Outdoor Play and Learning (OPAL) in School Communities

Results from the Pilot Programming in Toronto

TransForm Laboratory of Transportation and Land Use Planning
School of Urban and Regional Planning, Ryerson University
Research Team

Raktim Mitra
Associate Professor, School of Urban and Regional Planning
Co-Director TransForm Lab
Ryerson University

Farzana Propa
Research Associate

Michelle Rowland
Graduate Research Assistant
TransForm Lab
School of Urban and Regional Planning
Ryerson University

Contact

Dr. Raktim Mitra
School of Urban and Regional Planning
105 Bond Street, Toronto, ON
M5B 1Y3
Email: raktim.mitra@ryerson.ca

April 2018

Funding for this research was provided by Earth Day Canada and The Lawson Foundation. Brenda Simon, Director of Play programs at Earth Day Canada, facilitated the implementation of this OPAL evaluation study, and provided feedback on the final report.
# Table of Contents

1 Executive Summary

4 Introduction
   Benefits of Outdoor Play in School Communities

7 The OPAL Pilot in Toronto
   OPAL Evaluation Research
   Survey Location and Data Collection

14 State of Outdoor Play in Toronto’s School Communities
   Baseline Surveys
   Children’s Play Conditions at Home / Outside of School
   State of Play at Toronto’s Public Schools

26 Impacts of OPAL Programming: Results from Key Informant Interviews
   School-Wide Benefits
   Benefits to Kindergarten Children
   OPAL Programming Challenges

30 Case Study: Chester Elementary School
   Changes in Lunch Play Duration
   Improved Wellbeing when Playing Outdoors

36 Summary and Next Steps
Executive Summary

Play is a right of every child, along with leisure and recreational activities. A growing body of research suggests that play has both immediate and long-term benefits to children’s health and wellbeing. Children should be able to experience play to the fullest in school environments.

Outdoor Play and Learning (OPAL) is a play provision training program that is designed to protect a child’s right to play, particularly at elementary schools. OPAL transforms attitudes to play provision, supervision and risk management. It encourages schools to use “loose parts” to enrich and diversify the play offering. Since the spring of 2016, Earth Day Canada (EDC) has been working closely with 6 school communities in the Toronto District School Board (TDSB) to adapt OPAL to Ontario.

A longitudinal evaluation of the OPAL pilot was designed using a mixed methods approach. The goals of this evaluation research are to (1) improve understanding of the benefits of such programming in enhancing children’s quality of play and wellbeing, and (2) provide insights that would improve larger scale program delivery at other Canadian school communities.

The study team collected baseline data in spring 2016 from 352 children in grades 4, 5 and 6. Follow-up surveys and key-informant interviews at some schools were conducted in 2017. Baseline data indicated that while most children were happy when playing outside, nearly 18% children were not happy with their outdoor play experiences at schools. Between 6% and 12% of children did not play outdoors during recess or lunch periods. The study identified generally high levels of parental support for outdoor play at the pilot schools, but children identified school play conditions (including the quality of play supervision, play equipment and play environment) to be moderate at best. This is an important topic that needs further attention, as we identified a statistical relationship between conditions for play and a child’s overall subjective wellbeing.

Interviews with OPAL champions at schools indicated that outdoor play has become more engaging, inclusive, and imaginative after the OPAL programming. OPAL playgrounds have also created opportunities for children to be more physically active during the recess periods. Especially at the kindergarten level, teachers have noticed improved opportunities to develop motor skills during recess periods, and improved focus and classroom behaviour.

At the time of writing this report, Chester Elementary School is the only one among the 6 pilot schools where children in grades 4 to 6 have had sufficient regular, consistent exposure to improved play conditions. Our follow-up surveys revealed that more children at Chester Elementary School are playing outdoors during lunch, and for a longer period of time. More children are happier when playing outdoors, and more children self-reported higher overall subjective wellbeing. The key informants also discussed several challenges to the implementation and long-term sustainability of OPAL programming in Toronto. Ensuring adequate training to lunch supervisors and caregivers, theft and vandalism of play equipment, and replenishment of loose materials on a regular basis were identified as top concerns.

As the 5 other pilot schools intend to move towards whole school rollout of OPAL in the following year, we wish to go back to these schools to collect further follow-up data, in order to identify both short- and long-term benefits of OPAL. Our research findings provide valuable knowledge that will inform and encourage larger-scale play programming interventions across Ontario and Canada.
Introduction

Earth Day Canada (EDC) is delivering the Outdoor Play and Learning (OPAL) pilot program in 6 diverse school communities within the Toronto District School Board (TDSB). OPAL is a play provision training program that is designed to protect a child’s right to play, particularly at elementary schools, with a goal of transforming attitudes to play provision, supervision and risk management.

Since the spring of 2016, EDC has been working closely with each school community to develop an outdoor play policy, strategy and implementation plan for recess, lunch hour, afterschool and for play-based outdoor learning in full-day kindergarten (FDK). The programming allows children to experience enriched and diverse play opportunities in a supervisory environment that supports self-directed play with loose parts. By allowing children to assess and take risks without excessive adult interference, children are able to both indicate and expand their capacities, and in turn, self-responsibility. Supervising staff have the opportunity to move from policing to providing and are able to observe the children’s unfolding capacities with pleasure.

