

**Evaluating the Curious Communities Early Learning Program
implemented in the Logan region**

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The University of Queensland acknowledge the Traditional Custodians of the land and which its campuses operate. We pay respect to Elders past, present and emerging.

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Executive Summary

Physical activity can play an important role in supporting healthy development in early childhood. However, only about 20% of children are meeting both the screen-based and physical activity guidelines. Community-based interventions offer an accessible approach to improving physical activity levels whilst additionally providing a supportive environment for the development of social skills and connections. The aim of this project was to evaluate the effectiveness of the early learning program implemented by Curious Communities in the low socioeconomic region of Logan. The program was conducted over a 10-week period at Berrinba East State School. Children from the age of 6 months to 5 years attended one 90-minute group session per week. The activities offered were focused on risky and active play, sensory input, exploration, and development. Progress throughout the program was tracked via surveys and interviews completed by their caregivers in Weeks 3, 6, and 9. According to those who participated and completed the surveys and interviews, Curious Communities' program appears to be effective in enhancing the development and wellbeing of participants with 91% observing an improvement in physical activity participation, 77% believing their child was more socially connected, and 73% acknowledging their child was more confident communicating with others following engagement with the program. However, strong conclusions about program effectiveness cannot be made given limitations in design of the evaluation. The strong positive results nevertheless warrant further investigation into the program.

Context Points:

- Participation in regular physical activity and reducing sedentary behaviour is essential for healthy physical, social and cognitive development during a child's early years. However, an ever-increasing sedentary lifestyle, particularly in childhood, has become a major concern of Australian governments (Holt-Lunstad et al., 2017, Blewitt et al., 2018, Khanlou & Wray, 2014).

Current recommendations state that children between the ages of 3 to 5 years, should participate in at least 3 hours of physical activity a day with no more than 1 hour of screen time (Tremblay et al., 2012). This is vital for healthy physical development, attaining correct movement patterns, promotion of mental, emotional, and social wellbeing, and to facilitate improved cognitive function (Australian Government Department of Health, 2021). Yet, the 2011-12 Australian Bureau of Statistics National Nutrition and Physical Activity Survey [ABS NNPAS] revealed that only 20% of children aged 2 to 4 years met both the physical and screen-based activity guidelines, where they averaged 84 minutes a day of screen time (Australian Institute of Health & Welfare, 2020). As this is expected to increase risks of future health concerns and developmental issues amongst children, it becomes vital that access to high quality physical activity programs is improved immediately.

- Regular community-based play with enhanced opportunities for social development through facilitated peer and parental interaction, may be used to conclude that these benefits will not be acquired with limited engagement in physical activity opportunities. Reduced exposure may therefore hinder a child's ability to regulate their emotions, increasing their likelihood of engaging in anti-social behaviour and resulting in the development of mental health disorders (Blewitt et al., 2018).
- Current research shows that interventions at a community level have been effective in improving physical activity participation amongst children as they offer increased opportunities for engagement in non-sedentary play. Naylor et al (2015) conducted a systematic review which revealed that 11 out of the 15 included community interventions offered a positive impact on at least one health outcome

(Naylor et al., 2015). Heath et al (2012) identified that community programs may contribute to a decrease in health and social disparities, particularly in low socioeconomic areas, through the provision of services in accessible locations and at a low cost (Heath et al., 2012). Likewise, there is encouraging evidence supporting the use of community programs to enhance social and emotional wellbeing as well as other early learning outcomes in young children through fostering a supportive environment for development (Holt-Lunstad et al., 2017). Community programs have been identified as an effective method for reaching target groups in their natural living environment, and therefore possess the capacity for achieving high population-level impact (Brand et al., 2014).

- Curious Communities is an initiative held at Berrinba East State School within the low socioeconomic region of Logan. The early learning program was designed to use play in engaging and enriching ways while also ensuring accessibility and affordability. Thus, the underlying objective of the program is to facilitate improved physical activity opportunities for children with the capacity to enhance developmental outcomes for the participants. The activities offered aim to engage all seven senses through the inclusion of unconventional and risky play, with a 'pros vs cons' approach applied. The children are invited to play with small, breakable, and loose items, all of which are generally used with caution. The founders of the initiative are passionate about children participating in genuine, unstructured, and child-led play and this is reflected in the foundations of their program. Through the implementation of effective community-based programs, there is potential to make significant progress towards meeting physical activity guidelines and in turn achieve improved developmental outcomes.

