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# Effects of an Early Childhood Training Program on Vulnerable Children's Outcomes: An Exploratory Study

## Abstract

*This exploratory study assessed the effect of an innovative early childhood training approach on the development of children attending an early childhood education and care drop-in centre called Halte-garderie du Cœur offered by a general and vocational college. The direct beneficiaries of the services were children aged four months to five years, who had either experienced maltreatment or were from recently immigrated refugee families. This article presents a mixed methods exploratory and comparative evaluation study based on multiple data sources, including standardized developmental scales measuring child development, data from structured questionnaires with parents and program staff, and interviews with parents and staff. Participants included two cohorts of children and their parents, involving a total of 25 children, 16 parents, and four professionals. The results show that a significant proportion of children attending Halte-garderie du Coeur made gains in their emotional, affective, and social development between the start and end of each of two 12-week sessions. The effects seen in children were consistent with those set out in the program theory. To explain these results, we hypothesize that the training program helped students to develop specific skills that allowed them to positively influence children's development particularly for children from vulnerable families.*

**Keywords:** Exploratory Outcome Evaluation, Early Childhood Training Program, Early Care and Education, Mixed Methods, Vulnerable Children.

## Introduction

It is widely recognized that the level of training of educators working in the early childhood sector is a key factor influencing the quality of educational services that children receive (Egert et al., 2018; Gomez et al., 2015; Slot, 2018). The level of training of these professionals is also associated with impacts on several areas of development for children in their

care (Landry et al., 2009; Piasta et al., 2012; Wasik & Hindman, 2011). Nonetheless, the literature shows that there are gaps in the research in this area, given that the few studies that have been reported have largely involved children from middle-class backgrounds, with few participating children from vulnerable backgrounds (Schachter, 2015). It is imperative for evaluation to be able to capture the effects that early childhood professional training programs

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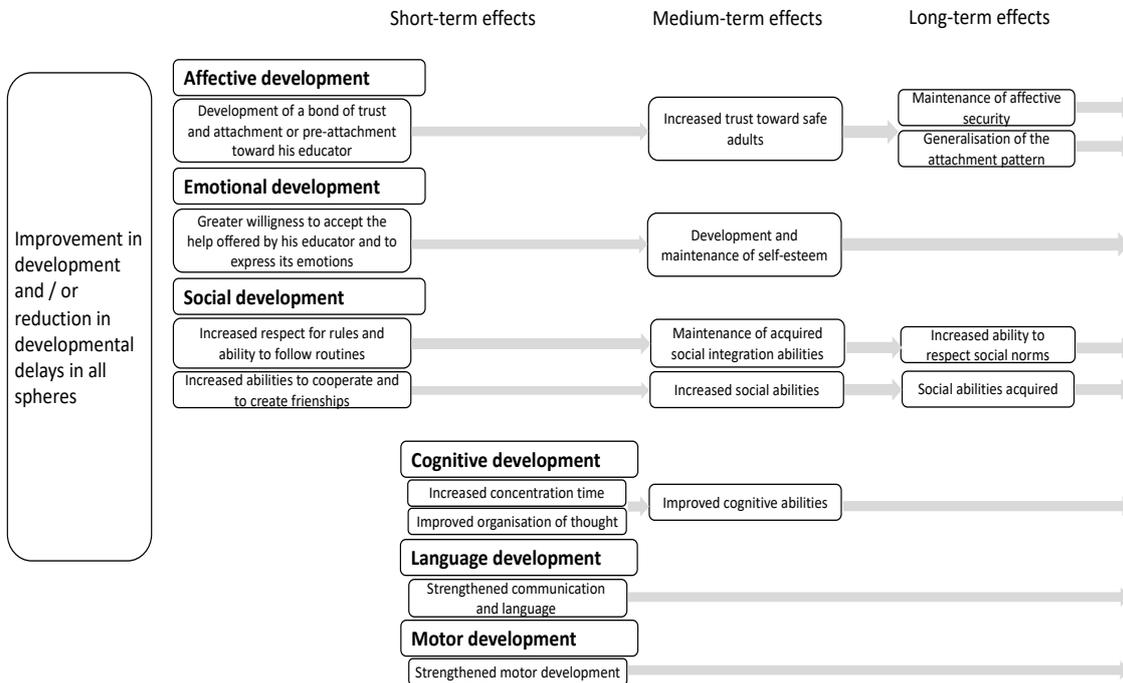
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can have on more diverse groups of children (Snyder et al., 2012). In order to help address this gap, this article presents an outcome evaluation exploring the effects of an innovative training approach focused on the development of children aged seven months to five years attending a drop-in centre offered by a college-based (Cégep) early childhood education vocational training program in Quebec.