Of the pilot schools, 5 elected to begin play program implementation within their FDK programs, eventually rolling out the programming to all elementary school grades while 1 school elected to begin with grades 1 to 5.

Lessons learned from the OPAL Pilot will improve our understanding of the benefits of such programming in enhancing children’s quality of play and wellbeing, and provide insights that would improve larger scale program delivery at other Canadian school communities.

As part of this pilot project, researchers from Ryerson University have designed and implemented an evaluation study to:

(1) understand the current state of outdoor play at Toronto’s public schools; and

(2) explore associations between outdoor play conditions at school and a child’s health and wellbeing.

The OPAL evaluation research began in the spring of 2016, before OPAL programming rolled out in the 6 TDSB schools. The evaluation research is currently ongoing and is expected to continue through 2018.

Schools and school grounds are places where almost all children in Canada spend from 6 -10 hours a day. EDC estimates that from kindergarten to grade 6, recess and lunch hour comprise about 1.4 years of a child’s elementary school life (Earth Day Canada, 2017). However, in the past decades, educational reforms and an emphasis on over-engineered “safe” playgrounds across North America have arguably led to a decline in the quality and quantity of time that children have for self-directed play before, during and after the school day. David Elkind adds, “these days play seems superfluous, that play is for slackers, that if kids must play, they should at least learn something while they are doing it” (Elkind, 2008). Recess is often taken away as a disciplinary measure and frequently cancelled due to mildly adverse weather conditions.

An emerging body of literature suggests that play deprivation has become an urgent issue, impacting children’s physical health, social and emotional wellbeing and even learning. Improved recess helps children remain on-task longer and participate more actively in the classroom (Madsen et al., 2011). Pellegrini and Holmes (2006) found that by reducing break times at school, school administrators and teachers are also reducing the only opportunity students have to recharge and socialize. Researchers also argue that unstructured breaks have the potential to improve cognitive performance (Pellegrini, 2008).

Many schools are investing in getting children outside for play-based learning (Ontario Ministry of Education, 2009). New initiatives such as
naturalized playgrounds, new playground equipment, outdoor classrooms and enhanced FDK spaces are being implemented in response to the explicit requirement for outdoor play (Council of Ministers of Education Canada, 2012).

The results from this evaluation study will help EDC in validating the hypothesized benefits of the OPAL programming and recognize its weaknesses, and secure further support from the government and school boards in rolling out this play model intervention in schools across the country. More broadly, the findings will offer new knowledge in understanding school play conditions and contribute to building stronger Canadian evidence in the play policy intervention realm.

This report outlines the research methods, ongoing data collection efforts, and key findings from the baseline data describing the state of play in the 6 Toronto’s public schools. We have also reported results relating to short-term impacts of the OPAL programming, using qualitative data collected from school staff/champions, and survey data collected at 1 school community (Chester Elementary School), which was the first among the 6 pilot schools to achieve full-school OPAL implementation by the fall of 2017.
There are many types of play, but all of them share the same basic definition: play is freely chosen, self-directed, intrinsically motivated and spontaneous (Faulkner et al., 2015). The right to play and leisure is enshrined in Article 31 of the U.N. Convention on Rights of the Child, 1989. Play is a natural childhood instinct that is enjoyable and crucial to learning and development (Gleave and Cole-Hamilton, 2012). An emerging research has provided evidence suggesting that play has both immediate and long-term benefits to children’s health and wellbeing.

The key benefits of play include:

- **Physical benefits:** helps build stronger muscle, bones and lung capacity (Lindon, 2007); develops motor functioning and movement skills; contributes to physical activity and more active children (Cooper et al., 2010; Faulkner et al., 2015)

- **Social benefits:** provides opportunities to develop friendship, sense of social identity and well-being (Baines et al., 2001; Gibson et al., 2011); improves school and classroom behaviour (Pellegrini and Bohn, 2005); enhances the ability to share, communicate and work in teams (Ginsburg, 2007).

- **Emotional benefits:** enables enjoyment; prevents boredom; children learn to express painful feelings and overcome trauma (Hirschland, 2009).

- **Cognitive development:** offers different types of learning opportunities in a school day (Jarrett et al., 1998; Pellegrini and Davis, 1993) including spatial and mathematical learning, language development, and creativity (Coalter and Taylor, 2001).

School, school grounds and play conditions serve an important purpose in children’s lives and can have an essential influence on their health and wellbeing, both in the short- and long-term. School is the only place where children consistently assemble and are able to find outdoor active social time. The OPAL program offers an opportunity to improve play by transforming attitudes to the spontaneous, random and often risky nature of play. It takes a whole-school approach to improving play, by working with a Lead Team within each school to address risk aversion, and developing a positive approach to play and an implementation plan. It encourages schools to use “loose parts” to enrich and diversify the play offering. The program was originally developed to address anxious unhappy behaviour, bullying and poor quality of play in U.K. schoolyards. OPAL seeks to improve the social and collaborative life of the entire school, increasing cooperation, sense of agency, inclusion and pleasure. Teachers report improved classroom focus of task behaviours and diminished bullying, and increased cooperation and self-responsibility (Lester et al., 2012).