The aim of the project is to evaluate the effectiveness of the 10-week early learning program implemented by Curious Communities, based upon available data collected by the program administrators. Program administrators were primarily interested in the following questions: (1) has the program impacted physical activity participation? (2) how has the program impacted sense of social connection? (3) how has the program impacted confidence levels communicating with others? The overall program satisfaction will also

be assessed Program administrators were interested in whether or not children and parents enjoyed the program, and whether their experiences were positive and developmentally enriching.

Methods

Participants

Survey participants included 22 children who were attending the Curious Communities Seven Senses Program in Logan City, Queensland. The program was offered for children aged 6 months to 5 years. Inclusion criteria applied were that participants needed to have attended a least one session of the program across the 10-weeks. The caregivers of all eligible candidates were contacted via email to participate in the survey on behalf of their child; 27.5% agreed to participate. Five of these participants (23%) lived within the local area of Berrinba, whilst the remaining participants travelled from surrounding suburbs. As the surveys were conducted anonymously, all other defining characteristics of each participant are unknown.

A separate 13-person sample was used to conduct the short interviews with all children between the ages of 11 months to 5 years old. Seven of the participants had more than one child involved in the program. These participants had attended a Curious Communities session on one to four occasions across the intervention timeframe.

Intervention

The Curious Communities Seven Senses Program was conducted over a 10-week period in 2021, at Berrinba East State School, within the City of Logan. It was developed in partnership with the State Library of Queensland First5Forever program and Berrinba East State School. Participants attended one hour-and-a-half group session per week during their involvement with the program. Staff and parents were present during each session, however primarily allowed the children to play independently.

The weekly sessions focused on sensory input, exploration, and development through the incorporation of elements that stimulate sight, smell, taste, sound, touch, proprioception, and the vestibular system. The activities offered were unstructured and child-led, targeted towards their interests to attract attention, and created learning opportunities for those involved. For example, there were stations labelled as 'messy play' which utilised mud, paint, and slime, and were open for children to use as they desired. There were also coloured rice and pasta stations or building stations where children were invited to use their imagination and create pretend play situations. The children were also encouraged to make use of their natural surrounds by climbing trees and balancing on logs. New activities were offered each week with corresponding weekly themes such as Dirty Dinosaurs, Harry Potter and Halloween. The participants had free choice to play independently, however many chose to collaborate during the activities which helped to foster new friendships and encourage them to develop their communication skills.

Data Collection

The design involved surveys and semi-structured interviews.

Surveys

Surveys were sent to the caregivers of program participants in Weeks 3, 6 and 9 of the intervention. Online surveys offer significant speed and cost advantages over many other research techniques and are generally easy to interpret and complete (Sauermann & Roach, 2013). However, it is not uncommon for low response rates to be received, thus the surveys were completed anonymously in an attempt to increase the likelihood of candidates responding (Murdoch et al., 2014).

The surveys were identical in format and content for each of the relevant weeks. These covered program satisfaction levels, changes in their child's behaviour and wellbeing, and improvements in their current physical activity levels. A focus was placed on three proposed benefits of the intervention, which formed the outcome variables for the research project, through enquiring if the caregivers noticed that the program had made their child more physically active, socially connected, and confident communicating with others. Participants were

required to subjectively rate the effectiveness of the program for their child, with regards to each variable, via allocating a numerical value of 1 (strongly disagree) through to 5 (strongly agree). The final question of the survey welcomed participants to leave feedback for the organisers via a written format. A total of 14 survey questions were posed to the participants which were received online and later used for analysis.

Semi-structured interviews

Semi-structured face-to-face interviews were conducted with 13 participants in Week 9. This technique uses a fixed set of questions as a guide yet allows for the introduction of supplementary questions to facilitate further discovery into the individuals experiences and perceptions (Kihl et al., 2014). These type of interviews are less formal and more conversation-like, which assists with placing the subjects at ease and initiating the development of rapport whilst retaining control over the discussion (Cachia & Millward, 2011).