**1) Conceptual Framework**

The conceptual framework used in this study to assess the effects of the HGC training approach was based on an evaluation approach known as the theory of the program (Chen, 2005). Figure 1 specifically presents the theory of effects for children, which provided the basis for the evaluation of effects presented in this article.



**Figure 1.**  
Diagram of the effects on the children development

**Affective Development**

Program designers define affective development as those "...behaviors allowing intimate individual social relationships that bind the members of a species together" (Harlow, 1974, cited by Baudier and Céleste, 2019). These behaviours reflect children's attachment to a specific person and their ability to turn to this attachment figure to meet their needs for affection and survival (Elfer and Dearnley, 2007). Over the short term in an ECEC context, it is expected that children will develop **a bond of trust and attachment or pre-attachment towards their educator**,<sup>4</sup> expressed in behaviours such as seeking visual contact with the educator, reduced crying, greater acceptance of being approached by the educator, seeking physical and emotional proximity to this person, and showing pleasure during interactive play with the educator.

**Emotional Development**

Emotional development is defined by the program designer as involving children's ability to

regulate their emotions and emotional behaviours, either with adult help or by themselves when they have reached a certain level of maturity (Provost et al., 2012). Over time, HGC staff also observed important changes in children's ability to identify emotions and their receptivity to being approached by staff responding to their needs. Thus, children were **better able to accept the help offered by their educator and were better able to express their emotions**. Behaviours indicating progress in emotional development could include a child who stops pushing his educator away and avoiding her gaze when she tries to help him, learns to trust his educator, and gains a better understanding of what he is experiencing (Santrock, 2014).

**Social Development**

Social development is defined here in terms of two types of behaviours. First, social development involves behaviours relating to integration and adaptation to life in society, such as **respect for rules and cultural codes, ability to follow routines, and autonomy**. Second,

social development involves relationships with peers and other adults, such as the **ability to cooperate and to create friendships** (Coutu et Bouchard, 2019). These achievements help children to accept the rules and conditions of the environment, leading to progress in their functional and emotional autonomy. In the short term in an ECEC context, children adapt to the routines of the setting, and comply better with the rules.

## 2) Research Setting

The training program, called *Halte-garderie du coeur* (in English, *Drop-in Centre of the Heart*, hereinafter referred to as the HGC) provides third-year students with direct experience and training in working with vulnerable children. With on-site support from teachers and a focus on reflexive practices, the educator-candidates learn to implement educational practices with the children and parents, and develop their empathic sensitivity (see Bigras et al., 2019a, 2019b). Table 1 presents the main characteristics of the HGC training program.

**Table 1.**

*Characteristics of the HGC training program*

Variables	N
Internship season per year	2 (fall and winter)
Total number of internship hours	282
Number of internship weeks	24
Associate-educator attendance	Continuously
Individual coaching sessions hours with instructor	16
Instructor attendance	Continuously
Group coaching sessions hours per season	48
Group planning hours per season	78
Interaction with families	Continuously

The HGC is similar to an early childhood centre (ECC) with respect to the activities, allocation of tasks, routines, case management and physical layout. It differs from a conventional ECC in the fact that the children attend only two days a week, and in its ratio of one educator-candidate for every one or two children on average. During the fall and winter semesters, an average of 15 to 20 children are taken on by the HGC team. The team is made up of educator-candidates (eight–12), instructors (2), the coordinator, associate-educators (2) and one technician (meals and materials). The activities take place in two rooms that have been equipped to welcome the children and are organized for a

multi-age group. The Caterpillars room is for children from four to 18 months years old, and the Crickets room is for children from 18 month to five years old. A typical day for children at the HGC runs from 9:00 a.m. to 3:00–3:30 p.m. A typical week for the educator-candidates is three days—two days with the children from 7:30 a.m. to 5:00 p.m. and one day for activity planning. Two main child profiles are regularly seen at the HGC: children who were reported to child protection services for suspected abuse, and children from recently immigrated families, many of whom have spent time in refugee camps.