Benefits of Outdoor Play in School Communities

Source: Earth Day Canada, 2017
The OPAL Pilot in Toronto
OPAL Evaluation Research

A longitudinal evaluation of the OPAL Pilot project is being conducted using a mixed methods approach. The research efforts include the collection of quantitative and qualitative data over a period of more than two years. The quantitative data (survey) is being collected in two phases: before the implementation of OPAL programming (baseline surveys) and, after the implementation of OPAL programming (follow-up surveys). Post-implementation in-depth interviews of key individuals involved in program delivery at each of these schools (ie. OPAL champions) are providing further insights into the benefits of the programming and challenges to program delivery.

To date, 1 of the 6 pilot schools has completed the post-implementation surveys. Interviews were conducted at 3 schools. The other schools will be studied when program implementation has reached grades 4 to 6, allowing the study team to survey these students.

OPAL Evaluation Timeline

OPAL evaluation research began in the fall of 2015. Research Ethics approval from both Ryerson University’s Research Ethics Board (REB) and TDSB’s External Research Review Committee (ERRC) were secured in winter 2016. In the spring of 2016, all researchers involved in this project obtained police clearance and vulnerability sector clearance in order to be able to work in TDSB schools.

Figure 1 provides an overview of the research timeline. Baseline data collection began in the summer of 2016 when researchers from Ryerson University went into 6 participating schools to survey children in grades 4, 5 and 6 in their classrooms. A total of 352 surveys were collected.

During fall of 2016, some preliminary data analysis was conducted in order to better understand the state of play in TDSB schools before the OPAL pilot implementation. In the spring of 2017 an abstract was submitted to International Play Association’s (IPA) Triennial Conference to present key findings from the baseline survey.

In order to assess the impacts of OPAL programming and changes to play conditions in school grounds, follow-up surveys and key-informant interviews are being conducted at schools post OPAL implementation. The follow-up data collection (both survey and interviews) begun in the fall of 2017, and will continue through the rest of 2018, subject to the availability of additional funding.


In January, 2018, findings from the research were presented to key stakeholders including TDSB representatives, teachers, and community members at the OPAL Symposium in Toronto. Further analysis with the baseline data is currently being conducted, which will lead to additional scholarly dissemination including a Major Research Paper (MRP) at Ryerson University.
Survey pilot tested

Data collection in 6 schools
** 352 surveys

Baseline data entry, data cleaning and quality check

Preliminary data analysis

IPA Conference Paper in Calgary

Data collection in 6 schools (ongoing)
Interviews (ongoing)

Presentation of research finding at OPAL Symposium in Toronto

Report to Lawson Foundation and EDC

Figure 1: Timeline of OPAL Research

Source: Earth Day Canada, 2016
Survey Location and Data Collection

OPAL is being piloted in 6 TDSB schools, located across Toronto. The pilot schools represent the socio-economic and built environment diversity of the city: from inner-urban neighbourhoods to suburban neighbourhoods, and from low-income to high-income neighbourhoods (Figure: 2). These schools are:

• Elmlea Junior School
• Blake Street Public School
• Alexmuir Junior Public School
• Lord Lansdowne Junior & Senior Public School, and Da Vinci School
• Chester Elementary School
• Crescent Town School

Figure 2: School locations in the City of Toronto
Student Surveys

A questionnaire survey was designed to ensure that it is child friendly and easily understood by children between the age of 9 to 12 years. The survey was piloted before data collection in the spring of 2016. Necessary adjustments were made after piloting.

The survey included questions focusing on children’s experiences with outdoor play conditions at school, including adult supervision, play material, safety and excitement. Self-reported data on satisfaction with outdoor play (i.e., happiness) and subjective wellbeing was also collected.

In addition, children filled out a play diary where they listed the types of play they were engaged in during outdoor playtimes (before/after school, recesses and lunch times) on the day before the date of the survey, as well as the duration of outdoor play during each of these recesses periods.

All students from grade 4, 5 and 6 in these 6 schools were invited to participate in the baseline survey. All surveys were completed in one day at each school.

Post-implementation follow-up surveys are being conducted at schools as they implement a full-school rollout of OPAL when students were exposed to the opportunities presented by the program for at least a few months.

The follow-up survey repeats the same questions relating to outdoor play, to enable comparison and an evaluation of the changes or improvements in play conditions and play-related outcomes after the OPAL programming. Since Chester Elementary School is the 1 among the 6 pilot schools where children in grades 4 to 6 have had sufficient regular, consistent exposure to improved play conditions, we conducted follow-up surveys in this school, in summer 2017. 41 surveys were collected at Chester Elementary School. Further follow-up surveys in the remaining 5 schools will be conducted later in 2018, subject to availability of funding when full school roll-out of the OPAL play program has been achieved for a period of time sufficient to impact the children’s experience of play at their schools.