Each interview began by asking demographic questions including name, number and age of children, and the length of time they had been involved with the program. The purpose of these questions was to produce background information on each of the subjects as well as to relax the interviewees. These were followed by questions surrounding the quality of the delivery of the program and the benefits associated with program participation. Focus was placed on observable changes in physical activity status and ability to effectively interact and participate with others. Generally, these questions expanded on those posed in the surveys, so the participants were already somewhat familiar with the topics that were raised. Probing questions were utilised for clarification purposes and to gain further specific examples of the participants experiences throughout the program. Finally, the interviewees were offered an opportunity to provide constructive feedback for the program organisers. The interviews were video recorded, ranging in length from 5 to 15 minutes, and were later transcribed for analysis.

Data Analysis

Descriptive statistics and donut graphs were generated from survey data to identify basic patterns in the data. A phenomenological analysis was then conducted for the semi-structured interviews. This enabled the identification of significant emerging themes for which the data could be organised around. Word clouds were formed via an online generating tool, labelled WordItOut, to create a visual display of the results relating to overall program satisfaction. The greater the size and boldness of the word, the more often they were used by participants to describe their experiences. Additionally, quotes were extracted from the interviews and utilised to directly address research objectives and to provide further depth of understanding.

Results

The phenomenological analysis of semi-structured interviews revealed four broad themes: overall satisfaction, physical activity, social connection, and communication confidence. These aligned with the topics presented in the surveys and thus the data from both methods of collection can be presented together.

Question 1: Has the program impacted physical activity participation?

When participants were queried on whether they believed their child's physical activity levels had improved through engagement with the program, the results were consistently positive and in favour of what Curious Communities had offered their child. This is presented in *Table 1*, whereby from Weeks 3, 6, and 9, a rating of between 4.75 and 4.46 and 4.50 out of 5 on the item measuring parental perception of increased physical activity was obtained. *Figure 1* shows that 91% of survey responders agreed that there had been a significant increase in their child's engagement with physical activity. Statements provided by caregivers corroborated the survey results. For example: "For a weekend we didn't used to really do much at all... so that compared to 2 hours of play, play, play, there is a big difference" (Chelsea – Interviewee 5); "Here they get to use their body outside, they get to build muscle, that's something I find a lot of kids lack... They get to be away from technology which is a big thing that's stopping this sort of play" (Danika – Interviewee 4); and "I watched my 2-year-old climb up the equipment and jump off, I didn't think he would be capable of that until today" (Hannah – Interviewee 10).

Table 1: Survey results of participants perceptions of the impact of Curious Communities’ program on their child’s physical activity levels

Question Posed: My child is more physically active when engaged in play at the Curious Communities sessions

Week	Average Rating (1-5)
3	4.75
6	4.46
9	4.50

5 – strongly agree, 4 – agree, 3 – neither agree nor disagree, 2 – disagree, 1 – strongly disagree

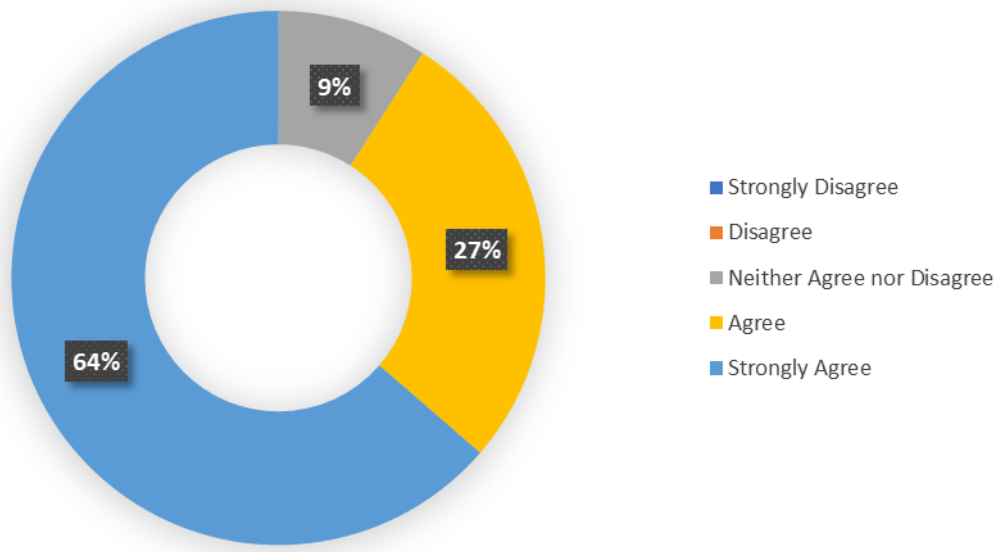


Figure 1: Survey results from final week of program relating to the impact of Curious Communities’ program on their child’s physical activity levels

Questions 2: How has the program impacted sense of social connection?