This evaluation examines the short-term effects of the HGC's educational services on two cohorts of children who attended the HGC two days a week, six hours per day, for 12 weeks.

## Method

### 1) Research Design

A three-step evaluation (developing program theory, process evaluation, and outcome evaluation) was developed to support the team in working towards the goal of institutionalize the HGC's approach to training in the curriculum of the ECE department and to promote its dissemination throughout the college network (Bigras et al., 2016a, 2016b, 2020; Quiroz et al., 2016). Here we present the final step of the evaluation which used an exploratory sequential mixed method design to assess the effects of attending the HGC on the children, using both quantitative and qualitative methods (Creswell, 2014). This design is exploratory in nature since it aims to describe the short-term effects of the intervention on the children before, during and after the intervention. This, in turn, will test the theory of the effects of the program developed during the first stage of the intervention of this evaluative approach. This research is also sequential in nature since it seeks to enrich the results of the quantitative analysis by using a qualitative approach to increase the explanatory power of the analyses and interpretations.

### Participants

Two cohorts of families were recruited, the first at the start of the fall 2016 term (September) and the second at the start of the winter 2017 term (February). The sample is composed of 25 children and 16 parents (see Table 2), as well as four professionals (see Table 3). Of these 25 children (44% girls), 64% attended the HGC for a single term (between 10 and 26 days) and 36% attended for two terms (between 27 and 46 days). At the time of the recruitment process, the children ranged from seven months to five years of age (mean age: 30.10 months, SD: 17.82 months). The sample is strictly composed of

families living in vulnerable situations and who were referred to the HGC by a community organization (MFM) or a public service, either in child protection (CJ) or in health (CLSC).

**Table 2.**

*Characteristics of children participating in the assessment*

Baseline characteristic	Cohort 1 – Entry in fall 2016		Cohort 2– Entry in winter 2017		Total	
	n	%	n	%	n	%
<b>Children</b>	16	64	9	36	25	100
<b>Duration</b>						
12 weeks	7	44	9	100	16	64
24 weeks	9	56	0	0	9	36
<b>Gender</b>						
Male	7	44	7	78	14	56
Female	9	56	2	22	11	44
<b>Referral</b>						
CJM <sup>1</sup>	9	56	6	67	15	60
MFM <sup>2</sup>	3	19	0	0	3	12
CLSC <sup>3</sup>	4	25	3	33	7	28
<b>Age</b>						
Caterpillars (Younger)	8	50	6	67	14	56
Crickets (Older)	8	50	3	33	11	44
<b>Parents</b>	11	69	5	31	16	100
<b>Duration</b>						
12 weeks	4	36	5	100	16	64
24 weeks	7	64	0	0	9	36
<b>Gender</b>						
Female	10	99	5	100	15	94
Male	1	1	0	0	1	6
<b>Referral</b>						
CJM	5	45	3	60	8	50
MFM	2	18	0	0	2	12.50
CLSC	4	37	2	40	6	37.50
<b>Educational level</b>						
DES	5	45.4	1	20	6	37.50
DEP	2	18.20	0	0	2	12.50
DEC	2	18.20	0	0	2	12.50
Under-grade	2	18.20	0	0	2	12.50

Legend: 1. Youth center of Montérégie referral: center handicap, stimulation, and respite neglect. 2. Maskoutains family house referral: services. recent immigrants. 3. Local community service

**Table 3.**

*Key characteristics of professionals participating in the assessment*

Characteristic	Instructor		Educator		Coordinator		Technician	
	n	%	n	%	n	%	n	%
<b>Age cohort</b>								
21-30							1	1
31-40			1	50				
41-50								
51-60	2	100	1	50	1	100		
<b>Years of experience</b>								
2-5							1	100
5-10			2	100				
>10	2	100			1	100		
<b>Gender</b>								
Male								
Female	2	100	2	100	1	100	1	100
<b>Educational level</b>								
DES								
DEP								
DEC			1	50			1	100
Under-grade	2	100	1	50	1	100		

## Instruments and Data Collection

Data were collected using quantitative and qualitative instruments.