Table 1: OPAL Survey Implementation Details

<table>
<thead>
<tr>
<th>School</th>
<th>Survey Date</th>
<th>Grades</th>
<th>No. of students completing the survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elmlea Junior School</td>
<td>June 1, 2016</td>
<td>4, 5</td>
<td>57</td>
</tr>
<tr>
<td>Blake Street Public School</td>
<td>June 2, 2016</td>
<td>4, 5, 6</td>
<td>46</td>
</tr>
<tr>
<td>Alexmuir Junior Public School</td>
<td>June 3, 2016</td>
<td>4, 5, 6</td>
<td>113</td>
</tr>
<tr>
<td>Lord Lansdowne Junior &amp; Senior Public School</td>
<td>June 6, 2016</td>
<td>4, 5, 6</td>
<td>28</td>
</tr>
<tr>
<td>Chester Elementary School</td>
<td>June 8, 2016</td>
<td>4, 5</td>
<td>88</td>
</tr>
<tr>
<td>Crescent Town</td>
<td>June 15, 2016</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Total 352</strong></td>
</tr>
</tbody>
</table>

Total 41

Table 1: OPAL Survey Implementation Details

<table>
<thead>
<tr>
<th>School</th>
<th>Survey Date</th>
<th>Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chester Elementary School</td>
<td>June 21, 2017</td>
<td>4, 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Key Informant Interviews with OPAL Champions

In addition to the student surveys, our evaluation plan includes conducting in-depth semi-structured interviews with OPAL champions. These interviews will help us understand:

• The impacts of OPAL on students of all ages within TDSB schools, and community benefits.

• The impact of OPAL on FDK teachers and children, who could not be surveyed because of their young age.

• Key lessons learned from the pilot program implementation, which can inform future larger-scale rollout or OPAL or similar programming in other Canadian schools.

In fall, 2017 key informant interviews were conducted at the 3 schools that had made the most progress towards completing full school OPAL implementation. 3 champions from each school, including 1 FDK teacher, participated in the interviews. As of today, 9 OPAL Champions have been interviewed at 3 schools. More interviews will be conducted in 2018.

Who are OPAL champions?

Lead team of teachers, parents, administrators, daycare staff, and/or caretakers directly involved in OPAL implementation in each school.
State of Outdoor Play in Toronto’s School Communities
Baseline Surveys

OPAL baseline survey was completed by 352 children from grade 4, 5 and 6 in 6 participating TDSB schools. Children self-reported their play conditions both at school and at home/outside of school, including adult supervision, play materials, and the quality of the play environment such as safety and excitement. Self-reported data on satisfaction with outdoor play (i.e., happiness) and subjective wellbeing was also collected.

In this section we report key findings in these areas. We also discuss the relationship between outdoor play conditions and children’s happiness/self-reported subjective wellbeing.

55% of children who responded to the survey were Girls and 45% were Boys.

47% children were in grade 4, 36% in grade 5 and 17% were in grade 6.

Most (82%) children shared their households with other sibling(s) with an average household size being 5.

English was the main language spoken in most (52%) households. Among other languages, Chinese languages (both Cantonese and Mandarin) was spoken in 26% households while Hindi/Urdu/Pashtu were the main languages in 5% households.

Source: Earth Day Canada, 2017
Children’s Play Conditions at Home/Outside of School

Parental Attitude Toward Outdoor Play

Parents of children attending public elementary schools in Toronto are generally supportive of outdoor play. Figure 3 shows that 74% parents always or sometimes encourage them to play outdoors. On the other hand, 6% parents discourage them to play outdoors.

Preferred Activities When Not in School

In contrast to what they actually do when they are not in school, when asked about what they WOULD RATHER do, half of the children (50%) said that they would play outside with friends. More than a quarter (28%) expressed a preference to play on a computer or gaming device (figure 4).

Children’s Activities When Not in School

Children typically engage in a number of different activities when they are not in school. Playing in a park or schoolyard with friends (56%) and playing games (53%) on computers or other devices are the two top activities that children would do while they are not in school. Many children also spend time watching TV (47%), playing inside (42%) or in the backyard (35%), or participating in organized sports/activities with instructors (36%).

About 13% of the children sadly reported that they play alone in the park or schoolyard.

Figure 3: Parental Attitude Towards Outdoor Play

Figure 4: Children’s Preferred Activities When They are not in School
State of Play at Toronto’s Public Schools

In North America, children spend more than thirty hours a week in schools. Recess and lunch periods can allow significant time (approximately 7.5 hours a week in elementary schools) for children to engage in active play. When a child does not or cannot play outdoors during school breaks, it represents a missed opportunity to enhance their physical, psychological and social well-being (BTHA 2011; Ginsburg 2007).

Duration of Outdoor Play While in School

Our baseline data revealed that while most children play outdoors during recess and lunchtime, engaging in either active or non-active play, some reported that they did not play outdoors at all during the school day (figure 5).

During Recesses

- 86% of children played outdoor for between 10 and 20 minutes.
- 7% did not play or did not play outdoor, at all.

Figure 5: Play Duration During Recess and Lunch Periods
During Lunch Time

- 70% of children played outdoor for more than 20 minutes.
- 12% did not play or did not play outdoor, at all.

Less than half (44%) of grade 4-6 children identified their schoolyards as favourite places to play, and another 26% would rather play in other natural or human-built outdoor areas within the school. Sadly, about 1 in every 5 children (18%) did not have a favourite place to play at their schools (Figure 6). Improved conditions for outdoor play in schoolyards may reverse this pattern and encourage more children to use these spaces.