The results in *Table 2* show equally high endorsement of the item measuring parental perception of social connection following the program. 77% of survey participants either agreed or strongly agreed that their child had a greater connection with their peers, following involvement (see Figure 2). Less than a quarter of participants were undetermined regarding the programs impact on social connection. Stemming from the respective question, social connection was a major theme which arose during the interviews, as evidenced by the following quotes: “The social benefits are one of the key reasons why I brought her here, she likes coming out and making friends” (Samantha – Interviewee 1); “We are recent migrants so this is a great event for my children to find their way to be a part of the local community” (Hoi Ting Sun – Interviewee 8); and “He had a lot of trouble previously making friends, he had quite a lot of anxiety, but now it’s easy to make friends playing together” (Marissa – Interviewee 11).

Table 2: Survey results of participants perceptions of the impact of Curious Communities’ program on their child’s sense of social connection

Question Posed: *My child feels more socially connected as a result of participating in Curious Communities sessions*

Week	Average Rating (1-5)
3	4.50
6	4.33
9	4.20

5 – strongly agree, 4 – agree, 3 – neither agree nor disagree, 2 – disagree, 1 – strongly disagree

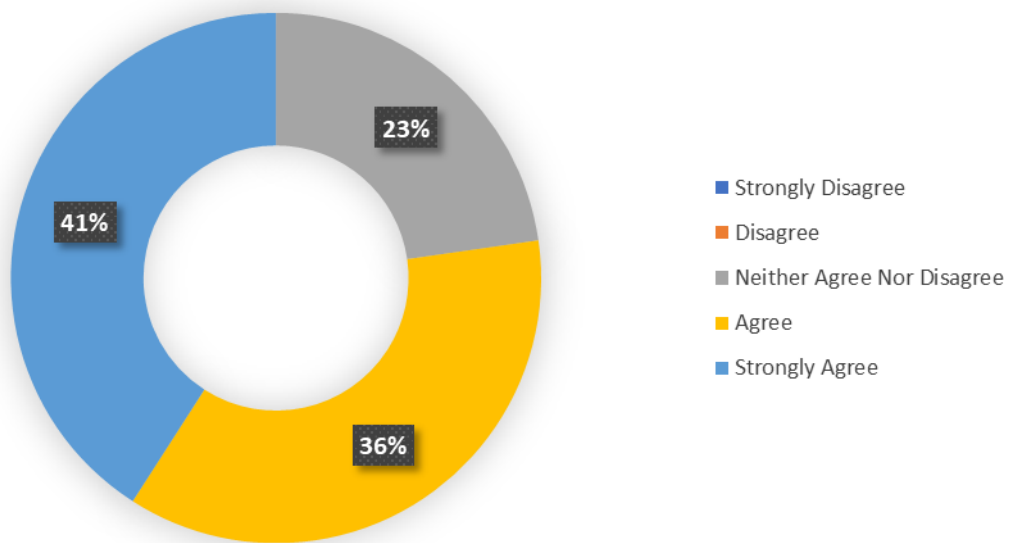


Figure 2: Survey results from final week of program relating to the impact of Curious Communities' program on their child's sense of social connection

Question 3: How has the program impacted confidence levels communicating with others?

A significant improvement in the participants confidence communicating with others was similarly observed through the analysis of survey data from the Curious Communities program. *Table 3* demonstrates again shows strong positive endorsement of the item measuring parental perception confidence in communication over the 3 measurement periods of the survey. *Figure 3* shows over 70% of participants agreeing that the program had positively impacted their child's confidence levels relating to communication with others, by the end of the program. Just 4% of participants believed the program had not benefited their child's communication confidence. The following comments made by caregivers of program participants reflects the effect the intervention had on improving communication confidence levels: "He is also now super responsive to people in our community... asking who are you? How are you? Have a good day! And he never used to that. It has made me really proud to see him come out of his shell" (Chelsea – Interviewee 5); "She's building more confidence being around other kids and speaking up, getting in, and having a go, because she can be a bit shy sometimes"

(Tony - Interviewee 6); and "I really believe that having all these opportunities of play, trust, and learning are the reason he's speaking so far above average for his age" (Teaghan - Interviewee 9).