**Child Development Assessment Scale (CDAS).** The Child Development Assessment Scale (CDAS) (Pomerleau et al., 2005) was used to measure the emotional development of the children. It was administered by research assistants two or three different times depending on whether the children attended the HGC for one or two terms. The CDAS includes 14 age levels ranging from zero to five years old. The results obtained make it possible to situate the child's development at cognitive, linguistic, motor and emotional levels according to a validated and standardized scale presented in the form of a thermometer. The instrument demonstrates good temporal stability for the cognitive/language ( $r = 0.71$ ), motor ( $r = 0.49$ ) and socio-affective ( $r = 0.41$ ) scales, good internal consistency on the motor, cognitive and language scales ( $\alpha = 0.67$ ), as well as good concurrent validity for the last two scales. We cannot calculate our own validity and reliability indices for this instrument because the sample was too small.

**Ages and Stages Questionnaires:** Social-Emotional (ASQ:SE). The *Ages and Stages Questionnaires: Social-Emotional* (Squires et al., 2002) was used to measure the emotional development of the children. It was completed by the educational team (teacher and educator-guide at the HGC). This questionnaire, which takes about 15 minutes to complete, contains 22 to 36 items depending on the age of the child. It is designed for children between six months and five years of age and measures seven components of their socio-emotional development: self-regulation, the ability to follow instructions, communication, adaptive behaviours, autonomy, emotions and interactions with others. A three-level response scale (1 = never to 3 = most of the time) allows the respondent to comment on the frequency of socio-emotional behaviours observed for the child in question. The authors of this questionnaire (Squires et al., 2002) report good methodological properties for this instrument ( $\alpha = 0.82$ ; test-retest = 94%). We cannot calculate our own validity and reliability indices for this instrument because the sample was too small.

**The Portage Guide to Early Intervention.** The Portage Guide to Early Intervention (Bluma et al., 1976) is a program that observes typical behaviours in children and was completed by the interns for each of the children, every week during the fall and winter terms. This instrument takes 15 minutes to complete. The items that make up this program illustrate behaviours associated with the various stages and dimensions of development, and their number varies according to the child's

age (zero to five years of age). This guide makes it possible to assess the presence or absence of behaviours in the following six dimensions: 1) early infantile stimulation (zero to four months: prerequisite skills for later development); 2) cognitive (e.g., differences and similarities in what the child sees and hears); 3) language (i.e., receptive and expressive vocabulary); 4) motor (i.e., gross and fine motor movements); 5) social (i.e., social behaviours, social skills and interactions with others, such as smiling, vocalization, cooperation); and 6) autonomy (e.g., eating alone, using utensils). We cannot calculate our own validity and reliability indices for this instrument because the sample was too small.

### **Semi-structured interviews with parents.**

Parents also answered questions about their perception of their child's growth and development during a semi-guided individual interview (30 minutes) conducted by a research assistant at the beginning of the term (October 2016 or February 2017), at mid-year for parents present at the HGC all year round (in December 2016), and at the end of the term (December 2016 or May 2017). The interview guide consisted of six main topics (experience of attending HGC; relationship with staff; self-esteem, parenting skills and role; service impact on children). The question reported in this study was worded as follows: "Do you think that the HGC has helped your child? Yes/No, if so, how?".

**Semi-structured interviews with the HGC team.** Semi-structured interviews regarding the growth and development of all the children who attended either session were conducted at the end of the school year with members of the HGC educational team. For each of the children, three open-ended questions were addressed to the educators ( $n = 2$ ) and educator-guides ( $n = 2$ ) responsible for each of the groups of children: 1) How did the child grow and develop during their attendance at the HGC? 2) How would you qualify the relationship that has developed between the child and their educator? 3) Are there any contextual or personal factors concerning the child and their family that have facilitated the relationship between the child and their educator or, on the contrary, made it more difficult?

