that, ‘this is only fun. Tomorrow I don’t want to have fun, I will sit here and wait, and you can have fun.’ So I see that I need to have a structure. And before a new task, I always have this prep talk with my class, what I expect, if they have any recommendations, or something they want. That way they can have ownership over it.” By engaging the students in the planning of FLA/ASK lessons, Caroline is able to surmount the challenge of student perceptions that FLA/ASK lessons are simply play and that participation in the class is optional. Maren Berg Johansen also described how many of her students had difficulties differentiating FLA/ASK lessons from recess time and from Physical Education class: “It was difficult for them to understand the difference between Physical Education, Physical Activity class and FLA. What is the difference here? We have had a lot of talks inside. What is expected from them when we go outside to do FLA, and that this is a lesson, this is class time, and if you don’t attend, it’s like you don’t attend a class inside. And now, everyone attends.”

The winter weather in Oslo also poses some challenges for teaching FLA/ASK lessons. And while the teaching staff at Tiurleiken School share the Norwegian trait of seeing bad clothing choices, not bad weather, sometimes when it’s very icy outside, the conditions are not favourable for FLA/ASK lessons. “Of course, I would never have them running on the ice” says Caroline Solberg. Maren Berg Johansen further explained: “On the ice it can be very difficult, so sometimes we don’t go out because it can be dangerous for the children. But you can do FLA inside too. You don’t have to go outside to do it. Sometimes we go to the big hall in the school, or the gymnasium if it’s available.” Maintaining a flexible attitude and adapting the lesson plan to the weather is evidently critical to the success of FLA/ASK lessons. Both teachers described teaching FLA/ASK lessons inside their classrooms when other indoor space was not available.

Benefits of FLA/ASK Lessons

In a school with such a diverse student population, the physically active and cooperative methods of FLA/ASK lessons have improved cooperation and a sense of belonging amongst students at Tiurleiken School. FLA/ASK lessons are helping many students who do not share a common language communicate with one another and learn Norwegian. As teacher Maren Berg Johansen discussed, the fact that most students at the school are newcomers to Norway, teachers end up teaching things that they do not have to teach in other parts of the city, such as how to dress for the outdoors in cold weather. FLA/ASK lessons have been very beneficial for this.

Caroline Solberg explained how FLA/ASK lessons in Math and Norwegian have really benefited the students who do not learn well in a traditional classroom setting: “Especially some of them find it difficult to sit at their desk and do the work. So, when they can use their body, it seems like it’s more of a flow. And I feel like they get so excited and everybody wants to join, even the pupils who are finding learning the subject difficult.”

FLA/ASK lessons have helped students at Tiurleiken School learn physical literacy skills and have improved the learning environment for both teachers and students. The running, jumping and balancing that students do during their FLA/ASK lessons are not only helping them learn the academic subjects associated with their FLA/ASK lessons, they are also helping the children become more proficient in these fundamental movement skills. For Maren Berg Johansen, this has opened up more possibilities to be active with her students inside the classroom: “I can be more active with my students in the classroom when they are used to being more active outside, even if it’s subjects like Norwegian or Mathematics. Either in the start of the class, or at the end, I would have an active game, where they need to do two and two together, not running, but they go to the back of the classroom and move through the room and use their whole body. And I think that they do that better when they also have FLA.”

From an execution perspective, teachers at Tiurleiken School have found the flexibility around FLA/ASK lessons beneficial. Teachers can choose which academic subjects they incorporate into their FLA/ASK lessons and are not bound by specific requirements. As Maren Berg Johansen said: “It’s not said what subjects I need to do in my FLA lessons. So sometimes it’s Norwegian and sometimes it’s English, and sometimes it’s Math.”

