

Evaluation of a Play-Based Recreation Program for Preschoolers: Municipal Recreation Policy Implications of Strathcona County's Love to Play Program

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CONTEXT

Free play provides a wide range of long-term physical, developmental, and mental health benefits for young children. Free play is not prescribed; it is player initiated and controlled, voluntary, spontaneous, intrinsically motivated, and child-directed.¹⁻⁴ The term *free play* applies to all forms of play: unstructured, physically active, creative, exploratory, etc. Compelling evidence shows that early childhood ‘free play’ experiences help children develop a holistic range of motor, social, cognitive, emotional regulation and coping skills; increased resiliency and physical fitness; improved problem solving, executive function, social skills, self-confidence, and speech; and a wide range of lifelong health, educational, and societal benefits.^{1, 4-13}

Despite these benefits, recent research indicates that there has been a substantial decline in children’s time spent in free play over the last 50 years,^{1, 14} including in educational settings. Due to urbanization, changing family demographics, and increasing use of technology, the nature of children’s physical and social environments has also changed over time. This means that play spaces and play experiences have become increasingly structured, organized and institutionalized. Similarly, early childhood education has also become more structured with increasing emphasis on academic content and school readiness.

As early childhood education environments represent a strategic opportunity to foster health- and development-promoting play activities among young children, this project focused on evaluating a preschool space and program that was designed with the intention of providing a rich sensory environment to foster free play among children aged 3-5 years. **The purpose of this study, *The Love To Play Project*, was to better understand how the design and program features of preschool spaces influence children’s free play behaviours in institutionalized**

program settings. This project was a partnership between the Strathcona County Recreation, Parks, and Culture department and researchers at the University of Alberta and MacEwan University.

The Love to Play Preschool Program and Space

Capitalizing on the importance and benefits of free play in preschool years, Strathcona County (SC) Recreation, Parks, and Culture department (RPC) invested CAD\$350,000 in creating Love to Play. Love to Play is a unique play-based preschool space and curriculum that was developed in response to local data showing 21% of rural Strathcona County children experience difficulty in developmental areas of communication, general knowledge, and emotional maturity.¹⁵ The Love to Play program is housed at Ardrossan Recreation Complex in rural Strathcona County, located in a renovated preschool space with a rich sensory environment that seeks to encourage free play. The objective of this preschool space and program is to enhance children's early developmental experiences by focusing on open-ended, play-based learning in a purposefully designed environment and curriculum (see appendix for photographs of the Love to Play space).

Taught by one lead and one assistant instructor, the Love to Play program (selected for this evaluation) runs once a week from 9 am to 3 pm over three sessions per year: Fall (September to November); Winter (January to March); and Spring (April to June). The program's maximum enrollment for each session is 20 children aged 3 to 5 years. Children in the Love to Play program have access to both a preschool room and the Love to Play room, which is a specialized space designed to foster free play activities (including a magnetic ball wall with loose parts for constructive, explorative, and creative play; airways (an interactive contraption that sucks in

scarves through a series of tubes and spits them out overhead to let them flutter down); and a giant 7-foot rocket for children to paint every day).

Two sites, also operated by SC RPC and with similar characteristics, were also included the study. These sites, which did not have a specialized free play space or curriculum, were included to help our team better uncover the extent of similarities and differences between conventional preschools and the free play-based preschool program and space. The selected comparison programs were the SC RPC preschool programs located in Kinsment Leisure Centre (KLC; a facility in urban Strathcona County) and Strathcona County Olympiette (SOC; a facility in rural Strathcona County). These two sites were selected as they offer programs with the same name and length, but without the unique play space and dedicated focus on the Love to Play philosophy. Children in these two comparison sites similarly had access to a preschool room and a mini-gym; however, the mini-gym contained more structured play equipment.

The Love to Play program and space became fully operational in September 2014, presenting a time-sensitive window to evaluate the impact of Strathcona County's investment into this early childhood play 'intervention'. As such, our study activities also began in September 2014 and ended in June 2015, following the school year calendar.

Purpose and Research Questions

This project sought to uncover whether and how the innovative design of the Love to Play preschool space and program fosters free play amongst preschool children and to explore the immediate health benefits realized from this innovation, relative to two conventional programs offered by the same provider. Specific research questions included:

- a. How did children play in the Love to Play or conventional preschool spaces? How were their play activities and behaviours influenced by the design of this free play

environment? What was the relationship between characteristics of the play environment and: (i) opportunities to engage actively in a variety of different kinds of play; (ii) the nature of social interactions in play; (iii) opportunities for challenge and risk taking; (iv) children's exercise of choice and control; (v) creative manipulation of space and loose parts (i.e., components of the play environment); and (vi) the duration of play episodes?