Although recess time is legally mandated in Ontario schools, our data indicates that some students did not or could not take this opportunity to play outdoors during recess periods. It is possible that some students did not participate in outdoor play due to unfavourable play conditions, or some might have been held back from going outdoors to play.

While the causal reasons could not be conclusively determined from our baseline survey, our data suggests that current schoolyards at TDSB schools may not be perceived as exciting by children attending those schools.

Source: Earth Day Canada, 2016
Figure 6: Favourite Places to Play when at School

Source: Earth Day Canada, 2016
Play Conditions at School

Generally, play condition at an outdoor place can be described by means of the quality of adult supervision, play equipment and play environment, including safety and excitement. OPAL surveys included 6 questions focusing on play conditions at the 6 pilot schools.

Under a set of enhanced play conditions, one would expect that a high percentage of children would ALWAYS find the school playground to be safe and exciting, would ALWAYS have access to a diversity of play materials available all year round, and their outdoor play would ALWAYS be led by children and adults would play a facilitating rather than supervisory role.

OPAL programming aims to enhance play conditions and children’s outdoor play experience by shifting attitudes to play, risk and adult supervision towards a more child-led experience.

- 48% children thought that adults ALWAYS help them to achieve great play time
- 50% children thought that they ALWAYS have plenty of things to play with
- 54% Children ALWAYS feel safe while playing in school

Highest Scoring Conditions (Always)

- 47% children were SOMETIMES allowed to play outdoors without adult supervision
- 50% were SOMETIMES able to play in the schoolyard all year long
- 49% thought that they SOMETIMES had exciting outdoor playtime

Middle Scoring Conditions (Sometimes)

- 16% of the children thought they were NEVER allowed to play outdoors without adult supervision
- 15% thought that adults NEVER help them to achieve great play time
- 8% thought they NEVER had plenty of things to play with

Lowest Scoring Conditions (Never)

Figure 7: Play Conditions at OPAL Pilot Schools
Despite arguably moderate play conditions, the majority of the children reported that there is nothing that stops them from playing outdoors (55%), while another 12% thought that they do not get enough time to play outdoors (figure 8). Some thought their parents discourage them (11%) and nearly 1 in every 10 children (9%) reported that their teachers/school staff do not allow them to play outdoors.

Figure 8 also shows that 28% of children identified other factors as barriers to outdoor play at school. Among these other factors, weather conditions, school duties or club involvement, health conditions, and potential risk to play safety from other older children were listed as some of the common barriers to outdoor play at school.

Figure 8: Barriers to Outdoor Play at School

- 55% Nothing stops me
- 11% Parents/guardians do not allow me
- 9% Teachers/school staff do not allow me
- 12% Not enough time to play before/after school
- 2% I do not like to play outside at school
- 3% I cannot play because of some health issues or a physical limitation
- 28% Others

Some of the grade 6 boys
I was injured
I hate hot weather
If it rains
Allergies
Sometimes I have a club
I have to help within the school
(Other reasons a child may not play)
Children’s Wellbeing

The importance of schools in a child’s life was evident from the surveys, where 55% of the surveyed children indicated that schools are where they find friends, more than at parks (24%) or during organized sports/activities (4%) (figure 9). What is alarming, however, is the finding that 16% of all children indicated that they typically find their friends online, and another 1% did not have any friends. Increasing opportunities for play at school clearly has the potential to improve children’s social and subjective wellbeing by creating opportunities to make friends and by facilitating the production and maintenance of social capital.

Previous research has identified happiness as a broad indicator of a child’s subjective wellbeing (Koch, 2018). Our surveys revealed that 82% of the grade 4-6 children at these 6 TDSB schools were either very happy or happy when they play outdoors during school time. However, at the same time, nearly 1 in every 5 students (18%) indicated that they were not happy (figure 10).

To assess children’s subjective wellbeing more closely, the OPAL survey asked 10 questions related to various aspects of well-being. The students responded with a “Yes” (1) or “No” (0), and unweighted sum of these 10 scores for each child was calculated to represent their subjective wellbeing. The baseline data suggests that 50% children scored above 8 on this wellbeing scale; 42% scored 6 and above, and remaining 8% scored below 6 (figure 11).
Self Reported Wellbeing Indicators

1. I am strong and active.
2. I enjoy trying things that are new.
3. I am not afraid to take risks.
4. Most things I do turn out well.
5. I am happy most of the time.
6. I can easily concentrate on things that we do in the classroom.
7. I have good friends in my school and we spend a lot of time together.
8. I enjoy meeting with or talking to new people.
9. I really like my school.
10. I feel good about who I am and what I can do.

Figure 11: Self-reported Subjective Wellbeing Scores

Source: Earth Day Canada, 2017
In order to further examine the association between school play conditions and children’s subjective wellbeing, further analysis was carried out. We estimated an ordered logistic regression model to statistically examine the correlation between play conditions and the subjective wellbeing score for each child.

Model results, shown in Table 2, indicate that, after controlling for variations in a child’s age, gender, and household composition, their overall subjective wellbeing was statistically associated with the following play conditions:

- Parental encouragement towards outdoor play (Strong Association)
- Exciting playtime (Strong Association)
- Many things to play with/ play equipment (Weak Association)

OPAL introduced changes to supervision practices and play materials, allowing children a broader range of choices in a permissive environment. It is presumed that OPAL makes playtimes more exciting and brings about positive changes in adult attitudes, making both parents and teachers more encouraging towards outdoor unstructured play.