Table 3: Survey results of participants perceptions of the impact of Curious Communities' program on their child's confidence communicating

Question Posed: My child shows more confidence speaking with others when engaged in play at the Curious Communities sessions

Week	Average Rating (1-5)
3	4.0
6	4.21
9	4.1

5 – strongly agree, 4 – agree, 3 – neither agree nor disagree, 2 – disagree, 1 – strongly disagree

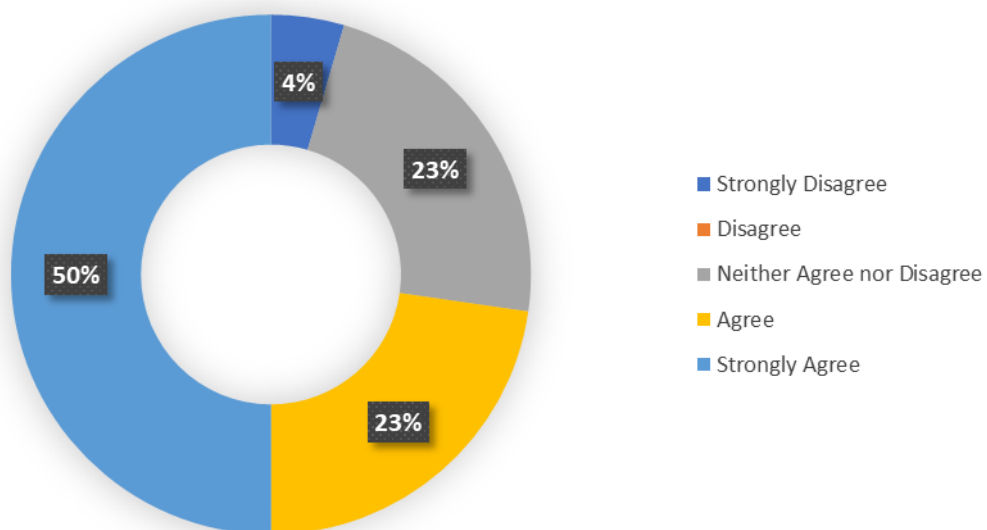


Figure 3: Survey results from final week of program relating to the impact of Curious Communities' program on their child's confidence communicating

Overall program satisfaction:

Table 4 reports high positive endorsement of the item of perceived overall satisfaction of the program. *Figure 4* which reveals that 95% of the participants felt their needs and expectations were fulfilled by the Curious Communities program in Week 9. The dialogue collected from interviews with the participants relating to overall satisfaction was analysed using word clouds (*Figure 5 & 6*). The most common words to arise when referring to their overall perception of the program were: fun, messy, adventure, exciting and freedom. Similarly, the words used most frequently to describe the benefits of the program were: happiness and fun. Other positive words which arose were: trust, wellbeing, interaction, and creativity. When asked to offer recommendations for the future, the participants found it difficult to provide any constructive feedback and in turn responded in the following manner: “I have all positive feedback, I love everything about their events... It is worthwhile, I think the turnout shows that” (Ashley – Interviewee 2); “What they offer is vital, it is crucial to their development...It makes a really big difference in their personalities and health” (Maddy – Interviewee 3); “Being that it is free, it is absolutely vital for a low socioeconomic area to have somewhere for the kids to come and play, and socialise” (Chelsea – Interviewee 5); and “I see so much value in what we are doing here, I see how much the kids are growing from it” (Teaghan – Interviewee 9). Thus, it becomes clear that the Curious Communities program was highly valued by the community of Logan and would continue to have a positive impact on the development of participants should it persist into the future.