- b. What were the similarities and differences between children's play behaviours in the Love to Play space in comparison to a 'typical' preschool space, also in Strathcona County?
- c. What were staff/instructors' perceptions and experiences of children's play in the Love to Play preschool space and program and the two conventional preschools?
- d. What were parents' perceptions and experiences of children's play in the Love to Play preschool space and program and the two conventional preschools?
- e. Did the conditions of the Love to Play space support sustained episodes of child-directed free play?
- f. What was the impact of the Love to Play space on opportunities for different forms of free play (e.g., sociodramatic play, manipulative play, gross motor activities, etc)?

IMPLICATIONS

This project has practical implications for SC RPC in the (re)design of preschool spaces and (re)development of preschool programs offered by this department. Currently, SC RPC offers 34 registered preschool programs in five locations. The results of this evaluation provide critical

information to SC RPC regarding how their play-based curriculum and innovative play space influence children's unstructured play behaviours and, ultimately, early childhood development. Therefore, this research may inform SC RPC decision-makers about how to maximize optimal child development and wellbeing through dynamic play space and program design.

Research findings may also set the stage for the (re)development of other preschool spaces and programs within Strathcona County, as well as across the province and country. By contributing to building a foundation of evidence and a growing understanding of the qualities of effective programs and environments in support of play-based preschool settings, this research provides stakeholders locally (e.g., Strathcona County decision-makers, instructors, and parents), provincially (e.g., Alberta Recreation Parks Association), and nationally (e.g., via conference presentations and broad dissemination of project findings) with valuable information needed to advocate for and support the (re)development of more play-based space design and programming in institutional settings.

The findings of this evaluation also have implications for members of the research community interested in recreation, child health and development, and early childhood education. Our findings can help researchers better understand how play-based preschool spaces provide nurturing environments for non-parental care and the importance of having play-based designs in institutional settings. The results of this evaluation demonstrate how researchers and decision-makers can assess and document the value of providing enhanced play spaces for young children.

Thus far, our data have been presented at conferences; and an infographic summarizing the research activities and main findings was given to parents, instructors, and the Strathcona County community. Further knowledge translation of our study findings is forthcoming. Manuscripts are

currently in preparation for submission to peer-reviewed journals targeting a range of academic and practice audiences in public health, early childhood education, recreation, and physical activity. Participation in additional conferences, writing articles for community organization's newsletters, and engagement in community forums will be sought to reach a broader audience, including the general public.

In addition, our findings may be useful for Alberta-based play equipment manufacturers. Considering most of the play equipment developed for Canadian play spaces currently comes from the United States, project findings might strengthen partnerships between local play equipment manufacturers and SC RPC and other preschool settings throughout Alberta in the design of future play-based spaces and programs.

Finally, the findings of this project can also provide some guidance for community members and academics who are currently or are planning on conducting a collaborative research in partnership with one another. One of the components of this project aimed to evaluate the partnership process established between university and community (i.e., the knowledge users). To do so, the community partners and academic researchers engaged an arms-length evaluator who then invited the project team to share their thoughts about challenges faced, the expectations (un)met, and successes achieved throughout all stages of this research. Findings from this evaluation of the partnership process may be useful for community organizations, non-governmental organizations, government agencies, health services, universities, and research centres who may be considering joining efforts and sharing governance of a research project.

APPROACH: A Mosaic to Reveal the Big Picture

The Love to Play program and space and the two conventional preschools were evaluated over 9 months (September-November 2014 and January-June 2015). We used a multi-method approach (quantitative and qualitative) and multiple concurrent analyses to yield a holistic picture of Love to Play's strengths and weaknesses by comparing case and comparison sites.

This project was composed of three parts that reflect the different methods used to address the above research questions. Specifically, this project explored both parental and instructor perspectives (Part 1; Research Questions c & d), assessed preschool environments (Part 2; Research Questions a, b, e & f), and observed children's play behaviours (Part 3; Research Questions a, b, e & f), in comparison to two conventional preschool spaces.

Part 1: Interviews with Parents and Instructors

Part 1 involved before- and after-program semi-guided individual conversations with parents and instructors at the three preschools. Interviews were conducted in the first and last weeks of each of the Fall, Winter, and Spring sessions, as children enrolled in the program on a term-by-term basis. Parents of the children participating in programs at the case and comparison sites were purposively recruited through an information letter distributed by SC RPC partners and instructors.

The goal of the 'before' interviews with parents was to understand their perceptions of their children's play behaviours at home and in other settings (e.g., parks, playgrounds, preschool spaces), and their thoughts about the benefits of play. 'After' program interviews explored parents' perceptions of their children's play behaviours in the preschool setting, how play behaviour had changed since being involved in the preschool program, and the benefits of play.