Furthermore, preparing for FLA/ASK lessons is not perceived as extra work by the teachers who participated in this research because FLA/ASK lessons always cover material that has already been taught in the classroom. According to Caroline Solberg: “I don’t consider it extra work because it’s always repetition from the classroom. So, this week in FLA we’ve been doing multiplication, and we have been working a lot with it in the classroom. I never give assignments that they haven’t seen before. So, for me, it’s not extra work.” Maren Berg Johansen repeated the sentiment: “It’s the same for me. FLA lessons are never something new. It’s just doing what they’ve already learned that day or earlier in the week.”

Finally, FLA/ASK lessons take place after scheduled outside breaks. Classroom teachers meet their students outside after morning recess or lunch for FLA/ASK lessons. This ensures that class time is not used up preparing the children to go outside for FLA/ASK lessons (which can take up considerable time during the winter months).

Conclusions on ASK/FLA

The Tiurleiken School example demonstrates that the physically active lesson practices developed from the ASK project are great for promoting cooperation and communication in elementary classes. The teachers engaged in FLA/ASK lessons find that their students are much happier, and that a stronger sense of collaboration exists between both themselves and their pupils, and also among the pupils. Furthermore, FLA/ASK lessons are meeting the learning needs of some students who do not thrive within a traditional, classroom-based learning style characterized by sitting still. In addition, staff have registered an improvement in student achievement in some of the academic subjects included in FLA/ASK lessons.

Active Smarter Kids Methods in a Nova Scotian Context

The physically active lessons designed by the ASK research project and exemplified in FLA/ASK lessons at Tiurleiken School provide a useful framework for increased physical activity within school days in Nova Scotia. Nova Scotian elementary schools are well-suited to incorporate ASK physically active lessons into school days. Of the many different physical activity initiatives that schools in Oslo incorporate into their school days, FLA/ASK lessons seem the most likely to succeed in a Nova Scotian context for the following reasons:

1. ASK methods are simple. They require little preparation time from teachers and are a repetition and reinforcement of material already taught in the classroom setting.
2. ASK methods are not equipment or material intensive.
3. ASK methods are most often executed in the schoolyard setting but could also be indoors when necessary. ASK methods do not require access to forest or natural areas.
4. Training and professional development modules for ASK methods have already been developed by Norwegian researchers and are available for dissemination to schools, physical activity and recreation professionals and others. Geir Kåre Resaland has good overview of this work, and cooperation with Resaland has been established by the author.
5. Online resources for ASK methods exist. ASK physically active lesson ideas for 10-year-old (grade 5) students are available at <https://www.activesmarterkids.com>. Geir Kåre Resaland and his team are working on a plan to extend the ASK website and database to include instructions in English.
6. Under the current Provincial curriculum requirements, all Nova Scotian elementary schools need to provide students in grades P - 6 with 10 minutes per day / 50 mins per week of Physically Active Time (PAT). The physically active lessons developed through ASK could provide Nova Scotian teachers with a simple, yet effective pedagogical tool to help them meet PAT requirements and boost student morale and academic scores — all within the context of their regular teaching responsibilities and hours.

7. Some Nova Scotian teachers are already incorporating short physically active breaks into their pupils' days. ASK methods will build upon, bolster, and expand these efforts.
8. Space limitations and scheduling conflicts have hampered many Nova Scotian school's efforts to meet Physical Education class curriculum requirements. However, all schools in the province have access to outdoor space. Adopting ASK methods could be a unique solution for getting Nova Scotian children active within their school day. This will require a shift in perspective for some teachers to view the schoolyard as a valuable arena for education and as an extension of the classroom itself. However, this is not insurmountable with the appropriate professional development and exposure.
9. Recommendation number 13 in "Raise the Bar: A Coherent and Responsive Education Administrative System for Nova Scotia", an education system administrative review published in January 2018, states that the education system in Nova Scotia needs to "make clear the importance of extracurricular activities, sports and community volunteer support by: Creating a dedicated Physical Activity and Extracurricular Coordinator position in each region or family of schools to assist with the coordination and promotion of a range of extracurricular activities, before and after school and summer programming, community use of schools, inter-school sport activities, and physical activity across the curriculum." With the appropriate professional development and support, the Physical Activity and Extracurricular Coordinator position may be well-suited to support the implementation of ASK methods in Nova Scotian schools.
10. The climate in Nova Scotia is similar to Norway. Both places have long, cold winters and damp springs with variable conditions. If schools across Norway are seeing success with the simple, yet effective methods developed by ASK, schools in Nova Scotia can expect the same!