<table>
<thead>
<tr>
<th>Potential factors that influence subjective wellbeing</th>
<th>Statistical Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental encouragement towards outdoor play</td>
<td>OR 2.08 (1.19-3.66)</td>
</tr>
<tr>
<td>Allowed to play alone or with friends</td>
<td>No association</td>
</tr>
<tr>
<td>Adults help to have a great play time</td>
<td>No association</td>
</tr>
<tr>
<td>Play in school yard all year long</td>
<td>No association</td>
</tr>
<tr>
<td>Plenty of things to play with/ make up a game/ build something</td>
<td>OR 1.55 (0.95-2.51)</td>
</tr>
<tr>
<td>Very exciting outdoor play</td>
<td>OR 2.03 (1.23-3.37)</td>
</tr>
<tr>
<td>Feel safe while playing</td>
<td>No association</td>
</tr>
</tbody>
</table>

NOTE: Statistical associations are presented by means of odds ratios (OR) and 95% confidence intervals. The OR indicates the odds of demonstrating a higher level of subjective wellbeing, due to a change in a particular play condition, when all other variations are held constant.
Impacts of OPAL Programming: Findings from Key Informant Interviews
OPAL Champions at 3 OPAL pilot schools (Chester Elementary, Lord Lansdowne and Blake Junior) were interviewed in the fall of 2017. In these in-depth interviews OPAL Champions described different aspects of OPAL as a play intervention. They revealed the changes that OPAL had brought into their schools, it’s impacts on FDK children, older children and on the communities. The champions also discussed implementation challenges and scope for further improvements. In this section, we summarize the findings from these 9 interviews.

Changes in Play Behaviour and Attitudes

OPAL champions confirmed that school playground has become more interesting after OPAL programming. Children are able to find things that interest them, and they take turns in building, testing, role-playing, and organizing themselves around new opportunities. Under-used or unused parts of the school ground are now used more frequently after the implementation of OPAL.

“really changed the way the space is used…….. The soccer players, the cats, the tires- they have to figure out how to use the space [together]…”

Mixed age and gender play has also become more common. Children enjoy more freedom in the playground to choose what they want to do.

“Some grade 2’s and grade 4’s playing together. Whereas, if it was a soccer game, the grade 4s would be so much better and the grade 2s would feel very upset or loose or there will be fight.”

The OPAL champions indicated that children are now more engaged and happier when they play outdoors and they want more OPAL materials to play with.

“I just see them so happily engaged.”

Children are also encouraged to play outdoors in all weather conditions such as, drizzling rain and snow(except for extreme conditions). This change in attitude not only helps grow resiliency in children, but it also allows them to get fresh air and be active most days, potentially contributing to short and long-term health benefits.

“there’s been more openness to be outside in different types of weather. Like, just get bundled up and go. A little bit of light rain is fine.”

Positive changes in playground behaviour have been noticed, including fewer reports of fighting, less bullying, and fewer visits to the Principal’s office.

“I would say that there has been a significant reduction in referrals to the office for fighting and sort of, disputation.”

Increased Play Time and Physical Activity

OPAL champions also confirmed that children are playing longer now than before, after OPAL-related loose part play materials were introduced to the playgrounds. OPAL programming has created more opportunities for children to explore and experiment with different OPAL elements, and as a result, be active during their recess periods.

“kids are out and moving around. ..... more than they might have been before. They would be lifting things and carrying things; taking this here and taking it there. They wouldn’t have done that before.”

Improved Communication, Negotiation and Risk Management Skills

OPAL champions pointed out that while playing with OPAL play materials, children construct and build new things. OPAL has created opportunities to use play materials in “non-traditional” ways to invent their own imaginative world or games. Champions note that children are developing their communication, negotiation and risk
assessment skills.

“They talk very thoughtfully about what they try to do, what didn’t work and what they changed… So it’s really that sense of plasticity that I hear, rather than, this is mine and you can’t have mine. It’s really about negotiating, the idea of negotiating and talking through design problem…”

Teachers also highlighted that loose parts from the OPAL programs are helping with exploring different science concepts, such as experimenting with the laws of physics etc.

“So, there’s, sort of, experimenting with the physics. You know, how fast can I roll it? Can I stack it so that the slider is steeper?”

Benefits to Kindergarten Children

In addition to providing broad insights into the general benefits to all students, the key informant interviews also offered an opportunity to understand how the OPAL programming benefited FDK students, who could not be surveyed directly due to their young age. In our interviews, FDK teachers highlighted several improvements that have likely occurred after the implementation of OPAL play interventions.

Teachers have noticed improved opportunities to develop a child’s motor skills; they indicated that Kindergarten children can potentially acquire motor skills more easily when playing with loose and flexible OPAL play materials.

FDK children are now able to focus/ behave well in the classroom after playing outside with OPAL materials. Kindergarten teachers also noticed that children easily fulfil their required academic or developmental milestones through OPAL.

“I’m already seeing like a behavioural change. When we are out for 2-3 hours’ it was really great, you know. When we did come in, they could really focus on [in-class activities]”.