Instructor interviews focused on their experiences of how children play in preschool spaces and their perceptions of benefits of play. For instructors of the Love to Play program, an additional set of questions was used to identify initial perceptions of the new free play-based curriculum and space. Post-interview questions explored instructors' experiences of how children play in the preschool space, and how children's play behaviours changed (or did not change) as they became accustomed to the play space. Love to Play's instructors were also asked about what did and did not work with the implementation of the new program and space, and were asked to discuss the process of transitioning to the new program.

During the 'before' interviews with parents and instructors, socio-demographic information was also collected; further, the instructor questionnaire included questions about length of employment with SC RPC, years of experience with childcare and preschool programs, and educational attainment.

Throughout the Fall, Winter, and Spring sessions, all six instructors (three lead and three assistant instructors) took part of both before- and after-interviews. Out of forty-four parents who were interviewed (response rate 75.9%), only 12 participated in both before- and after-interviews. Parent and instructor interviews lasted 45 and 60 minutes, respectively. Interviews were digitally recorded (with consent of the participant) and transcribed verbatim. Parents received a pass for a SC RPC facility (valued at \$20) for each interview in thanks for their participation; instructors were compensated for their time by RPC partners (as part of their regular hourly wage). Ethical approval for the Love to Play project was obtained from both the University of Alberta and MacEwan University Research Ethics Boards.

In-depth data analysis of the parent and instructor interviews was based on thematic content.¹⁶ Using a qualitative software (NVivo) for data organization, two researchers

independently coded the instructor interviews; codes were formulated through a line-by-line analysis of concepts identified in the data. Categories were developed through comparative analysis of codes and participants' use of codes. In a collective work with the research team, themes were then identified from the categories that emerge from the data and by comparing categories to concepts reported in the literature. This iterative process occurred independently for pre- and post-interviews, separated by case and comparison sites. With assistance of an experienced supervisory committee, a Master's student is continuing to analyze the parent interviews as part of her dissertation.

The breaking of the analysis into these sub-groups will reveal similarities and differences in themes among parents and instructors and between the case and comparison sites. Comparisons will also be made between the beliefs, perceptions, and play practices discussed at the beginning and end of the study period. Analysis will also be used to help verify if the modification in environment where children play leads to differences in terms of participation in free play between the case and comparison groups (before-after analysis).

Part 2: Space Evaluation

In Part 2, a systematic audit tool named Children's Physical Environment Rating Scale (CPERS) was used to evaluate the physical features and determine the quality of the three preschool spaces. CPERS employs observation and scoring methods to assess the quality of the physical environment in early childhood education settings.^{17, 18} This scientifically reliable, valid scale is divided into four main parts: (A) overall planning of the space; (B) architectural quality, including overall organization, image, and flow; (C) quality of indoor spaces where children play; and, (D) quality of outdoor spaces where children play.¹⁸ This project used only part C of the CPERS as the other sections are not applicable to an indoor recreation preschool program. In

part C, there are 54 evaluation items distributed into 5 subscales: each of these is assessed on a 5-point linear-numeric scale ranging from “not met” (score of 0) to “fully met” (score of 4).¹⁸ For some of the evaluation items, observers assessed how well the space fulfills the criteria or identify if a particular space exists (no, yes, or shared (i.e., the space exists but is shared with other functions)). Analysis yields an environmental rating scale out of 4.00 for each of the sites; the higher the score, the higher the quality of the physical environment (0.00-1.00 = poor; 1.01-2.00 = fair; 2.01-3.00 = good; 3.01-4.00 = excellent).

Three trained observers independently (but during the same visitation) assessed the case and comparison preschool settings during regularly scheduled programming while children were present. After all scoring was completed, the total score was calculated for each observer for each of the three study sites. The total scores were then averaged to determine the final score for each preschool space. Analysis of the subscale data helps inform site-based improvement strategies. While the total scores have been compared between sites, individual scores for the 54 evaluation items will also be examined to identify particular environmental gaps or areas where a particular site excelled. This data will also be further analyzed using the observational scores from Part 3 to examine the relationships between the CPERS score and play behaviours.

Part 3: Video Observations

Part 3 included monthly video observations of children in the preschool spaces from September to November 2014 and January to June 2015. The video observations consisted of two 30-minute recordings on the same day: one in the morning while the children were in the preschool room and a second one in the afternoon while children were in the Love to Play room (or mini-gyms in the comparison sites).

Three video-cameras were wall-mounted in strategic locations to allow a bird's eye view (as to not influence the children's play behaviours), and were angled to avoid capturing images of children's faces. In addition, using video-cameras to capture play behaviours allowed for group play observations to be coded more accurately, given that the video data can be watched and re-watched to ensure play behaviours are not missed.¹⁹ Video observations also permitted unobtrusive observation and avoided altering the play environment through the presence of an unfamiliar adult. In total, we collected 150, 30-minute video files (a total of 75 hours of footage). The digital files from the three individually placed cameras (from the same day and site) were combined into a three-way split screen video for coding.