## Data Analysis

Because statistical analyses cannot be conducted on small samples, we performed an analysis of the individual progress of each child separately based on the data collected using the CDAS, ASQ:SE and the Portage Guide. Thus, each child was compared to their own self between the beginning and the end of their time at the HGC in order to categorize their temporal developmental progression on the affective, emotional and social planes, according to a scale

of measurement with several different rating levels (0= deterioration and stagnation; 1 = stabilization; 2= improved; 3= advanced). This analysis strategy enabled us to better understand the magnitude of the gains in the children's developmental outcomes during their time at the HGC. In order to analyze the qualitative data from the interviews, we performed a content analysis to describe the development of the children during their time at the HGC. More specifically, we quantified the frequency of characteristic behaviours of children in each of the developmental dimensions observed from the comments of members of the educational team. Finally, through an analysis of interviews with the parents about the impact of attending the HGC on the development of their child, we identified and counted the comments indicating an evolution or non-evolution of their children's abilities between the beginning and the end of their HGC experience.

### 1) Ethics Approval

All participating families signed a consent form to participate in the study for themselves and their children, duly approved by the research ethics committee of UQAM and CIUSSS de la Capitale-Nationale. The parents received a \$20 gift card as compensation for their participation in the interviews.

## Results

This section presents the main results of the quantitative and qualitative analyses of the affective, emotional and social dimensions of children attending the HGC.

### 1) Results of Measurements on the Children

**Affective dimension.** The analysis of the results of the CDAS affective scale reveals that at the end of their time at the HGC the scores of 4 (16%) children shows impair development, 7 (28%) stable development, 8 (32%) improved development, and 6 (24%) high development. In sum, the results suggest that more than half of children attending HGC (56%), that is to say, 14 children out of 25 made some development progress in the socioemotional domain.

**Emotional dimension.** The results of the ASQ:SE emotional questionnaire show that 40% (10/25) of the children were in the problematic zone at the beginning of their HGC attendance and that 24% (6/25) were still there at the end. Nonetheless, an analysis of the children's scores indicates that more than half of the children (56%), or 14 out of 25 children, showed improvement between the start and the end of their time at the HGC. Of the six who are still in

the problematic zone, three (12%) showed an average improvement in their skills while two others (0.8%) showed a great improvement. Of the 19 who were in the non-problematic zone, seven (28%) had lower scores than at the start, three (12%) remained stable, six (24%) showed an average improvement (from 10 to 30 points) and three (12%) showed a greater improvement (from 31 to 70 points).

**Social dimension.** Regarding the results of the social measure (Portage Guide), the analysis of the evolution of the scores for the 25 children participating in the study indicates that 16 children out of the 25, or nearly 2/3 of them (64%) made significant gains between the start and the end of one term of attendance at the HGC.

Following the analysis of the results of the three instruments used to assess children's development (ASQ:SE, CDAS, Portage Guide), the research team produced a criterion-referenced synthesis of all the achievements observed. When the gains made by the children on the three instruments are counted, we find that 22 of the 25 children (88%) present scores that improved on at least one of the three measures, during their time at the HGC. Only 12% (3/25) of the children participating in the study made no improvement at all. More specifically, 52% of the children (13/25) obtained higher scores at the end of the HGC term on one of the three measures, 12% (3/25) on two measures and 24% (6/25) on all three developmental measures.

### 2) Results of Interviews with Members of the HGC Educational Team

**Affective dimension.** An analysis of interviews with members of the educational team indicates that 21 of 25 children attending the HGC (84%) were described as exhibiting behaviours indicative of emotional vulnerabilities during the first weeks of their attendance. For instance, 11 of them exhibited attachment-difficulty behaviours in their relations with their educator (e.g., rejecting contact with their educator, reaching out to all adults without distinction, hugging strangers who entered the room). Eight children were found to be not very assertive (e.g., not asking for help, not expressing any needs) and six other children exhibited behaviours demonstrating a form of emotional insecurity (e.g., difficulty in detaching from their stuffed toy, constantly asking to be held by their educator while weeping, unable to explore without the proximity of the educator). Finally, one child clung to adults while another refused to communicate with any adult other than his educator.

At the end of the 12-week session, members of the educational team reported noticeable improvements in 17 of their 21 children. Of the 11 children showing emotionally insecure behaviours, 10 exhibited behaviours

demonstrating that they had formed an attachment bond with their educator (e.g., hugging the educator, crying when the educator moves away, going towards the educator). Of the eight children who did not assert themselves, seven had started to ask for help, to express their needs, to be more extroverted (e.g., using a louder tone of voice, speaking rather than pointing, taking initiative, asking for help, and crying to express a need instead of being passive as they had been before). Finally, five of the six children exhibiting emotionally insecure behaviours had progressively developed a sense of security during their time at the HGC (e.g., succeeding in detaching from their stuffed toy, participating in activities without their stuffed toy).