Conclusions

This research has explored positive examples of how physical activity is incorporated into school days at a variety of public schools in Oslo and Akershus, Norway. Positioned within the framework of the socio-ecological model, some examples, such as outdoor school days (*uteskoledager*) are perhaps too culturally situated within a Norwegian ethos of outdoor life (*friluftsliv*) to be successfully implemented in Nova Scotia. However other examples are simple, resource-light and effective, such as innovative outdoor play space design and the physically active teaching and learning methods developed through Active Smarter Kids (ASK) research. These examples have a high potential for successful implementation within the Nova Scotia educational context.

The majority of Nova Scotian children are not meeting the Canadian Society for Exercise Physiology's guidelines for physical activity of one hour per day of heart-pumping activity (Campagna et al., 2005). Only 9% of Canadian children aged 5 - 17 accumulate 60 minutes of moderate to vigorous physical activity each day (PARTICIPACTION, 2016), and only 24% of Canadian 5 - 17 year olds meet the sedentary behaviour guidelines for children and youth included in the Canadian 24 Hour Movement Guidelines for Children and Youth which recommend no more than 2 hours of daily sedentary time. As Nova Scotian children age, their physical activity levels decrease (Campagna et al., 2005) and they spend increasing amounts of time engaged in screen-based, sedentary behaviour. In fact, Canadian students in grades 9 through 12 spend an average of 8.2 hours per day engaged in screen-based sedentary behaviour (PARTICIPACTION, 2016).

At the same time, curriculum rewrites in Nova Scotia have focused on dramatically increasing learning time to support students' math and literacy skills, while only incrementally increasing time for physical activity within the school day through time allotment for Physically Active Time (PAT). Teachers' efforts to implement PAT within their teaching practices have been primarily self-directed and resources to support PAT have not been released by the provincial Department of Education.

In the long run, sedentary behavior and physical inactivity increase odds of developing chronic diseases such as type-2 diabetes, heart disease, some forms of cancer and mental health problems (PARTICIPACTION, 2016). Is this the future we want for Nova Scotia children?

How can we set our kids up for success and help them reach their full potential? How do we work to bolster their physical, emotional, and social well-being *and* reverse the alarming trends described above? Increasing Nova Scotian children's opportunities to be physically active every day is a step in the right direction. And, it turns out, schools can be the correct venue in which to make this happen.

Research shows that health behaviours track across life - the practices and patterns that are established in early life carry forward into adulthood (Malina, 1996, Kristensen et al., 2008). If a child learns to be physically active on a regular basis during childhood, she is more likely to be active as an adult. Research

also shows that adults face substantial difficulty learning and adhering to healthy behaviours (Rhodes and Plotnikoff, 2006). It becomes much more difficult to positively influence physical activity behaviours at a population level among the adult population (Resaland, 2017). As Resaland points out, we must “think that kids are both kids and the next adult generation” (Ibid., 2017).

And so, if we want to ensure a healthy population going forward, we need to create ample opportunities for children to learn healthy behaviours while they are young. Schools exist in all regions and municipalities and access a large population of children across broad socio-economic and ethnic backgrounds (Lobstein & Swinburn, 2007). Most children spend half of their waking hours in school for between 6 and 12 years of their lives (St Leger et al., 2007). So, schools “may be the only setting in where a large number of children can be reached, from all socio-economic backgrounds and irrespective of their parents’ behaviour and attitude towards physical activity” (Resaland, 2017).