A tool named Observational System for Recording Physical Activity in Children (OSRAC-P) was used to describe children's play behaviours in preschools and the related physical and social environments (i.e., contextual circumstances of play behaviours). The Love to Play research team members developed a modified version of OSRAC-P to include social play behaviours and exclude non-applicable categories (e.g., swimming and napping) for the studied preschool sites.

All sixty-one children enrolled in the preschool programs throughout the study time period were video-recorded (100% participation rate). Two trained research assistants independently coded a random selection of 60% of the enrollment population using the modified version of OSRAC-P. For this observational system, researchers observed a randomly selected child for five seconds and then used the following 25 seconds to code the child's play behaviours (which they observed in the five second observational time). On average, 60 observations per child were collected for every 30-minute video in our project. The sites were compared for patterns and significant differences.

The data collected in Part 3 will be further analysed in conjunction with Part 2 data to explore the associations between play environment and children's unstructured play. For example, the CPERS tool will allow for an in-depth comparison of differences in environmental quality. Given that the CPERS subscales evaluate different aspects of a child care facility, our team will be able to see if there are variations in quality across the case and comparison sites and whether those variations yield different play behaviours. The data in Part 2 may also help inform why play behaviours are different in different sites, e.g., if an environment is missing key features of a quality play space, corresponding play behaviours may be absent.

A Genuine Partnership with the Community

This project was built upon shared governance and decision-making.²⁰ SC RPC preschool recreation programmers – our community partners (i.e., integrated knowledge users) – have been actively involved in all stages of the research process. From formulating the research questions and writing the grant proposal to the current in-depth data analysis and dissemination activities, community partners have worked together with the academic team as equal members. Additional SC RPC staff assisted in the data collection activities.

Now that analysis is well underway, we are moving into the active dissemination phase of our project by engaging with Alberta Recreation & Parks Association (ARPA) and Alberta Centre for Active Living (ACAL) for their support in sharing the results of this research. Finally, this project has allowed a number of graduate students to be involved in research through data collection, data analysis, and dissemination activities. Two Masters students are developing their dissertations using this project dataset.

Plans for Dissemination

We have had five presentations at three academic conferences thus far. Currently, we are working on five papers that will be submitted to peer-reviewed journals. In addition to conferences and community meetings, we also have plans to disseminate the findings to stakeholders, practitioners, and policy-makers through the PLACE Research Lab website and newsletters of partner organizations (SC RPC, ARPA and ACAL).

It is also worthwhile mentioning that, at the end of the on site data collection activities, we distributed an infographic to parents and instructors describing all research activities done and presenting our preliminary findings. To reach a broader audience, the infographic was posted online on Dr. Nykiforuk's PLACE Research Lab (<http://placeresearchlab.com/>) and SC RPC's websites (<http://www.strathcona.ca/departments/recreation-parks-and-culture/>); see the Additional Resources section for more information.

RESULTS

Part 1: Interviews with Parents and Instructors

Free play was defined for most parents and all instructors as activities that children engage in spontaneously and voluntarily. *Choice* was a key descriptor; for most parents and some instructors, the children's ability to choose with whom, with what, when, and how to play were seen as a central piece of free play.

Parents were very conscious about their children's play behaviours and how different play types could contribute to their child's development and well-being. While concerned about the safety, respect, and developmental opportunities in play opportunities, parents wanted their children to engage in activities that stimulate their imaginations, help them develop resiliency as

well as intra and interpersonal skills, enhance their self-confidence, promote their independence, boost their happiness, improve their coordination, and contribute to their physical health. Parents also wanted their children to choose what type of play they participated in; however, they would monitor or intervene in their children's activities as they deemed necessary, especially by discouraging aggressive and destructive play and monitoring screen time.

According to parents, preschool settings play an important role in encouraging health-promoting play. Parents felt that preschools are supportive learning environments that prepare children for kindergarten and provide them with opportunities to socialize with peers and different adults. They also felt that preschool environments should provide children with a variety of play activities. That exposure would allow children to find what interested them – knowledge that parents could use for their future decision-making.

Instructors perceived free play as a learning opportunity and a chance for children to use their imaginations, showcase their creativity, explore and make choices on their own, engage in independent thinking, and interact with their peers. While all six instructors listed the benefits of free play for children's health and development, they each had different viewpoints about how, when, and for how long children can exercise their rights to free play. Reflecting on their own teaching practices in preschool environments, some instructors (especially at the conventional preschools) emphasized they try to offer a balanced amount of structured and unstructured activities in order to prepare children for the kindergarten setting, while at the same time providing opportunities for children to follow their own interests. The structured preschool activities seemed to be associated with academic learning, which, in turn, was seen by the instructors as an outcome that parents expect their children to get in preschools. In other words, the instructors seemed to work to find a good (they did not specify the 'ideal' amount) balance

between giving children autonomy to choose play activities (i.e., child-centered) and meeting parents' expectations around kindergarten readiness through academic learning (i.e., teacher-centered).