Table 4: Survey results of participants overall satisfaction level with Curious Communities’ program

Question Posed: How satisfied are you with your play experience at the Curious Communities sessions

Week	Average Rating (1-5)
3	4.75
6	4.73
9	4.75

5 – strongly agree, 4 – agree, 3 – neither agree nor disagree, 2 – disagree, 1 – strongly disagree

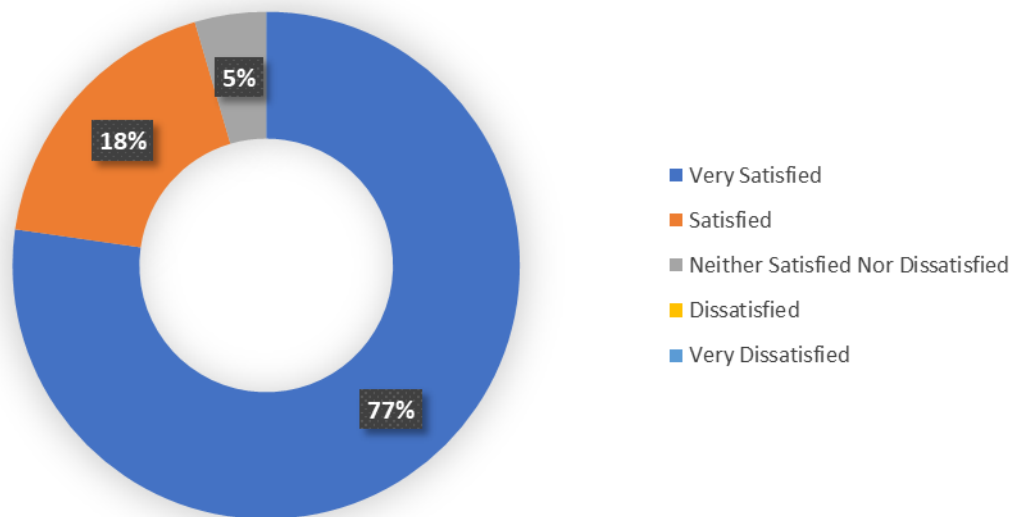


Figure 4: Survey results from final week of program relating to overall satisfaction level with Curious Communities’ program

Discussion Points:

- Community-based physical activity initiatives have the potential to enhance the overall wellbeing and development of children by providing a supportive environment for adoption of positive behaviours (Brand et al., 2014).
- The aim of this project was to examine the effectiveness of the physical activity intervention implemented by Curious Communities in a low socioeconomic area. Overall, the perception among the parents who completed the survey and participated in the semi-structured interviews found the program to have a positive impact on their children, with the strongest perceived impacts in the domain of increased physical activity. The parents described the program favourably and rates overall satisfaction with it very highly. These results bode well for the program, as favourable responses such as these suggest parents see value in participation for their children.
- A particularly noteworthy finding are the positive perceptions of the impact of the program on social connectedness. It is clear among the parents who participated in the evaluation saw value in the programs in terms of building community. This highlights the fact physical activity-based programs can be used for not only health promotion, but also community development. This is dual benefit of Curious Communities.
- Notwithstanding the positive results, there are several design and measurement limitations with the evaluation that need to be addressed in future research. First and foremost, the low response rate. While this is uncommon for study designs like this one, making generalisations of these findings to all program participants should be avoided. Two, reliance solely on parental perceptions is a limitation. Parents, particularly those who responded to the invite, may have a favourable bias toward the program. For outcomes such as physical activity, supplementation with objective measurement of behaviour would enhance the findings and address the problem of potential bias. Closely related to this point, future evaluations should be administered by independent investigators, who do not have a direct relationship with the program or its administrators. Again, this would minimize potential biases that could influence data collection. Finally, the absence of a control group means that the direct effect of the intervention cannot be ascertained from these results.

Conclusion

Physical activity is vital for development during a child's early years, yet 80% of Australian children do not meet the current recommendations. Not only does this have detrimental effects on their physical health, but low physical activity levels are also likely to impair social, emotional, and cognitive functioning. Childhood is a crucial stage for development and adoption of poor health-related behaviours throughout this period are likely to lead to further negative impacts during adolescence and adulthood, highlighting the need for community action during these formative years. The current available research has revealed the benefits of being physically active and having strong social skills, yet the link between increased participation in community-based physical activity and improvements in sense of social connection and communication confidence have not been thoroughly explored until now. High quality community implemented programs, such as Curious Communities, can be important part of increasing participation in physical activity whilst additionally fostering an environment which encourages prosocial interactions leading to improved social connectedness and confidence communicating with others. This is important for child development as it influences their overall wellbeing as well as their ability to engage in formal education and effectively participate in society as adults. Community-led programs such as Curious Communities can provide the current and future generations with the best opportunity for healthy development. While the initial program evaluation results are very positive, further research is required to evaluate the efficacy of the program.

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