**Emotional dimension.** 17 out of 25 children (68%) presented challenges of this order when they began attending the HGC. Nine of them expressed little or no positive affect and three showed no emotion other than anger. The members of the educational team described them in these terms: "lack of eye contact," "never smiles," "no pleasure," "lack of emotions," "holds back emotions," "no reaction to attacks by others," "never expresses sadness or fear." Six children were experiencing emotional distress at naptime. They would have crying fits when falling asleep or awakening, and were startled or woke up frequently during their nap, indicating restless sleep. Four children were described as experiencing emotional instability, frequently moving from one emotional state to another within the same day. Finally, six children found it difficult to regulate themselves once they were overcome by an emotion (persistent crying and screaming in spite of consolation, tantrums that took on disproportionate proportions: hitting, throwing chairs, etc.).

After one or two terms, many of these children seem to be making good progress. Seven of the nine children with neutral affects began to express joy and pleasure. The members of the educational team were able to observe them having fun, laughing and skipping, with a sparkle in their eyes. The three children with very little affect variability began to express more than anger, including joy, but also sadness, surprise, pride, etc. Half of the children who experienced intense emotions at naptime showed progress by the end of their time at the HGC (e.g., falling asleep and staying asleep, decreased crying, etc.). The four children moving from one emotional state to another were starting to feel more stable, possibly reassured by the stable and warm environment they found each day at the HGC. Finally, for the seven children who had difficulty regulating themselves once they were grappling with sadness, fear or anger, the observations indicate that they managed to recentre themselves and calm down more quickly or to express their feelings and emotions more

easily (e.g., crying or naming the emotion rather than hitting, pushing or throwing objects).

**Social dimension.** Regarding the ability to follow routines and respect social rules, 14 children (56%) experienced difficulties during their first days at the HGC. Five children had great difficulty following social rules during mealtimes. These children pushed their chairs away from the table or got up from the table repeatedly, threw their food and utensils frequently, ate with their hands (although they were old enough to eat with utensils). Seven children exhibited disorganized behaviours during activities in the room: running aimlessly, climbing on furniture, throwing toys, using toys inappropriately, fidgeting during transitions, as a few examples. In addition, six children frequently exhibited oppositional behaviours. In some, this manifested itself passively (e.g., not following instructions, walking away instead of participating) or in an active way (e.g., shouting, spitting at the adult, disobeying the adult). Members of the educational team observed significant improvements in nine of the 14 children by the end of their time at the HGC. The five children who exhibited challenging behaviours at mealtimes at the start of their time at the HGC performed better in this routine at the end of the term. For example, there was a decrease in behaviours that challenge the social framework of early childhood (e.g., children throwing their bowl, food and utensils less often, starting to hold their spoon, pushing back their bowl or plate when they have finished, some starting to say thank you). Five of the children who were disorganized throughout the day began, at the end of their time at the HGC, to integrate the routines and adapt more smoothly and harmoniously to the sequence of activities. Finally, members of the educational team observed a noticeable decrease in oppositional behaviour in two-thirds of the children who presented it when they started attending the HGC.

Sixteen of the 25 children participating in the study had difficulties in their social relationships with their peers or with the group in general. Of these, 10 showed little interest in other children or did not play with them or showed a certain intolerance to the presence of other children around them—in general, an absence of friendly ties with other children was observed in these children. In addition, nine children exhibited anti-social behaviours. For some this manifested in rude behaviours such as taking toys from another child's hand or rushing up to the other children and immediately starting to play rather than approaching calmly and asking to join the game. These children were also rude or used inappropriate language (swearing). In other children, different forms of aggression were observed: pushing, pulling, hitting, hair-pulling, biting, etc. Finally, four children showed great

shyness, unable to take their place in the group and remaining in a passive observer position.