Instructors also identified barriers to free play instructors (in general) and they may face in their preschool programs, such as lack of materials and equipment for children to play with, and instructors' (perceived, self-identified) poor imagination or adaptability to foster children's spontaneous play. Some instructors felt it was suitable and important to intervene during free play in two situations: (a) if the child's free play activities or social interactions were seen as negative or unsafe, or (b) when a child needed help with an activity. But, the instructors also said they would encourage children to rotate to different centers set up around the space so that they could experience a variety of play activities.

Part 2: Space Evaluation

Table 1 illustrates the results of the space evaluation of the three preschool spaces (inter-rater reliability was good; kappa score = 0.753). Findings reveal the overall score for all three preschool spaces was 'good'. The table also shows areas for potential improvement. For example, Love to Play and SOC scored 'fair' for quiet activity areas designated for reading and fine motor activities, while KLC scored 'excellent'. Love to Play scored 'excellent' for physical activity areas.

Table 1 – CPERS scores for all three preschool spaces.

CPERS Subscales	Definition	Love to Play	Comparison 1	Comparison 2
		(Ardrossan Recreation Complex)	(Kinsmen Leisure Centre)	(Strathcona Olympiette Centre)
Modified Open Space	Interconnected areas facilitating free-flow of activities	2.06	2.61	2.17
Home Bases	Areas for functional care-giving activities (e.g., eating and toileting)	2.22	2.17	2.11
Quiet Activity Areas	Areas for reading and fine motor activities	1.79	3.02	1.96
Physical Activity Areas	Areas for gross motor, music, and fantasy play	3.15	2.93	2.22
Messy Activity Areas	Areas for arts, crafts, science, and water play	2.03	2.30	2.13
Average Score		2.25	2.61	2.12

Part 3: Video Observations

By randomly selecting 60% of the enrollment population for coding, we obtained 13,961 observations across three sites over the 9-month period; inter-rater reliability ranged from 0.877 to 0.994. Some important findings that resulted from the analysis of the sample are presented below. The readers are cautioned that our discussion pertains to the sample under consideration, and not the entire preschool enrollment population.

First, we were interested to determine if there was an association between preschool site and the location within each preschool (i.e., preschool room vs. mini-gym/Love to Play). Within each site, proportionately more observations were recorded in the preschool room than in the mini-gym/Love to Play.¹ The Love to Play program had 47.8% observations in the Love to Play room as opposed to 52.2% in the preschool room. KLC had 36.2% in the mini-gym as opposed to

¹ It is worth mentioning that these differences could be attributed to longer recording times in preschool rooms than in mini-gym/Love to Play spaces. Although the video sessions were supposed to be 30-min long in both preschool rooms and mini-gym/Love to Play, children generally spent less time in the latter. This aspect will be investigated in the next stage of analysis.

63.8% in the preschool room; and SOC had 48.4% in the mini-gym as opposed to 51.6% in the preschool room. This resulted in a statistically significant association between preschool site and location, as evidenced by Chi Square tests ($p < 0.001$). Within each sex and site, proportionately more observations were found in the preschool room than in the mini-gym with only one exception; proportionately, more observations of girls were obtained in the Love to Play room than in the preschool room for Ardrossan Recreation Complex (50.3% vs. 49.7%). Also, the differences in proportions of observations in the preschool room and the mini-gym were more pronounced among boys than girls; there was a statistically significant association between preschool site and location, the association being stronger for boys than girls (Chi-Square values are: 41.653 and 134.266, respectively for girls and boys). Further, the preschool sites differed significantly in terms of sex of the child ($p < 0.05$).

Taking these differences into account, we examined the sample in terms of children's level of physical activity, type of physical activity, play activity, and initiator of activity. A cursory look at the **Charts 1 to 4** shows notable differences in preschool sites in terms of the four stated factors. However, it is important to know whether the preschool sites are statistically different from one another in terms of level of physical activity, type of physical activity, play activity, and initiator of activity. The Chi-square tests indicated that the preschool sites were not independent of type of physical activity, level of physical activity, and initiator of activity (the p -values were lower than the alpha value of 0.05). However, there were no significant differences between the distribution of play activity and the preschool sites ($p > 0.05$).

Chart 1. Level of physical activity by preschool site.