OPAL Programming Challenges

One of the key goals of our evaluation study was to identify challenges to program implementation and the long-term sustainability of the OPAL play programming. Interviews conducted with OPAL champions at several schools, allowed us to better understand their experiences relating to the implementation and day-to-day operation of these “new” play principles. These discussions also highlighted several challenges faced by the pilot schools.

Implementation Challenges

At some schools, lunchtime supervisory staff changes very frequently. Many a times, inexperienced staff, who sometimes are not OPAL-trained, supervise the longest period of
time when children play with OPAL materials. As a result, children may not get the fullest opportunity and freedom to experience OPAL at the desired level.

Some challenges also remain with regard to improving parental/caregiver attitudes to outdoor play supervision. OPAL champions pointed out that in most cases, parents attended OPAL information sessions, while nannies or other caregivers often bring and supervise children in the playground. As a result, there often remains a communication and information gap that may affect the implementation of OPAL’s play-risk supervision.

**Operational Challenges**

OPAL champions highlighted some major challenges that affect OPAL’s day-to-day operation in schools. For example in some schools, theft and vandalism are a regular occurrence. Regardless of whether OPAL materials are kept locked in the storage unit or kept outside, they have often been subject to theft or vandalism. Staff found OPAL play materials to have been thrown outside, stolen, destroyed and even burnt. A comprehensive community consultation and more engagement of the broader school community with OPAL may reduce this issue, according to OPAL champions.

Replenishing loose parts on a regular basis is also a major challenge for staff, which may affect long term sustainability of OPAL programming implementation. It is often hard to find appropriate loose parts in enough quantity; it is also difficult to transport those materials especially in public transit or in smaller vehicles from their sources to school grounds. OPAL Champions suggested establishing a loose part delivery system to make replenishment of loose parts easier.

Among other operational challenges, not having proper storage facilities was one that was frequently cited. With the full rollout of OPAL programming, this challenge is likely to be mitigated.

School authorities are also working to address some of the related challenges that would enhance student experiences and outcomes relating to the OPAL programming. One common concern is when children do not come to school dressed according to the weather conditions, limiting their ability to go out and enjoy outdoor play with loose parts for an extended period of time. Some schools are trying to address this problem with measures such as creating a clothing bank.
Case Study: Chester Elementary School
Among the 6 OPAL pilot schools, Chester Elementary School was the first to roll out a school-wide OPAL implementation starting in fall, 2016. School-wide implementation means that the school has embedded play policies and strategies into its day-to-day operations. Chester Elementary School developed their outdoor play policy over the 2016/2017 academic year as an output of their OPAL training with EDC. The “OPAL playground” was initially rolled out in 2016/2017 for grades 1 to 5 children, and in 2017/2018, OPAL expanded into FDK. By 2018, all children in the school were experiencing enriched and diversified play opportunities as an outcome of the OPAL training. While FDK children enjoy enriched play-based learning as part of their curriculum, students in grades 1 to 5 enjoy enriched outdoor play during recess and lunch hour. The school confidently adopted the “loose parts” toolkit, leaving some items outside even after school. As a result, other children in the community sometimes have access to these items in the afternoon.

Children at Chester Elementary School have had the longest exposure to the OPAL program, and opportunities to play creatively with the enriched elements provided by the adoption of OPAL principles at the school. Students at Chester experienced OPAL, for a period that is long enough to produce measurable changes in play behaviour and related outcomes.

Surveys were conducted at Chester Elementary School in June 2017, and the results demonstrate some early changes, emphasizing the importance of play programming such as OPAL in improving students’ physical, social and psychological health and wellbeing. Some of the key findings are reported here. We have compared the baseline survey data with the follow-up surveys to identify and understand the potential impact of the OPAL pilot project in changing children’s play behaviour and wellbeing.

Changes in Lunch Play Duration

Our follow-up surveys revealed that more children at Chester Elementary School are playing outdoors during lunch, for a longer period of time. In 2016, 84% of children in grades 4-5 would spend more than 20 minutes playing outdoors during lunch. By 2017 after OPAL implementation, 90% children were spending 20 minutes or more playing outdoors (Figure 12).

Improved play-time is an indication of a greater interest in outdoor play, at least part of which may be the direct result of OPAL programming. More play-time is expected to contribute to children’s daily physical activity accumulation, and also create an opportunity to improve social and psychological wellbeing.
Figure 12: Changes in Lunch Period Play Duration

Source: Earth Day Canada, 2017
Improved Wellbeing when Playing Outdoors

Perhaps as a result of the improved play conditions, more children were happier when they played outdoors at school. In the follow-up survey, 63% children reported that they are very happy while playing outdoors in school; in comparison to only 44% children from our baseline survey who said that they were very happy (Figure 13).

Conversely, the percentage of unhappy children decreased by 7%, from 19% in 2016 (baseline year) to 12% in 2017 (follow-up), also indicating an overall improvement in their subjective wellbeing.