The benefits of increasing physical activity within the school day go beyond the public health perspective. There is evidence that physical activity can improve children’s academic achievements (Resaland, 2016, Donnelly et al., 2016, Mullender-Wijnsma, 2016). In a province where children are performing below average academically, we have an opportunity to make a widespread and positive impact on our children’s academic achievement by using simple but effective methods to increase physical activity within the school day. In so doing, we also have the opportunity to increase the happiness of our children *and* staff in schools.

Remember that PISA data on Norwegian children’s high sense of belonging in school that was discussed at the beginning of this report? Or the statistic that shows that despite spending the shortest amount of time per week doing academic lessons, Norwegian adolescents score above average in mathematics, reading and science literacy (OECD, 2015)? While it is beyond the scope of this research, it may not be a huge stretch to suggest that the innovative ways in which Norwegian schools are working to increase and include physical activity within the school setting play a considerable role in these PISA results.

This research has demonstrated the positive effects on classroom management that physically active teaching methods can have. Three years after the implementation of the physically active teaching and learning methods developed through the Active Smarter Kids (ASK) project, teachers at Tiurleiken School in Oslo have reported significant improvements in their students’ overall mood, intraclass collaboration and communication levels, and students’ willingness to engage in lessons and with each other. They have seen such dramatic improvements in these crucial elements of classroom management, that they cannot imagine teaching without using ASK methods. As Karoline Sem Nilsen reported: “We can’t stop teaching FLA!” And they’re accomplishing this while meeting national curriculum guidelines.

With a little investment in professional development and preparation up front, Nova Scotian schools could do the same. We cannot and should not underestimate the power and potential behind the seemingly simple task of teaching lessons combined with physical activity. As physical activity and educational

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professionals in Nova Scotia, we hold the power to positively change the present and future of this province.

Do we want to continue down the road we are currently on? Or do we want to take the turn that leads to happier, healthier children, more inclusive, collaborative and inspiring classrooms, and higher academic achievement? Let's take the latter. For the sake of this generation, and those to come.



Outdoor School Day, Berger School, Akershus

Acknowledgements

I would like to express my heartfelt gratitude to everyone who went out of their way to support the creation of this report. I have never had the pleasure of working on a project that has been so enthusiastically embraced by everyone who has come across its path. The momentum around this work has been contagious, and it seems to be carrying me along with it.

I'll start with the people at the Nova Scotia Department of Communities, Culture and Heritage. To Debby Smith, for sharing my vision and believing in the transformative power of looking beyond our boundaries for inspiration and collaboration. To Anna Haanstra, for being so grounded in methods and process and so willing to jump in head-first when the opportunity arose.

To Solveig Sigstad at the Oslo Education Authority who organized my school visits, thank you for steering me in the right direction, and for encouraging me in my Norwegian lessons.

To all the administrative and teaching staff at the schools I visited in Oslo and Akershus, thank you for sharing your passion for education and healthy learning with me. It is your insights and experiences that colour this report and inspire me to keep moving with this work.

To the administrative and teaching staff at schools from across the South Shore of Nova Scotia, thank you for your contributions and insights about the Nova Scotia context.

To GK Resaland, thank you for your invaluable feedback on ASK methods and your willingness to collaborate from across the Atlantic.

To my readers Kara Turner and Susan Atkinson, thank you for sharing your love of language and being outdoors.

To Council and Staff at the Municipality of the District of Lunenburg, thank you for supporting the vision behind this work. To Trudy Payne and my other departmental colleagues, thanks for listening to me wax on and on about physical activity in schools, outdoor learning, and what is happening across the ocean.

To Donna Stephania, I don't know what I would have done without you, your fine-toothed comb, and eye for detail. I'm so glad that I ran into you on the street back in January. Long-live the Oxford Comma!

And finally, to all the children in Oslo and Akershus who so warmly and curiously welcomed the "scientist" from Canada into your lessons. Your joy and love for learning was infectious. Thank you from the bottom of my heart.

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