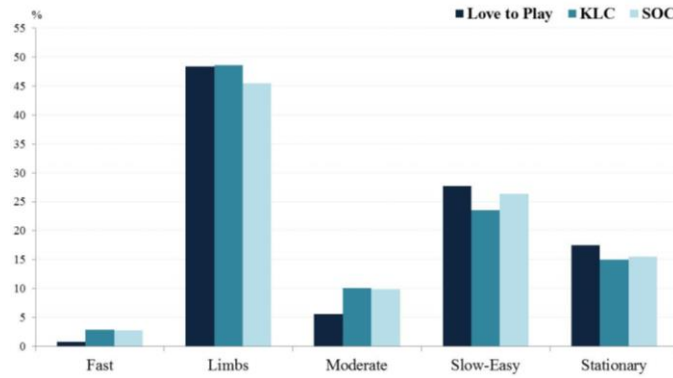
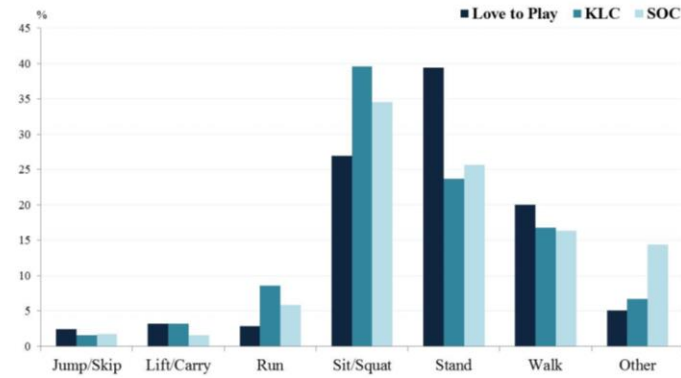
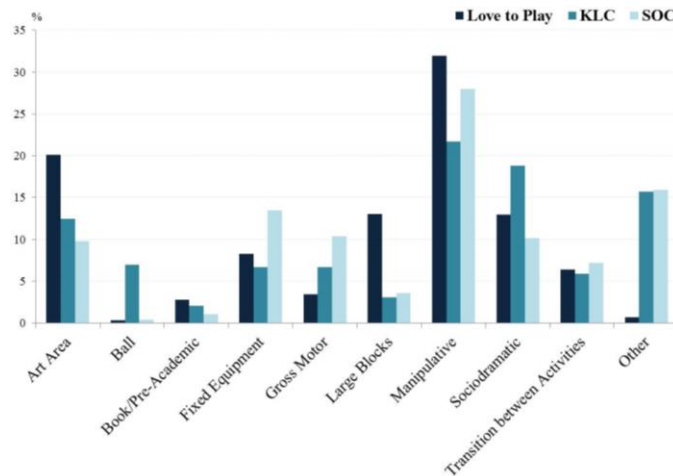


Chart 2. Type of physical activity by preschool site.



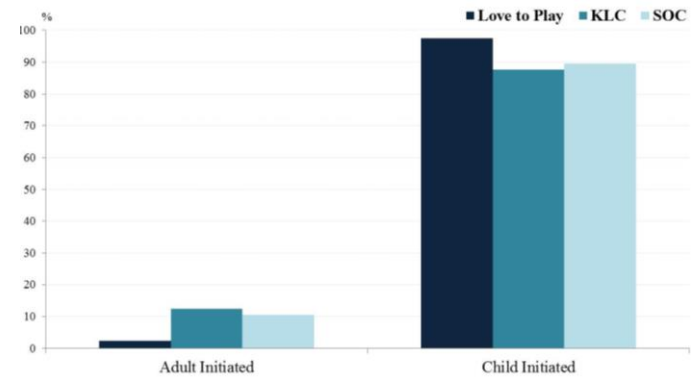
Note: Other includes crawl, dance, lie down, push/pull, roll, rock, and throw.

Chart 3. Play activity by preschool site.



Note: Other includes exploratory, games with rules, group time, music station, self-care, snacks, teacher arranged, and wheels.

Chart 4. Initiator of activity by preschool site.



EVALUATING THE COMMUNITY-UNIVERSITY RESEARCH PROJECT

As part of this project, our team was also interested in examining the strengths, limitations, and challenges of the partnership *per se* established between community and university in this study. While we – the community partners and academic team – recognize the importance of the collaborative work for the production of meaningful results, we also understood that we all would have to make continuous efforts to overcome potential barriers (e.g., different agendas and timeframes) in order to maintain our successful, authentic partnership throughout all research activities.

To evaluate the partnership, we hired an external evaluator who invited SC RPC representatives and all academic research members (from Principal Investigators to Research Assistants) to complete an individual semi-structured interview about their experiences in working in this collaborative project. Between December 2015 and January 2016, 11 (in-person or phone) interviews were conducted with 5 research staff, 3 investigators, and 3 SC RPC representatives. During the interviews, they were asked to think of what worked or did not work well in the partnership, as well as to share their met and unmet expectations. Using content analysis, the external evaluator independently coded all interview transcripts. A report summarizing anonymized reflections was shared with all team members.