At the end of their time at the HGC, of the 10 children who showed little interest or even intolerance towards others at the beginning of their time at the HGC, eight were able to better tolerate the physical proximity of other children or even to create strong friendly ties with them. Some of these children had begun to approach other children and ask them to play, others had managed to make friends. Two-thirds of the children who exhibited rude or aggressive behaviour at the start of their HGC attendance made significant progress in controlling this behaviour. And finally, all of the introverted children had gradually managed to open up, to take more initiative (e.g., suggesting songs or games), to actively participate in the different moments of the group's life as well as to assert themselves in the group rather than standing back.

### 3) Results of Interviews with Parents

Ten of the 16 parents participating in the study completed the interview at the end of their time at the HGC, because the other six cannot be reached.

#### **Affective and emotional dimension.**

Seven parents reported observing changes while three did not observe any differences. Among those who reported improvements, three gave examples that can be classified in the affective or emotional dimension. One mother shared how her child was able to make eye contact at the HGC when he had not before:

"Look, he was looking at everyone with a big smile when he got there, and my son was not making eye contact a few months ago. It's quite extraordinary to see that he is now emotionally invested in this team".

Another mother explained that her child had fewer tantrums:

"They were able to calm him down quickly enough, at the beginning he had more tantrums and it took longer to calm him down, and now they're not so bad and they don't last as long."

**Social dimension.** The majority of parents who reported improvements (7/10) pointed to their child's socialization. Four of them indicated that it was easier at the end of the HGC attendance for their child to relate to others, as evidenced by these two excerpts:

"Well, the fact that she is less shy, that she approaches people, she loves other children, she's gentle with babies, it's fun to see that, that she communicates like that with other children."

"It helped him socialize because it's

great that he socializes with my family, and my friends, but this experience helped him open up to new people, I found it enriching for him that it gave him a little bit of independence too, to get there and say 'I'm happy' and even 'you can go, Mom.'"

In sum, 70% of parents in this first cohort observed a developmental change in their child at the end of their first term at the HGC. Their observations mainly concern the affective dimension.

### Discussion

The analysis of the quantitative and qualitative data suggested that several short-term effects were observed as theorized. More specifically, the results of this evaluation suggested that the majority of children attending the HGC made some progress in their socio-affective, emotional and social development from the start to the end of the intervention, while a more limited number of them don't attain significant advances. Several hypotheses can be made to explain these results.

First, we could state the hypothesis that the effects of the training program are largest for the high-risk or more disadvantaged children and their families. This is coherent with the literature on early childhood interventions (Hasan et al., 2013) and with the characteristics of the children attending HGC. In other words, the more vulnerable children are more likely to achieve greater impact from these early interventions (Ruhm and Waldfogel, 2012).

Second, the positive results could also be explained by the quality of the implementation of the training approach as informed by the process theory of HGC and the literature (Gambaro et al., 2014). In one hand, the approach at HGC is based on the idea that an adult's sensitivity to a child's needs is a key component of high-quality interactions between adults and children who have previously or are currently living in difficult circumstances (Ahnert, 2016). In this context, after analyzing the children's needs, the members of the HGC educator team implemented a caring approach that emphasized strategies to create a relationship of trust or pre-attachment between the child and the educator is identified both in the literature and in the theory of this training program as one of the primary drivers of affective development and a factor that can change the trajectory of development in vulnerable children (Goldsmith, 2010). In the other hand, the collaborative relationship between educators and parents could be another variable that may explain the observed impacts on the children (Ebbeck et al., 2015). For example, in order to encourage secure attachment, the educational team ensures that each child has one-on-one

interactions with their educator in a positive environment, particularly at difficult moments for the children, such as the morning drop-off, and the return of their parents at the end of the day (Kontos and Wilcox-Herzog, 1997).

Third, the consistency between the theory of effects and the effects observed in the children leads us to hypothesize that the training program has reached a high level of effectiveness, as it has been fully integrated into the practices of the team members involved. Concomitantly, this integration into the daily practices of professionals could lead to the observed outcomes in children, and to others short term outcomes in terms of cognitive, language and motor development (Camilli et al., 2010).