The key-informant interviews confirmed that school playground has become more interesting with OPAL than before. Children are able to find something that interests them, and they take turns in building things. Under-used or unused parts of the school ground are used more frequently after implementation of the OPAL programming.
Further exploration of the aggregated wellbeing score, where 10 represents the highest level and 0 represents the lowest level of a child’s wellbeing, reveals that a higher proportion of students reported higher wellbeing scores and a lower proportion of them reported lower

Figure 14: Changes in Subjective Wellbeing Score

Source: Earth Day Canada, 2017
Summary and Next Steps
Schools and school grounds are places where children in Canada spend between 6 and 10 hours a day, making them important places for play interventions. By enabling free, exciting and imaginative play during school, and by changing adults’ attitudes toward outdoor play and play supervision, school boards, educators and caregivers can create more opportunities for physical activity, as well as improved happiness and subjective wellbeing. Changing the conditions for outdoor play can be one way of facilitating changes in play behaviour.

Since 2016, Earth Day Canada (EDC) has been delivering the OPAL program to 6 public elementary schools in Toronto; these schools are located in diverse neighbourhoods. A research study was undertaken to conduct an exploratory analysis of children’s outdoor play behaviour and experiences and related wellbeing outcomes in Toronto’s school communities. Our ongoing efforts also aim to examine changes in play conditions at school, play behaviour and various health and wellbeing outcomes, after the OPAL pilot implementation, as well as to identify challenges to play program implementation and opportunities for further improvement.

Results from this evaluation study will be useful in confirming the hypothesized benefits of OPAL or similar play-interventions to children and school communities. As well, the results begin to identify key weaknesses relating to program implementation, providing valuable insights that will inform larger scale rollout of similar programming in schools across the country. More broadly, the findings from the evaluation research will offer new knowledge in understanding the relationship between school play conditions and a child’s wellbeing, and contribute to building stronger Canadian evidence in the area of play policy intervention.

Baseline data that was collected in spring of 2016 (i.e., before OPAL implementation) indicates that while most children were happy when playing outside, nearly 1 in every 5 children (18%) were not happy with their outdoor play experiences at schools. Between 6% and 12% of children did not play outdoors at all during recess or lunch periods. There is clearly more works to be done in increasing opportunities for play in school communities that improve children’s play experiences, and subsequently their physical, social and mental health and wellbeing.

Although the study identified generally high levels of parental support toward outdoor play at the pilot schools, children identified school play conditions (including the quality of play supervision, play equipment and play environment) to be moderate at best. This is an important topic that requires further attention, as we identified statistical relationship between play conditions and a child’s overall subjective wellbeing.

Due to the FDK focus indicating a cautious approach in 5 of the 6 pilot schools, EDC’s goals to achieve full implementation at all 6 pilot schools has been delayed. Once schools experienced the program through FDK rollout, they embraced the entirety of the program and are working towards disseminating OPAL principles and practices to all their teachers and making OPAL play enrichment available to all students. The delays relating to cautious adoption affected our ability to systematically evaluate the impacts of the programming and the implementation challenges in all 6 schools in 2017. Typically, one would expect a few months of exposure to improved play supervision, play environment and play conditions, for measurable behavioural change among children to be evident. However, with the exception of 1 of the OPAL pilot schools (i.e., Chester Elementary School), the other schools are still in the process of rolling out the full-school OPAL programming.

In this report, we have reported the results from the key-informant interviews conducted at 3 pilot schools, and from the follow-up surveys conducted among grade 4-5 students in Chester Elementary School.
The interview findings indicated that outdoor play has become more engaging, inclusive, imaginative after the OPAL play intervention. The programming has also created opportunities for children to remain physically active for longer periods of time, during the recess periods. Children are now doing better with playing cooperatively and negotiating with each other while playing. Mixed age and mixed gender play has also become more common. Among kindergarten students, improved focus and in-class behaviour, and improved opportunities for motor skill development was also reported.

Preliminary findings from the follow-up surveys (at Chester Elementary School) indicate that more children are happier when playing outdoors, compared to the pre-OPAL playground. With OPAL elements, they are playing outdoors longer than before, and more children reported higher overall wellbeing scores.

These changes in play attitudes and short-term outcomes have the potential to produce significant long-term benefits to children. For example, when a child is allowed to play outdoors in the OPAL playground every day of the school year, there is higher probability that they will grow up as an active adult. Similarly, inclusive and imaginative play can lead the way in building long lasting friendships and impact a child’s subjective well-being, even beyond school hours.

One of the key benefits of the OPAL programming in gaining community support is that the principles it promotes resonate with what adults of today have experienced as children. OPAL’s loose parts with its more natural and fluid setting are very familiar to parents/caregivers, regardless of the part of the world they came from. One community member commented: “…this reminds me of the things we would play with when we were children. Because we would just find things to do and find things to play with”. With such acceptance and familiarity, OPAL maybe instrumental in breaking social isolation, especially, in new immigrant dominant communities.

It is no surprise then that we have observed enthusiasm and excitement at all pilot schools about the OPAL implementation, and teachers and the school communities are as eager as we are to find out the impacts of this programming on children of all ages across various school environments. When these other pilot schools have fully implemented their play interventions and when children have had a few months of consistent exposure to this programming, we wish to go back to these schools to collect further follow-up data, in order to identify both the short- and long-term benefits of OPAL.

When completed, our research findings will provide valuable knowledge that would be generalizable to public elementary schools across Ontario and Canada, and we anticipate that these new insights would inform and encourage larger-scale play programming interventions, which are much needed for the health and wellbeing of our future citizens.
References