Here is a summary of the findings listed in the report:

- **Positive experiences:** both community partners and academic research members highlighted how gratifying the experience of working collaboratively was for them.
- **Facilitators:** The interpersonal styles of specific people (on either the community partner or academic sides) were considered what most facilitated the collaboration,

alongside with the longstanding relationship between SC RPC and Principal Investigators.

- **Hindrances:** Almost all interviewees perceived the amount of paperwork and the steps required for consent being burdensome to community partners as well as parents and instructors.
- **Improvement for Future Collaborations:** Interviewees suggested the importance of having more face time in meetings with academic research team and community partners (especially upfront) to get to know one another and clarify expectations and roles between all parties.

To ensure the findings will be useful and relevant to Strahtcona County and other communities seeking interventions in children's free play, our community-university partnership will continue to work together as we conduct in-depth analysis, interpretation of findings, and on-going dissemination activities.

ADDITIONAL RESOURCES

The infographic explaining our research activities and showing the findings from preliminary data analysis is available online through Dr. Nykiforuk's PLACE Research Lab website (<http://placeresearchlab.com/wp-content/uploads/2015/10/Love-to-Play-Infographics.pdf>) and the Stratcona County Recreation, Parks and Culture website (http://www.strathcona.ca/files/files/at-rpc-love_to_play_infographics.pdf).

FURTHER RESEARCH

Further research is needed in the development of a specific tool aimed to capture free play activities when using remote and fixed video cameras for data collection. There are a dearth of tools adapted to the use of video cameras and that seek to investigate how children play when interacting with their surrounding environment. Future studies should also seek to create a more nuanced understanding of the social and physical environment conditions that are associated with – and foster – the different types of play related to the various positive health and social development outcomes in early childhood. Additionally, an instrument assessing only physical features of Canadian preschool spaces should be developed and validated. We found that CPERS (an audit tool developed by a joint team of researchers from Australia, New Zealand, and United States) was not culturally appropriate to the standards and design of preschools in Canada.

Another main recommendation for academics and community partners is to work together in an authentic research partnership throughout the entire research process. The equitable engagement of the community partners as equal research members in this project, alongside the university team, was critical for ensuring that the research produced meaningful and relevant results for the community and a better understanding of the research topic. Other researchers are encouraged to take this approach by partnering and collaborating with appropriate community organizations.

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APPENDIX

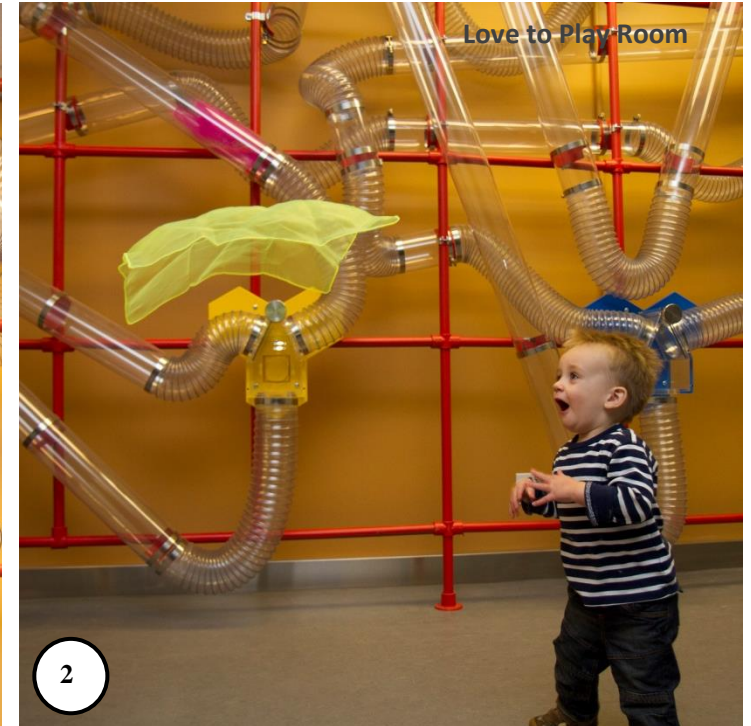
Ardrossan Recreation Complex Love to Play Program