Lastly, it is important to consider the role of confounding variables or factors that may have influenced the findings beyond the intervention itself, especially for those children that have not made progress while attending the HGC. For example, family background and parenting experiences exert a stronger influence on children's outcomes (NICHD Early Child Care Research Network, 2002). Thus, children from immigrant families exposed to this intervention could perform worse than their native-born Canadian peers for several reasons, or parents with mental health issues, drug abuse problems or experiencing family violence would not be able to acknowledge the progress their children are making. Additionally, gender and temperament have been found to moderate the effects of high-quality childcare interventions (Matthews et al., 2009). For instance, boys with low self-regulation and aged of one to three would benefit more from the HGC training approach than girls. Although this hypothesis seems plausible, it requires further investigation on different groups of children attending HGC.

### Limitations

The results of this study are promising and attest to the effectiveness of the educational approach at the HGC. However, further research will be necessary to confirm these findings because this exploratory evaluation study does not allow us to establish cause and effect relationships. It would have been interesting to have a control group from a similar population to control for the influence of other factors. That said, putting together a control group as diverse as the group under study would be very difficult, if not impossible, in the current context. The HGC is the only initiative of its kind in Quebec, as it offers educational services to a very diverse clientele of vulnerable children and families.

Second, the low number of cases studied constitutes another limitation. Other observations of the children at the HGC would provide further support for the results. It would also be interesting

to expand the pool of children and parents evaluated by questioning other cohorts of families that have attended the HGC in the past. Professionals from partner organizations and institutions could also participate in future studies.

Another limitation of the study lies in the difficulty of evaluating the children with specific characteristics that could have had an influence on the changes observed. The profiles of the children at the HGC are quite diverse and pose a challenge to any standards of normality as well as the body of knowledge in the field of child development. To address this challenge, Buckner (2008) suggests transitioning from a research approach focused on variables (e.g., mental health index) to an approach focused on the person (e.g., cluster analysis) in order to identify sub-groups of children (in Buckner's case, homeless children) with needs that vary in scope depending on the different dimensions of their behaviour. Another evaluation strategy proposed by Bledsoe & Graham (2005) involves adopting an inclusive approach in order to conduct an evaluation that is sensitive to the needs and cultural traits of members of different communities, in particular those who are frequently excluded or under-represented (e.g., users). These two examples demonstrate the importance of updating not only the approaches to evaluation, but also the epistemology that underpins the evaluation.

The children's limited exposure to the HGC's interventions constitutes another limitation of the study. Given that the children attend the HGC only two days a week for six hours a day over 12 weeks, it can be difficult to see the long-term effects of the intervention. Despite this, the method used has allowed us to conduct a rigorous exploration of the short-term effects on children of attending the HGC through measurements taken at the start and at the end of the term and the triangulation of multiple sources of data.

### Conclusion

This study is the first exploratory evaluative research to document the expected effects of this innovative early childhood training program on vulnerable children. Our findings suggest that the majority of children attending HGC made developmental progress in the affective, emotional and social domain. These results are consistent with the short-term outcomes identified in the theory of effects developed through stakeholder consultation and literature searches during the evaluation process. Thus, it helps validate the perceptions of the team of educators with respect to the soundness and effectiveness of their interventions and increases the legitimacy of this program in the eyes of other stakeholders, such as funders.

Furthermore, the research team was faced with significant challenges, particularly in terms of methodology. The diversity of the children at the HGC called into question the relevance of using only quantitative measures constructed to evaluate whether the children complied with standards of normality. For this reason, the research team gave more weight to qualitative measures during data collection. In this way, with an adapted research methodology, the evaluation approach made it possible to gain a better understanding of the growth and development of the children over the course of their time at the HGC.

Lastly, it is important to mention that the results of this study have implications on several levels. First, other colleges can replicate this type of innovative program in order to broaden the scope of the training offered to students in early childhood education and thereby better respond to the needs of these children and their families. Childcare services and other community partners can also make use of these interventions to support families in their regions. The Ministère de la Famille can use this training approach as a foundation for developing programs for families and children exposed to the same adverse conditions who are currently excluded from the network of government services.

## Declarations

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### Conflict of Interest

All authors declare that they have no conflicts of interest.

### Ethical Approval

The study was approved by the research ethics committee of UQAM and CIUSSS de la Capitale-Nationale, and performed in accordance with the ethical standards.

### Informed Consent

Informed consent was obtained from the parents and the professionals.

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