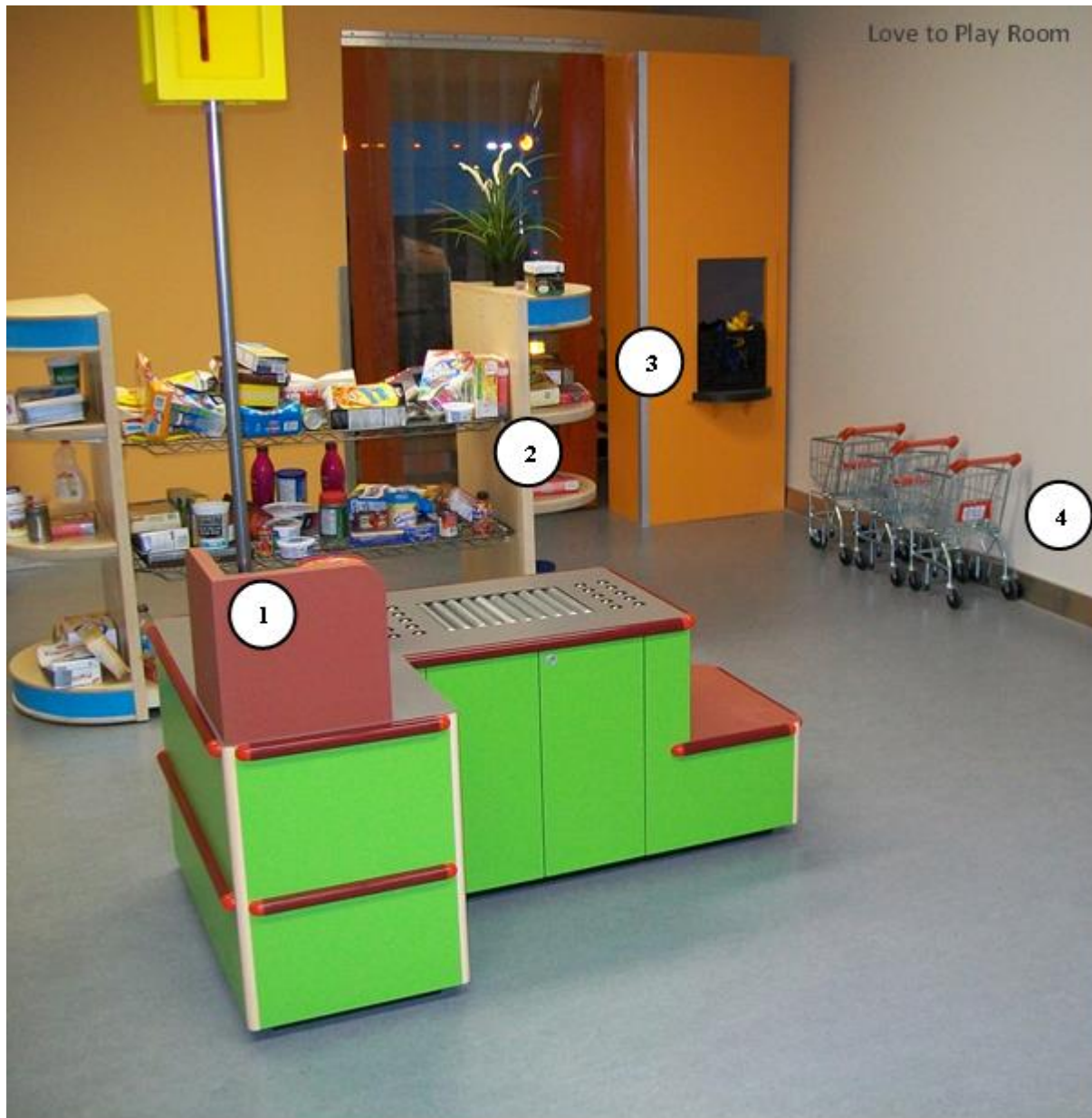


In the Love to Play room, a **large foam block** set provide loose parts for dynamic, constructive and creative play (1). The **rolling ball wall** is interactive, allowing for explorative, sensory-enriched play (2). The **tree house** facilitates sociodramatic and explorative play (3). **Pneumatic air tubes** controlled by young visitors expel scarves from above and encourage cooperative and gross motor play (4). The **flip-flop instrument**'s plastic tubes emit different sounds when they are struck by a flip flop, encouraging exploratory play (5).

The **pneumatic tubes** are attached to the wall. There are several control points where children may alter the course of the scarves, often surprising themselves and their peers as scarves leave the system from several exit points (1,2). A **magnet wall** encourages constructive and creative play as children manipulate plastic tubes to guide balls through a maze of their own construction (3).

Photographs provided by
Strathcona County
Recreation, Parks, and
Culture.





The **market area** encourages sociodramatic and creative play. Children may pretend to purchase groceries at the cashier area (1), select purchases from the well-stocked grocery shelves (2), load and unload goods into boxes in the loading bay (3), and transport their groceries via shopping cart (4).



The preschool room features a **light-up sand table** for exploratory and creative play (1). The cardboard **rocket ship** serves multiple purposes, encouraging both sociodramatic and creative play (2,3).

Photographs provided by Strathcona County Recreation, Parks, and Culture.